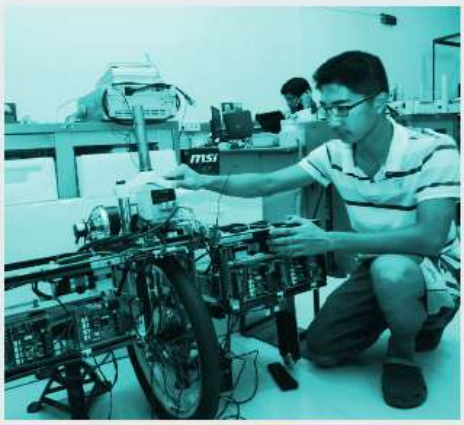
Annual Report on

Research 2016



AIT
Asian Institute of Technology

PREFACE

The Asian Institute of Technology is pleased to release the Report on Annual Research 2016. This provides a consolidated overview of all the sponsored activities conducted across the institute during the year. The research activities and its outputs are aligned to the institute's strategic priority of playing a leading role in the region's sustainable development.

The year saw a focused approach towards the research and development agenda that was achieved by building on AIT's niche in its areas of strength. This resulted in 428 sponsored and contracted projects, with a budgeted value of 1.69 billion Thai baht that were carried out during this year by the faculty and staff of the three schools: School of Engineering and Technology (SET), School of Environment, Resources and Development (SERD), and School of Management (SOM), as well as at AIT Extension, Internet Education and Research Laboratory (IntERLab) and Institute-wide centers.

AIT's continues to forge new partnerships and remains committed to building the quality of its research, which is demonstrated through book, journal and conference publications, which numbered 374 during the year. Other publications include the master's thesis and research study and the doctoral dissertations.

The year witnessed AIT successfully improve and strengthen the enabling environment for carrying out research, training and outreach related activities. The institute's efforts have also helped broaden AIT's network and bring about multi-disciplinary initiatives which addressed the growing and fast changing needs of the region. Moreover, AIT continues to contribute to the development of the region and beyond with its successful implementation of regional and transnational research projects.

AIT, therefore, remains committed to building on its research strengths through its innovative academic offerings and research undertakings.

I would like take this opportunity to thank all AIT faculty, staff, and students for their strong support and collective efforts towards achieving our research goals. Special thanks to Gopi Krishna of the Sponsored and Contracted Projects Office (SCPO) for this compilation that was made possible with the support from the schools.

Professor Sivanappan Kumar
Vice President for Academic Affairs

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WARNING
HOT SURFACE
DO NOT
TOUCH

Chapter 1: INTRODUCTION

1.1 AIT Mission

The Asian Institute of Technology promotes technological change and sustainable development in the Asian-Pacific region through higher education, research and outreach. Established in Bangkok in 1959, AIT is actively working with public and private sector partners throughout the region and with some of the top universities in the world.

Recognized for its multinational, multi- cultural ethos, the Institute operates as a self-contained international community at its campus located 40 km (25 miles) north of Bangkok, Thailand.

Besides the usual laboratories and academic buildings, the main campus includes housing, sports, and medical facilities, a conference center, and a library with over 100,000 volumes and 2,426 titles of periodicals. All serve to fulfill the AIT mission

> ***to develop highly qualified and committed professionals who play leading roles in the region's sustainable development and its integration into the global economy.***

1.2 AIT Vision

To become a leading and unique regional multicultural institution of higher learning, offering state-of-the-art education, research and training in technology, management and societal development.

With this clear, timeless vision, the multi-skilled team of students, faculty and staff at AIT are set to continuously strengthen the institution by becoming

- A trailblazer in advanced education in the region, with leadership in IT and new types of multidisciplinary programs.
- An exemplary institution, with an emphasis on academic quality in terms of courses and other aspects of the operation.
- A leader in professional development programs.
- A hub for the implementation of regional/transnational research projects, and a research facility for academic professionals. The hub will network with other academic and research institutions in the region and the world.
- A model international citizen.
- A collaborator and partner of national postgraduate institutions.
- A financially viable, self-sustaining institution, able to draw support from donors, the private sector and individuals, with good governance and strong leadership.
- A strong partner to its alumni, who are principal stakeholders through the AIT Alumni Association (AITAA).

Chapter 2: RESEARCH STATISTICS, TRENDS AND AWARDS

2.1 Project Numbers and Budget 2009-2016

In line with the desire to impact on society by integrating academic research with industry and society's needs, AIT witnessed a good growth in the numbers of sponsored and contracted projects undertaken and that of publications between 2009-2016. **Figure 2.1** gives an overview of the trend of the ongoing sponsored and contracted projects for the period 2009-2016 both in budget value terms and in terms of the number of ongoing projects undertaken.

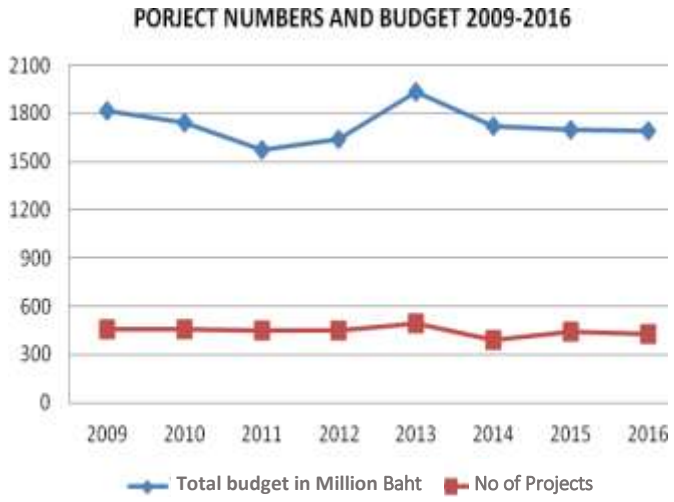

Figure 2.1: Project Budget in Million ('000,000) Thai Baht.

2.2 Trend of the Ongoing Projects by Category

Sponsored and contracted projects undertaken at AIT are are categorized as Research and development which includes Research, Capacity Building, Networking/Coordination, Training/Workshop and conference projects. The Academic Programs category comprises newly initiated Professional programs conducted by the different schools and AIT Extension category which comprises continuing professional education, short-course training and consultancy services. **Figure 2.2** provides the trend for the period 2009 – 2016 on budget value terms and **Figure 2.3** gives the trend in terms of the number of ongoing projects, under each category.

Publications in refereed Journals is one measure of academic productivity. **Figure 2.4** shows the trend of publications under the categories namely, Referred Journal Publications, Doctoral Thesis and Master's Thesis as well as completed projects for the period 2009-2016.

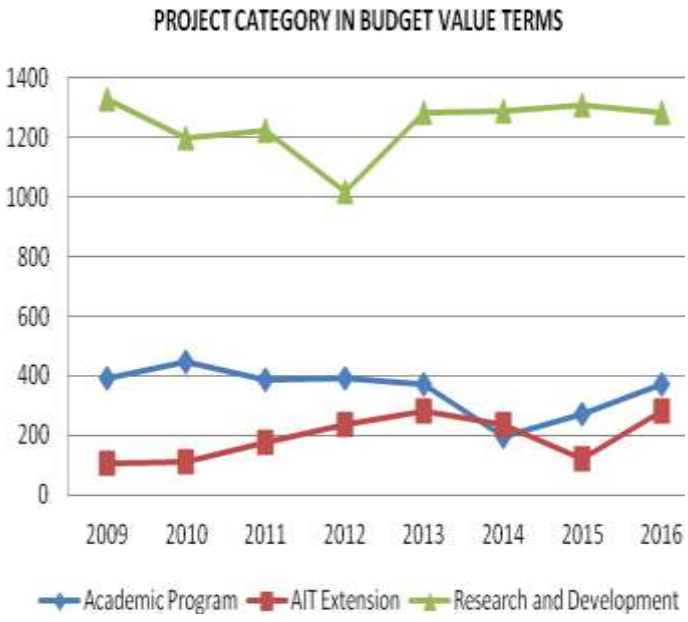

Figure 2.2 Budget Value terms 2008-2016

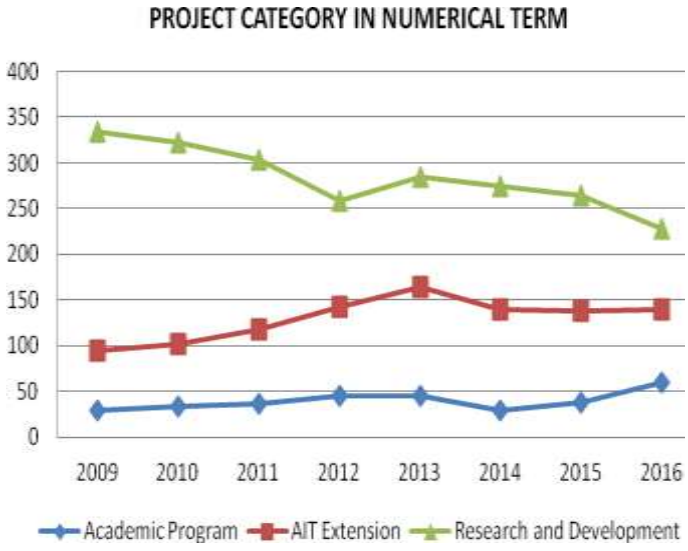

Figure 2.3 Numbers of Ongoing projects

The streamlining of Project management and corresponding incentives towards initiation of projects has helped reinforce the institutions research objectives and focus. **Table 2.1** highlights the top five Researchers with the Highest Number of Projects initiated 2006- 2016.

Faculty Name	No of Projects as PI	PI and Co PI
Prof Kanchana Kanchanasut	66	66
Prof S. Kumar	20	55
Prof C. Visvanathan	35	44
Prof Mukand S. Babel	35	41
Dr Kunnawee Kanitpong	31	34
Dr Kyoko Kusakabe	20	29

Table2.1: Top 5 Researchers with the Highest Number of Projects initiated 2006 - 2016

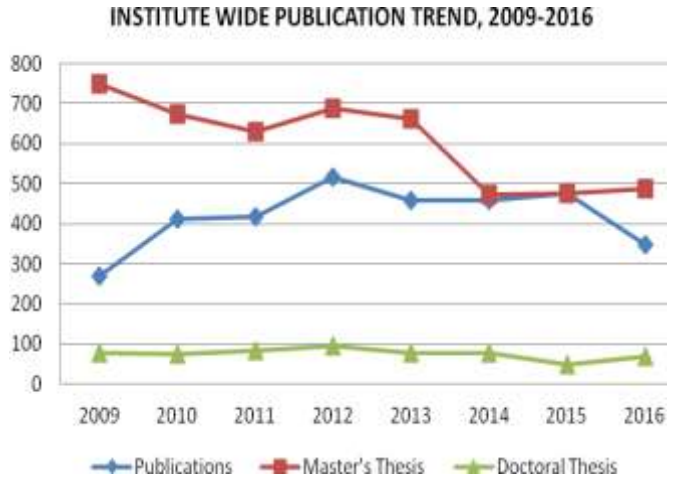

Figure 2.4: Institute Wide publications Trends

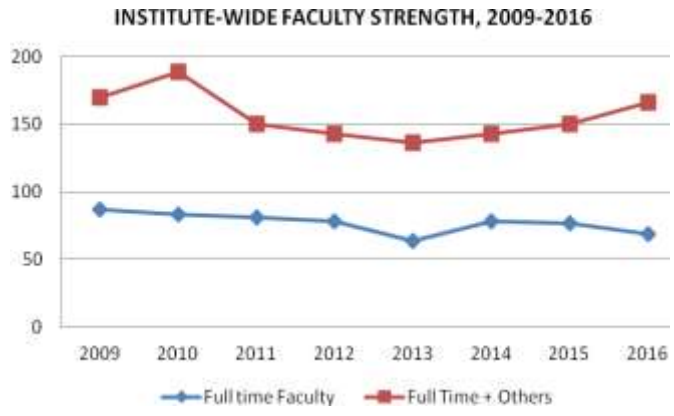

Figure 2.5: Faculty Strength 2009- 2016

Figure 2.6 gives an institute wide trend on the intake, Enrolment and graduated student strength for the period.

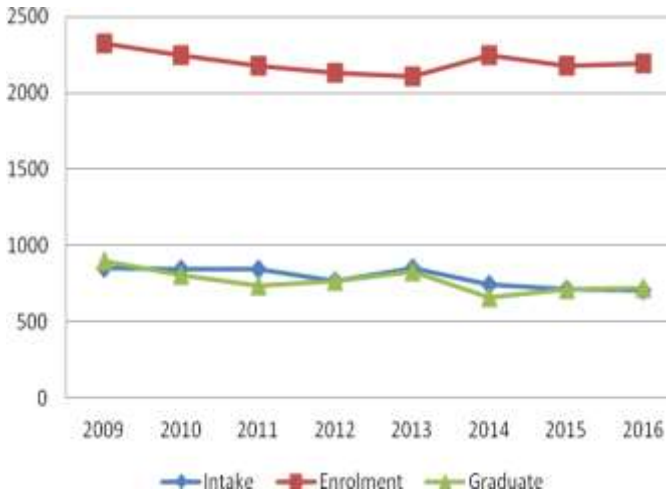

Figure 2.6: Instituted wide strength for the intake, Enrolment and graduated student strength for the period 2009-2016

2.3 Publication Trends

Publication and citation information is considered to be one of the most widely recognizable indicators of research output and quality. The top 5 most cited publications of the publications made by AIT researchers in Scopus are given below. It is planned to have a year on year analysis in due course.

1. On the acceptability of arguments and its fundamental role in nonmonotonic reasoning, logic programming and n-person games (Cited 1,911 time(s)) 1995; Artificial Intelligence; Dung, P.M.
2. Developments in industrially important thermostable enzymes: A review (Cited 588 time(s)) 2003; Bio resource Technology; Haki, G.D., Rakshit, S.K.
3. An analytical approach for DG allocation in primary distribution network (Cited 422 time(s)) 2006; International Journal of Electrical Power and Energy Systems, Acharya, N., Mahat, P., Mithulananthan, N.
4. Simultaneously mitigating near-term climate change and improving human health and food security (Cited 397 time(s)) 2012; Science; Shindell, D., J. C. I. Kuylenstierna, E. Vignati, R. van Dingenen, M. Amann, Z. Klimont, S. C. Anenberg, N. Muller, G. Janssens-Maenhout, F. Raes, J. Schwartz, G. Faluvegi, L. Pozzoli, K. Kupiainen, L. Höglund-Isaksson, L. Emberson, D. Streets, V. Ramanathan, K. Hicks, N. T. K. Oanh, G. Milly, M. Williams, V. Demkine, and D. Fowler.
5. Direct solid-liquid separation using hollow fiber membrane in an activated sludge aeration tank (Cited 356 time(s)) 1989; Water Science and Technology; Yamamoto, K., Hiasa, M., Mahmood, T., Matsuo, T.

2.5 AIT Distinguished Researcher Awards 2016

The AIT Distinguished Researcher Awards was instituted to recognize faculty for their contributions to the Institute through their research and service. Their efforts in implementing these research activities have greatly benefitted the Institute in terms of enhancing not only its research portfolio, but also garnered rich experiences and knowledge that were put back into the classrooms empowering the students. The researcher awards are based on the evaluation of faculty's sponsored activities and publications during the year.

The AIT Distinguished Researcher Awards are awarded in two categories – ages above and below 45 years. The 2016 award recipients are:

1. AIT Research Leader Award: Prof. M. S. Babel (WEM/SET)

2. AIT Young Researcher Award: Dr. Mongkol Ekpanyapong (ISE/SET)

Chapter 3: SCHOOL OF ENGINEERING AND TECHNOLOGY

1. VISION

The School of Engineering and Technology (SET) aims to become a unique and prestigious multicultural hub of higher learning in engineering and technology, offering state-of-the-art multidisciplinary programs and cutting-edge research in partnership with the industries for sustainable growth of the region. SET focus is on growth and long-term sustainability by enriching academic reputation and internationality.

2. CORE VALUES

Reflecting the uniqueness of AIT, the following core values are advocated by SET:

- **Excellence in teaching / learning**
- **Excellence in research**
- **Transparency of administration**
- **Quality assurance**
- **Unity in Diversity**
- **Culture of Collaboration**

School of Engineering and Technology (SET) is the biggest school in AIT with academic programs offerings in five countries: Thailand (mother campus), Vietnam, Sri Lanka, Nepal and Myanmar. The school is currently organized in three thematic areas and 8 academic outreach centers.

SET emphasizes on a learning process that combines theoretical problem-solving and real life application of engineering principles. Its research orientation is outward-looking; addersing the actual and anticipated needs of the region. SET enhances its academic portfolio by emphatically injecting the "5I" features namely internationality, innovation, integration, information technology and industrial partnership. The school is currently working on the international accreditation process for all programs.

In line with the mission of the Institute, the mission of the School of Engineering and Technology is:

To develop highly qualified engineers and technologists who play leading roles in promoting the region's industrial competitiveness in its integration into the global economy.

More information about the school can be accessed at the SET's homepage http://www.set.ait.asia/

3. Thematic Groups, Fields of Study and Multidisciplinary Programs

Through a rice and varied curriculum, students have many opportunities for intellectual growth. The School of Engineering and Technology offers degree and non-degree programs in three thematic groups:

CIVIL AND INFRASTRUCTURE ENGINEERING GROUP

Since the founding of AIT, its civil engineering fields have promoted modern methodologies, emerging technologies and innovative materials for the design and construction of safe and economical infrastructure in the region. The Civil and Infrastructure Engineering group includes the following fields of study:

1) Construction, Engineering and Infrastructure Management (CEIM)
2) Geotechnical and Earth Resources Engineering (GTE)
3) Structural Engineering (STE)
4) Transportation Engineering (TRE)
5) Water Engineering and Management (WEM)
6) Offshore Technology and Management (OTM)
7) Disaster Preparedness, Mitigation and Management (DPMM)
8) Gender, Transportation and Development

INDUSTRIAL SYSTEMS ENGINEERING GROUP

For several decades, AIT has served in the development of the region by equipping young engineers with the high-tech knowledge required to work in complex industrial environments. Since its inception, the Industrial Systems Engineering (ISE) thematic group at AIT has contributed to this mission by focusing on industrial competitiveness and innovation for sustainable growth in the region. The ISE group is comprised of the following fields of study:

1) Mechatronics (MEC)
2) Microelectronics and Embedded Systems (MES)
3) Industrial and Manufacturing Engineering (IME)
4) Nanotechnology

INFORMATION AND COMMUNICATIONS GROUP

Information and communications enable access, connections and sharing, in turn enable knowledge creation and economic opportunity. The fields in the Information and Communications group are:

9) Computer Science (CS)
10) Information Management (IM)
11) Remote Sensing and Geographic Information Systems (RS-GIS)
12) Telecommunications (TC)
13) Information and Communications Technologies (ICT)

Undergraduate Programs

1) Civil and Infrastructure Engineering
2) Computer Science/Information Technology
3) Electronics
4) Industrial Engineering

5) Information and Communication Technology
6) Mechatronics
7) Telecommunications

4. Strategic Research Areas

The School of Engineering and Technology has identified broad research areas related to the strengths of its faculty, its curriculum and its existing facilities that are the building blocks for education niches in engineering and advanced technologies.

The following lists the information about the specific focal areas grouped by Fields of Study.

Computer Science and Information Management (CSIM)

Software Engineering and Development; Information and Knowledge Management

Industrial Systems Engineering (ISE)

Design and development of devices and sensors; Automation and control of machines; Product design and integration of machines and processes; Planning, operation, control and logistics of Industrial systems

Remote Sensing and Geographic Information Systems (RS&GIS)

Remote Sensing (RS); Geographic Information System (GIS); Global Navigation Satellite System (GNSS); Geoinformatics Applications in Environment, Agriculture and Disaster Management, Sensor and WebGIS, Advance Mapping - UAV, LIDAR, Kinematic GPS, Monitoring Upper Atmosphere, Health GIS

Telecommunications, Information and Communications Technologies (TC, ICT)

Mobile Wireless Communications, Network Performance Analysis, Digital Communications

Geotechnical and Earth Resources Engineering (GTE)

Sustainable geological exploitation for engineering activities; Design of safe structures; Disaster mitigation and rehabilitation

Structural Engineering

Computational Mechanics, Earthquake Resistant Design, Experimentation Methods, Advanced Structural Materials.

Transportation Engineering (TRE)

Transportation Planning, Traffic Engineering, Highway and Pavement Engineering, Road Safety and Accident Analysis and Transportation Logistics

Water Engineering and Management (WEM)

Water resources management; Climate change impact and adaptation in water sector; Water related disaster management

5. Academic outreach Centers

The School of Engineering and Technology has a wealth of innovative and untapped knowledge database from its master's and doctoral research activities. Many outreach and research centers are set up to transform the knowledge into industrial needs. These centers also serve to transfer the practical aspects and the society impacts of the knowledge and technology back to the class room.

ACSIG: Asian Center for Soil Improvement and Geosynthetic

ACSIG provides a strategic location for advanced technological education, researches and outreach activities on the application and effective utilization of ground improvement techniques. Visit ACSIG: http://www.set.ait.asia/acsig/

ACTS: Asian Center for Transportation Studies

ACTS activities include modules on intelligent transportation systems, traffic simulation, freight transport, urban road safety and road safety audit. Visit ACTS: http://www.set.ait.asia/acts/

IFIC Information Center

IFIC coordinates the activities of the International Ferro cement Society (IFS) including publication of "Journal of Ferro cement", conducting continuing education courses and sponsored research projects in low-cost construction. Visit IFIC: http://www.set.ait.asia/ific/

Regional Network Office for Urban Safety

The Regional Network Office for Urban Safety (RNUS) is a collaborative center jointly operated by the AIT and the University of Tokyo for the promotion of urban safety engineering utilizing advanced engineering technologies including remote sensing and GIS. Visit RNUS: http://www.set.ait.asia/rnus/

Thailand Accident Research Center

The Thailand Accident Research Center is an offspring of MOTC's Road Safety Master Plan acknowledging the lack of information on accidents in Thailand and the need to establish TARC. TARC provides academic back up and a base for road safety research. Visit TARC: http://www.tarc.ait.asia, http://www.tarc.or.th/

AIT Center of Excellence in Nanotechnology

The Center of Excellence in Nanotechnology is jointly supported by Thailand's Nanotechnology Center (NANOTEC) and AIT, to cultivate and foster multidisciplinary activities including research and education in the applications of Nanotechnology in Developing World. Visit CoEN: http://www.nano.ait.asia

6. Governance

Dean

VORATAS KACHITVICHYANUKUL, BS, Natl Taiwan Univ; MEng, AIT, Thailand; PhD, Purdue Univ, Indiana, USA.

Professor (Simulation; ERP; Scheduling, Metaheuristics; Parallel Computing) [Planning and Scheduling Systems; Enterprise Resource Planning Systems; Supply Chain Modeling and Analysis; Discrete Event Simulation Software Development; Manufacturing System Simulation; Manufacturing Decision Support Systems; Just-in-Time Manufacturing System]

Associate Dean

SANGAM SHRESTHA, MSc., Institute of Agriculture and Animal Science, Tribhuvan University, Nepal; MSc., Asian Institute of Technology, Thailand; PhD., University of Yamanashi, Japan.

Associate Professor [Climate change and adaptation, Integrated water resources management, Hydrology and water quality modeling, Groundwater development and management, Sustainable water management policy]

3.1: SET – CIVIL AND INFARSTRUTURE ENGINEERING GROUP

Since the founding of AIT, its civil engineering fields have promoted modern methodologies, emerging technologies and innovative materials for the design and construction of safe and economical infrastructure in the region. The Civil and Infrastructure Engineering group includes the following fields of study:

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6) Offshore Technology and Management (OTM)
7) Disaster Preparedness, Mitigation and Management (DPMM)
8) Gender, Transportation and Development

3.1.1: SET – CONSTRUCTION ENGINEERING AND INFRASTRUCTURE MANAGEMENT

1. . Introduction

The Construction, Engineering and Infrastructure Management (CEIM) field of study prepares students to become effective managers and decision-makers familiar with the modern techniques of construction management, engineering management and infrastructure management. It trains professionals to play leading roles in the international construction industry. It molds students to become active leaders in infrastructure development and management.

Areas of Specialization

Students may choose to either specialize in Construction Engineering and Management (CEM) or Infrastructure Management (IM).

Construction Engineering and Management covers advanced project management approaches to finance, plan, design, construct, monitor and control construction projects. This master's degree program emphasizes in-depth construction project management approaches such as project organization management, construction planning and control, project procurement, contract management, productivity analysis and improvement, quality and safety improvement, IT in project management, sustainable construction, project financing, Public Private Partnership (PPP) project management, international construction joint venture and construction business strategy.

Infrastructure Management focuses on the processes necessary for the planning and development of new infrastructure, and on maintaining and operating mature infrastructure for sustainability. A wide variety of management topics

are covered, such as infrastructure planning, infrastructure economics, infrastructure management systems, optimal maintenance management, reliability of infrastructure systems, asset valuation and utilization, and infrastructure planning under risk and uncertainty.

Research Center

CEIM establish BIM Research group to capture new technologies in construction field. Moreover, BIM research group may generate new application and knowledge to support construction site and enhance construction method by conducting researches.

Computer Simulation Lab

- AROUSAL (Construction Project Management Simulator)
- STELLA (System Dynamics Simulation Software)
- Project Scheduling and Resources Management Software
- Contract and Cost Management Software
- @RISK Decision Tool (Risk Analysis)
- Virtual Reality

2. Faculty and Research Staff

CHOTCHAI CHAROENNGAM, BEng, King Mongkut's Inst of Tech, Thonburi, Thailand; MS, Univ of Kansas; PhD, Univ of Texas at Austin, USA

Associate Professor *(Project Planning, Scheduling, and Controls; Construction Productivity Improvement; Public Private Partnership Project; Project Financing)*

HADIKUSUMO, BONAVENTURA H. W., BEng, Univ of Diponegoro, Indonesia; MEng, AIT; PhD, Univ of Hong Kong.

Associate Professor *(Construction Information Technology; Construction Project Management; Construction Site Safety, Virtual Reality application in construction; Web-based project design and management; System Dynamic Simulation in Construction; Construction site safety)*

DJOEN SAN SANTOSO, BEng., Parahyangan Catholic University, Indonesia; M.Eng, AIT; PhD, Saitama University, Japan

Assistant Professor (Infrastructure management in developing countries, construction project management, public transportation, non-motorized transportation, risk management)

Visiting/Adjunct/Affiliated Faculty

Brockmann, Christian
Dipl.-Volksw., Dipl.-Kfm. (FernUni Hagen) DEA (ENSM Nantes) Dipl.-Ing. (TU Braunschweig)

Charoenpornpattana, Santi
Ph.D., University of Tokyo, Japan
M. Eng. Civil Eng. Asian Institute of Technology

Kunatippapong, Burin
M.M., Mahidol University
M.Eng. Queensland Univ. of Technology, Australia

Ogunlana, Stephen O.
Ph.D., Loughborough University of Technology
M.Sc., University of Ife

Takayuki Minato
Ph.D., University of California

Henrik Linderoth
Ph.D, Umeå University

Veerasak Likhitruangsilp
Ph.D., University of Michigan
M.S.E., University of Michigan

Wasan Teerajetgul
D.Eng, AIT
M.Eng. Khon Kaen University

Theerathon Tharachai
Ph.D., University of Michigan
M.S.E., University of Michigan

Pitch Sutheerawatthana
Ph.D., The University of Tokyo
M.Eng., AIT

3. Grants and Sponsored Research Completed in 2016

Professional master Project management in Hanoi, Vietnam Sept 2014
Duration: 26-09-14 to 31-07-16
Project Investigators Dr. BHW Hadikusumo
Sponsor: Construction Corporations in Vietnam
Total Contracted Amount (USD): 167,375

Professional master Project management in Hochiminh, Vietnam Sept 2014
Duration: 26-09-14 to 31-07-16
Project Investigators Dr. BHW Hadikusumo
Sponsor: Construction Corporations in Vietnam
Total Contracted Amount (USD): 180,250

Professional master Project management in Naw Pyi Taw, Myanmar Oct 2014
Duration: 26-10-14 to 31-05-16
Project Investigators Dr. BHW Hadikusumo
Sponsor: Ministry of construction Myanmar
Total Contracted Amount (USD): 270,375

4. On-going Grants and Sponsored Research

Professional master project management Ho Chin Minh, Sept 2015
Duration: 01-09-15 to 31-07-17
Project Investigators: Dr Hadikusumo
Sponsor: Construction Corporation in Vietnam
Total Contracted Amount (USD): 231,750

Professional master project management Hanoi, Sept 2015
Duration: 01-09-15 to 31-07-17
Project Investigators: Dr Hadikusumo
Sponsor: Construction Corporation in Vietnam

Total Contracted Amount
(USD): 180,250

Professional master project management Cantho, Jun 2015
Duration: 01-06-15 to 31-07-17
Project Investigators: Dr Hadikusumo
Sponsor: Construction Corporation in Vietnam
Total Contracted Amount
(USD): 154,500

Professional master project management in Naw Pyi Taw Myanmar ,Oct 2015
Duration: 26-10-15 to 31-08-17
Project Investigators: Dr. Hadikusumo
Sponsor: Ministry of construction, Myanmar
Total Contracted Amount
(USD): 257,500

Professional master project management Ho Chin Minh, Sept 2016
Duration: 01-09-16 to 31-07-18
Project Investigators: Dr Hadikusumo
Sponsor: Construction Corporation in Vietnam
Total Contracted Amount
(USD): 218,875

Professional master project management Hanoi, Sept 2016
Duration: 01-09-16 to 31-07-18
Project Investigators: Dr Hadikusumo
Sponsor: Construction Corporation in Vietnam
Total Contracted Amount
(USD): 154,500

Professional Masters in Project Management in Yangon, Myanmar
Duration: 01-Oct-15 to 31-Jul-18
Project Investigators: Dr BHW Hadikusumo
Sponsor: Ministry of construction, Myanmar
Total Contracted Amount
(USD): 334,750

Built environment curricula in the Asia Pacific region: Responding to climate change
Duration: 01-Oct-16 to 31-Jul-17
Project Investigators: Dr Djoen S Santoso, Dr Sohee Kim
Sponsor: Royal Melbourne Institute of Technology
Total Contracted Amount
(THB): 79,163.00

5. Publications

Papers in Refereed Journal

Aksorn P., Charoenngam C. (2016). Factors influencing life cycle management for community infrastructure development. International Journal of Project Organization and Management. Vol: 8,Page 63-86.

Bhanupong J, Bonaventura H.W. Hadikusumo, and A. Qayoom Memon (2016) A Bayesian Belief Network model of organizational factors for improving safe work behaviors in Thai construction industry. Safety science 82. Page 264-273.

Santoso, D.S. and Kulathunga, H.E.R., 2016, "Examining Happiness: Towards Better Understanding of Performance Improvement," Procedia Engineering, Vol. 164 pp. 354-361.

Santoso, D.S. and Sothy, S., 2016, "Analyzing delays of road construction projects in Cambodia: Causes and effects," Journal of Management in Engineering, ASCE, DOI: 10.1061/(ASCE)ME.1943-5479.0000467.

Papers in Conference Proceedings

Uthayakumar, A., and Santoso, D.S., "Examining Activities and Travels of Public University Students Using Activity-Based Survey." Proceedings of the 9th ATRANS Symposium – Young Researcher's Forum, 19-20 August 2016, Bangkok, Thailand.

Abewickrema, W., Santoso, D.S. and Joewono, T.B., "Bus Rapid Transit Implementation in Colombo, Sri Lanka: Impact and Community Acceptance." International Conference on Traffic Transport Psychology (ICTTP), 2-5 August 2016, Brisbane, Australia.

Joewono, T.B., Santoso, D.S, "Toward Action for Road Safety: Investigating Road Violations by Car Drivers in Developing Cities across Gender and Youngsters." International Conference on Traffic Transport Psychology (ICTTP), 2-5 August 2016, Brisbane, Australia.

Joewono, T.B., Santoso, D.S., Adinegoro, L. and Kharisma, A.H., "Characteristics of Travel, Activities, and Action Space of Young Workers Riding Motorcycles in Developing City." Proceedings of the 14th World Conference on Transport Research (WCTR), 10-15 July 2016, Shanghai, People Republic of China.

Santoso, D.S., and Kulathunga, H.E.R., "Examining Happiness: Towards Better Understanding of Performance Improvement." Proceedings of the Creative Construction Conference, 25-28 June 2016, Budapest, Hungary.

6. Doctoral Students' Dissertation

Construction Claim Negotiations in International Oil and Gas Projects: An Empirical Evidence from Iranian Projects
By: Mr. Hassan Fazliani
Supervisor: Dr. Chotchai Charoenngam

Termination Reasons and Retendering Strategies of Infrastructure Projects in Nigeria
By: Mr. Wilson Udo Udofia
Supervisor: Dr. Bonaventura H.W. Hadikusumo (Chairperson), Dr. Djoensan Santoso (Co-chairperson)

7. Masters Students' Theses and Projects

Owner's Contract Management in Multi Subcontract Packages Project: A Case Study of FPT Building Project
By: Mr. Hoang Thanh Ha
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Relationship Between Service Quality and Customer Satisfaction in a Material Supplier Company in Construction Project
By: Mr. Pham Duc Tai
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Development of Safety Management System for Construction: A Case Study of Kien Giang Vocational College
By: Mrs. Nguyen Thi Hoang Hoa
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Design Management for Design and Build of a Building Project: A Case Study of M-One Building Projects
By: Mr. Trieu Ha Huynh
Supervisor: Dr. Bonaventura H.W. Hadikusumo

The Owner's Quality Management Plan: A Case Study of Sandy Beach Resort Project in Danang, Vietnam Operated by Centara Hotel and Resort (Thailand)
By: Mr. Le Van Hung
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Ranking Delay Factors in a Commercial Project: A Case Study of Hoang Thanh Tower, Vietnam
By: Mr. Ngo Doan Loc
Supervisor: Dr. Chotchai Charoenngam

The Relationship Between Job Satisfaction, Stress and Safety Practices of Myanmar Construction Workers
By: Miss Zin Thi Tun
Supervisor: Dr. Djoen San Santoso

Measuring Organizational and Contractual Performance of Construction Supply Chain Projects in Myanmar: A Balanced Scorecard Approach
By: Mr. Aung Phyo Kyaw
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Cost of Quality Control Practice in Building Construction in Myanmar
By: Ms. Aye Thiri Thu
Supervisor: Dr. Chotchai Charoenngam

Enterprise Management System in Construction Firms in Afghanistan
By: Mr. Hewad
Supervisor: Dr. Chotchai Charoenngam

Delivery System Selection and Critical Owner Decision Option Identification in Real Estate Development Companies in Sri Lanka
By: Mr. Gunarathna Vidusha Jayamal Mendis
Supervisor: Dr. Chotchai Charoenngam

Readiness Assessment Model (RAM) for BOT Transportation Construction Projects
By: Mr. Merenghege James Lalintha Salgado Goonaratne
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Assessing Contract Administration of Local Contractors in Foreign-Aided Projects in Nepal
By: Miss Sambridhi Shah
Supervisor: Dr. Chotchai Charoenngam

Decisional Uncertainties in Construction Projects as a Causational Force for Disputes and Their Formal Legal Interpretation by UK Legal System
By: Miss Ankita Barman
Supervisor: Dr. Chotchai Charoenngam

Analyzing Impacts of Implementing Electronic Bidding System in Thailand Public Construction Projects on Small to Medium Contractors
By: Mr. Nuttapon Bourpanus
Supervisor: Dr. Djoen San Santoso

Examining the Applications of Sustainability and Resilience Concept Practice in the Development of Transportation Infrastructure Projects in Myanmar
By: Miss Su Myat Kyaw Hlaing
Supervisor: Dr. Djoen San Santoso

Analyzing Factors of Change Management that Influence the Implementation of Partnership in the Myanmar Construction Industry
By: Miss Nyein Wai Pwint
Supervisor: Dr. Djoen San Santoso

Owner's Project management Strategies in High Rise Building Project: A Case Study of SR Central Project
By: Mr. Huynh Quoc Phong
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Developing Quality System for Small and Medium Consultant Company: A Case Study of Saigon WEICO
By: Mr. Kien Hung
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Project Contract and Control Strategies for PMC in Managing Multiple Contractors: A Case Study in Vietnambank Tower Project
By: Mr. Nguyen Xuan Phong
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Dynamic Environment: Identifying its Impact in the Construction Industry
By: Mr. Veerisetty Abhinesh Naidu
Supervisor: Dr. Chotchai Charoenngam

Community Assessment and Participation in the Environmental Aspects of a Smart City: A Case Study of Palava City
By: Mr. Dandu Aravind Varma
Supervisor: Dr. Djoen San Santoso

Different Types of Construction Joint Ventures for Contractors in Terms of Structures, Operation and Risk
By: Miss Gowthu Durga Venkata Manasa Devi
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Examining the Brickwork and Reinforcement Work in Residential Building Projects
By: Mr. Patchigolla Harsha
Supervisor: Dr. Djoen San Santoso

Construction Material Logistics in High-Rise Buildings
By: Mr. Javvadi Krishna Surya
Supervisor: Dr. Chotchai Charoenngam

Management of Construction Contracts and Its Risks in Build-Operate-Transfer Projects in India: A Case Study of National Highway One
By: Mr. Donkala Mourya
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Critical Risk Factors in Oil and Gas Engineering, Procurement, Construction (EPC) Projects in India
By: Mr. Ravula NVVSSS Sairam
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Information Modelling of Material Management Process for Contractor Organization: A Case Study of Medium Size Contractor in Hyderabad, India

By: Mr. Uppalapati Naveen
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Identification of Root Causes of Claims and Corresponding Disputes in Highway Projects in India
By: Miss Neeraja Satya Bulasara
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Effective Methods of Cost Reduction in the Pre-Construction Phase of Mid-Rised Residential Buildings: A Case Study in Hyderabad, India
By: Mr. Bodla Nikhil Kumar
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Examining the Impact of Operation and Maintenance Practices of Urban Water Supply Systems on Service Quality: A Case Study of East Godavari District of Andhra Pradesh, India
By: Mr. Sana Rajasekhara Rayudu
Supervisor: Dr. Djoen San Santoso

Integrating Vulnerability Management in Assessing Risks for Operation and Maintenance of Road Infrastructure
By: Mr. Nadapana Sai Raja Rama Chandar
Supervisor: Dr. Djoen San Santoso

Financial and Cost Management at Corporate and Project Levels for Contractors' Enterprises in India
By: Mr. Koneru Sreenivasa Krishna Babu
Supervisor: Dr. Chotchai Charoenngam

The Application of Quantitative Methods in Planning and Control of Projects by Construction Companies
By: Miss Srilakshmi Aparna Nori
Supervisor: Dr. Chotchai Charoenngam

Analyzing Risks of Built-Operate-Transfer Road Projects from the Public and Private Sectors' Perspectives in India
By: Mr. Dudala Sreeram Bhimesh
Supervisor: Dr. Djoen San Santoso

BIM-Based Virtual Augmented Reality for Construction Management
By: Mr. Sri Ram Srinivas Dudala
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Exploring Opportunities in Residential Construction Projects
By: Mr. Venkata Satyanarayana Raju Nadimpalli
Supervisor: Dr. Djoen San Santoso

Identification of Total Quality Management Factors of Construction Companies in India
By: Miss Annabathula Anjali Mounika
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Examining Challenges in the Development of Onshore Terminal Facilities for the Oil and Gas Industry: Case Studies in India
By: Mr. Aravind Sarma Turlapati
Supervisor: Dr. Djoen San Santoso

Implementation of Project Governance for Better Performance in Housing Projects in India
By: Mr. Suraj Arvapally
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Application of Building Information Modeling (BIM) in Bridge Project Management
By: Mr. Le Vo Tong
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Quality Control and Quality Assurance in Bridge Construction Project: A Case Study of Pedestrian Bridge Project in Can Tho City, Vietnam
By: Mr. Dinh Vu Long
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Quality Management in EPC Project Song Hau 1: A Case Study of Thermal Power Plant Project, Vietnam
By: Mr. Nghiem Duc Duong
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Contract Administration in EPC Project: A Case Study of Song Hau 1 Thermal Power Plant Project, Vietnam
By: Mr. Phan Van Nghia
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Integrating ISO9001, ISO14001 and OSHAS18001 for Project Developers: A Case Study of Riviera Point Project
By: Mr. Cao Nguyen Quoc Thang
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Process Management of Design and Build Factory Construction
By: Miss Truong Thuc Uyen
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Developing Quality Management System for Design Consultant at International Construction and Investment Consultancy Company Limited
By: Mr. Nguyen Cong Doan
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Design Management for Increasing Efficiency in Apartment Project: A Case Study of Thuwanna Apartment Project in Yangon City, Myanmar
By: Mr. Nguyen Cao Minh Dung
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Financial Performance Analysis: A Case Study of Tay Ho Construction and Investment Join Stock Company
By: Ms. Nguyen Huong Giang
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Strategy and Business Process Analysis for Improvement of Finishing Contractors in Vietnam
By: Miss Cao Thanh Thuy
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Procurement Management for ADB Funded Projects for Consulting Services and Construction in Transport Sector: A Case Study of Second Northern GMS Transport Network Improvement Project, Vietnam
By: Mr. Nguyen Van Dai
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Financial Modelling of Independent Power Producer (IPP) Investment: A Case Study of Vung Ang 1 Coal Fired Power Plant, Vietnam

By: Mr. Ho Xuan Hien
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Effectiveness of Project Investment: A Case Study of the Dinh Vu Polyeste Plant Project in Vietnam
By: Mr. Hoang Thanh Son
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Delay Analysis in EPC Power Plant Project: A Case Study of Vung Ang 1 Power Plant Project, Vietnam
By: Mr. Dang Trung Kien
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Project Management Strategies for Industrial Projects: A Case Study of Gloves Factory Project
By: Mr. Pham Hoang Duy Hien
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Comparative Financial Performance Analysis Between Thai and Vietnamese Energy Companies
By: Mr. Le Thanh Luong
Supervisor: Dr. Chotchai Charoenngam

Developing Project Management Guideline and Procedures for Owner: A Case Study of Hoa Sen University Office Building Project
By: Mr. Lam Huu Tri
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Conceptual Structure of Safety Law and Regulation for Construction in Myanmar
By: Miss Khaing Mar Win
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Analysis of Total Quality Management for Ready Mix Concrete
By: Mr. Min Si Thu
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Project Management Function for Managing the JICA ODA Project
By: Mr. Khin Maung Kyaw
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Developing QMS for Road Construction Division in Ministry of Construction, Myanmar
By: Mr. Min Thura Soe
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Problems with PPP(B.O.T.) Road Project Performance in Myanmar
By: Mrs. Thazin Khin Mg San
Supervisor: Dr. Chotchai Charoenngam

Financial Model of a Hydropower Plant Project
By: Miss Su Latt Kay Khaing
Supervisor: Dr. Chotchai Charoenngam

Risk Management in Bridge Construction Project: A Case Study of Ayeyarwaddy Bridge, Pakokku
By: Miss Theint Han Su Kyaw
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Contractor Safety Management: A Case Study of Affordable Housing Project in Dagon Seikkanm, Myanmar
By: Mr. Hein Thu
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Owner's Critical Activities in Pre-Planning (Preparation) and Planning of ODA Road Project
By: Mr. Aung Thura Win
Supervisor: Dr. Chotchai Charoenngam

Assessing Contractor's Contract Administration Competency from Owner's Perspective for the JICA Funded Road Project
By: Mr. Zaw Moe Lwin
Supervisor: Dr. Djoen San Santoso

Project Management Strategy for Solving Critical Major Delays in High Rise Building Projects
By: Mr. Kyi Hlaing Win
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Quality Management for Building Construction Project in Myanmar: A Case Study of Wunna Theikdi Football Stadium Construction Project in Nay Pyi Taw, Myanmar
By: Mr. Win Pe Than
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Lessons Learnt from Early Construction Stage of First ODA, ADB Road Project in Myanmar: A Case Study of Maupin-Phapon Poad Rehabilitation Project
By: Mr. Aung Myint Oo
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Group Quality Management System for Large Organization: A Case Study of Myanmar's Ministry of Construction
By: Mr. Tay Zar Phyo Wai Tun
Supervisor: Dr. Bonaventura H.W. Hadikusumo

3.1.2: SET – GEOTECHNICAL AND GEOTECHNICAL EARTH RESOURCES ENGINEERING

1. Introduction

The Geotechnical and Earth Resources Engineering (GTE) field of study educates students not only in the traditional areas of geotechnical engineering, such as foundation engineering, earth structures, underground excavation and slope engineering, but also in new dynamic areas such as tunnelling, ground improvement, geosynthetic engineering, land reclamation, computational techniques, forensic engineering and offshore exploration. GTE students are also trained to solve increasingly challenging environmental problems involving engineering for provision of efficient waste disposal facilities, clean-up of contaminated sites as well as prevention and mitigation of geohazards such as landslides and erosion problems.

Specialization Areas in Geotechnical Engineering:

- Soil Engineering
- Engineering and Applied Geology

Interdisciplinary Area of Specialization in:

- Geo-Exploration and Petroleum Engineering (GEPG)

Professional Master Engineering Programs:

- PME in Geotechnical Engineering and Management (PME-GEM)
- PME in Geoexploration and Petroleum Engineering (PME-GEPG)

Laboratory Facilities

GTE's laboratories are among the best equipped and most active geotechnique laboratories in the Asia-Pacific region. They include the Soil Mechanics Laboratory, the Rock Mechanics Laboratory, the Engineering Geology Laboratory, the Geo-synthetic Material Laboratory, the Geophysics Laboratory and the Geoenvironmental Laboratory. GTE laboratories support teaching and research activities and also provide commercial testing services for many large national and international infrastructure development projects.

Research Centers

GTE hosts the Asian Center for Soil Improvement and Geosynthetics (ACSIG) to promote training and professional activities in these emerging areas. ACSIG is also the Secretariat of the International Geosynthetic Society-Thailand Chapter. GTE is also the home of the Southeast Asian Geotechnical Society (SEAGS) which was established 30 years ago at AIT as the catalyst for promotion of professional activities and cooperation among geotechnical engineers in the region. SEAGS publishes the well-established Geotechnical Engineering Journal.

2. Research Facilities and Laboratories

The Geotechnical Laboratory can be boasted as one of the most equipped geotechnical laboratories in the region with more than 30 years of experience in both soil and rock testing. The laboratory, which offer technical services on testing and research on the engineering behavior and properties of soil and rock; geologic mapping; environmental geophysical surveys; and testing of geosynthetic materials conducted by ACSIG, consists of six (6) sections, i.e., *Soil Mechanics, Rock Mechanics, Engineering Geology, Geoexploration & Petroleum Geoengineering (GEPG), Geophysics, and Geoenvironmental Engineering*.

Soil Mechanics Laboratory

The Soil Mechanics Laboratory has facilities for testing and research on the engineering behavior and fundamental properties of soil. It is equipped to test compaction, seepage, compressibility, deformation and shear strength, soil dynamics, and ground improvement.

Among other equipment, it has an automatic Central Data Acquisition System (CDAS) and two temperature-controlled rooms that house triaxial and consolidation equipment. Its field operation unit has a full range of tools for sampling soils and rocks and field test equipment's for vane tests, Dutch cone tests, piezocone tests, pressure-meter tests, screw plate tests, electric logging, and vibration measurements.

Rock Mechanics Laboratory

The Rock Mechanics Laboratory has facilities to determine a variety of the physical and mechanical properties of rocks and rock aggregates required for research and practice.

Moreover, the laboratory is capable of determining hardness, swelling and slake durability index properties of weak rocks. The laboratory has provided testing services to a large number of infrastructure projects in the region.

Engineering Geology Laboratory

The Engineering Geology Laboratory has facilities for research on the engineering behavior and fundamental properties of rocks and minerals.

It provides classification and characterization tests for rock and minerals including petrographic and X-ray diffraction studies. It has stereoscopes, radial line planimetric plotter, stereo-sketch and sketch masters for analysis and interpretation of air photos as applied to mineral explorations, transportation route studies, forestry, and civil engineering.

Geophysics Laboratory

The Geophysics Laboratory is being developed for training and researches in Geosystem Exploration and Petroleum Geoengineering. It has a number of seismic, electric, magnetic and radiometric instruments, including some of the most advanced equipment such as G-856AX PROTON MAGNETOMETER, GRADIOMETER, GEODE SEISMIC SYSTEM and SYSCAL R1 Plus (IRIS Instruments), an all-in-one multi-electrode resistivity and induced polarization (IP) imaging system.

The Laboratory is capable of conducting and assisting in geophysical field surveys for engineering, environmental applications, mineral and groundwater resources, as well as in performing analysis, interpretation and visualization of geophysical data acquired.

Geoexploration and Petroleum Geoengineeirng (GEPG) Laboratory

This new laboratory unit hosts high-capacity computers installed with very specialized software used in the upstream sector of petroleum E&P industry, notably with the well-known software for subsurface exploration, petro physical characterization and reservoir simulation such as Petrel, Techlog, Eclipse, Pipesim, PetroMOD etc. which are worth of more than 2 million USD as donated by Schlumberger to AIT.

Geoenvironmental Laboratory

The Geoenvironmental Laboratory provides a variety of equipment for geoenvironmental engineering research. It has equipment for geotechnical and chemical analysis that supports research in fundamental processes related to soil, water and chemical interactions that are applied to site and risk assessment, waste containment systems, and remedial technology. The chemical analysis equipment, spectrophotometer, from which the ion concentration can be determined with good accuracy and precision, enables research on soil-contaminant interaction.

Flexible wall permeameter, rigid wall permeameter and consolidation cell with permeameter are used to analyze water and chemical migration through waste containment systems. While the electro kinetic cell with advanced monitoring and controlled system is utilized for research in site reclamation and site remediation.

3. Faculty and Research Staff

Emeritus Professor

A S BALASUBRAMANIAM, BSc, Ceylon Univ, Sri Lanka; PhD, Cambridge Univ, UK.

D. T. BERGADO, Ph.D. Utah State University, M.Eng. Asian Institute of Technology

Full-time Faculty

NOPPADOL PHIEN-WEJ, BEng, Chulalongkorn Univ, Thailand; MS, PhD, Illinois at Urbana-Champaign, USA.

Associate Professor *(Tunneling and underground excavations in rocks and soils; Slope stability and retaining structures; Landslides; Earth structures and dams; Pile foundations; Buried pipes and culverts)*

PHAM HUY GIAO, DEng, MEng, Asian Institute of Technology, Thailand; Dipl Ing (MSc), Bucharest University, Romania

Associate Professor *(Exploration and Engineering Geophysics; Petrophysics; Geotechnical Engineering; Computer-aided Analysis in Geoengineering)*

Dr KUO-CHIEH CHAO, BSc, National Chung-Hsing University, Taiwan; MS, Colorado State University, USA; Ph.D. Colorado State University, USA

Associate Professor *(Geotechnical and Earth Resources Engineering; Geosystem Exploration and petroleum Geo-engineering)*

4. Grants and Sponsored Research Completed in 2016

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5. On-going Grants and Sponsored Research

Professional Master in Geotechnical Engg. & manage-ment in Hanoi, Vietnam 2016 (PME_GEMHN03)
Duration: 01-Dec-16 to 30-Dec-18
Project Investigators: Dr Pham Huy Giao
Sponsor: FECON
Total Contracted Amount (THB): 2,952,250.00

6. Publications

Papers in Refereed Journal

Giao P. H. & T. T. Thoang (2016), Soil Characterization and Land Subsidence Prediction for the First MRT Line in HCM City, Geotechnical Engineering Journal of the SEAGS & AGSSEA Vol. 47 No. 1 pp. 26-31, March 2016.

Hiep H. & P.H. Giao (2016), Effect of Vacuum Pressure Distribution on Settlement Analysis Results for an Improved Thick Soft Clay Deposit at Sai Gon-Hiep Phuoc Terminal Port, South of Vietnam, Geotechnical Engineering Journal of the SEAGS & AGSSEA Vol. 47 No. 1 pp. 100-105 March 2016.

Papers in Conference Proceedings

Giao P. H., R. Maneejan and D. H. Hien (2016), Possible Applications of a Multi-layered Seismic Refraction Solution in Correction and Analysis of Sonic Log Data, Proc. of The 22nd Formation Evaluation Symposium of Japan (JFES 2016), 29-30 September, 2016, Chiba, Japan.

Giao P. H. (2016), Geoelectric modeling-based estimation of shale resistivity to enhance water saturation calculation for a low-resistivity shaly sand formation in the Cuu Long basin, Vietnam, Proc. Intl. 87th SEG annual meeting, 24-29 September, 2016, Dallas, USA.
-
Thoang T. T. and P. H. Giao (2016), A computer-aided subsurface database for HCM City's groundwater and land subsidence analysis, Proc. Intl. Conf. Geotechnics for Sustainable Infrastructure Development, p. 519-524, 24-25 September, 2016. Construction Publishing House, Hanoi, Vietnam.

Khupiwat V. and P. H. Giao (2016), Application of Laplace transform and inversion by Gaver-Stehfest algorithm in solving consolidation equation for soft clay deposits, Proc. 2016 International Conference on Sustainability in Civil Engineering, Nov. 26-27, 2016, Hanoi, Vietnam.

7. Doctoral Students' Theses

Subsurface Characterization and Land Sudsidence Analysis for Ho Chi Minh City's Development under Climate Change Conditions
By: Miss Ta Thi Thoang
Supervisor: Dr. Pham Huy Giao

Practices and Behaviour of Deep Excavations in Thick Soft Clay of Ho Chi Minh City, Vietnam
By: Mr. Nguyen Kiet Hung
Supervisor: Dr. Noppadol Phien-wej

8. Masters Students' Theses

Behaviour of Deep Excavation Using Earth Retaining Structures with Auxiliary Measures in Bangkok Subsoils
By: Mrs. Najiha Nadzru
Supervisor: Dr. Noppadol Phien-wej

Geotechnical Assessment on Impacts from the 2014 Chiang Rai Earthquake
By: Miss Kanokwan Chuenuam
Supervisor: Dr. Noppadol Phien-wej

Performance of Bored Piles in Yangon Subsoils
By: Miss Ei Kyaw
Supervisor: Dr. Noppadol Phien-wej (Chairperson), Dr. Tian Ho Seah (Co-chairperson)

Analytical Assessment of Pile Capacity in View of Effects of Groundwater Drawdown and Rebound Associated with Deep Well Pumping in Bangkok
By: Miss Kanthima Intachai
Supervisor: Dr. Noppadol Phien-wej

ANN-Based Prediction of Fractured Rock Mass Hydraulic Conductivity for the Frieda River Copper-Gold Mine in Papua New Guinea
By: Mr. Yervang Wang
Supervisor: Dr. Pham Huy Giao

Comparison of Different Logging Tools and Results of Well Log Analysis for the Fang Oilfield
By: Mr. Mongkol Meeprom
Supervisor: Dr. Pham Huy Giao

Electric Imaging of the Deltaic Subsoil along an N-S Profile in the Lower Chao Phraya Basin
By: Miss Aruni Nilupa Rajanayake
Supervisor: Dr. Pham Huy Giao

Investigation of Micro Flow Behavior of a Fractured Granite Basement Reservoir Based on Wireline Logging and Well Test Data
By: Miss Nguyen Thi Huong
Supervisor: Dr. Pham Huy Giao

Ground Movement Associated with Bangkok MRTA Blue Line Extension Shield Tunneling in Vicinity of the Chao Phraya River
By: Mr. Bibek Baral
Supervisor: Dr. Noppadol Phien-wej

MRTA Station Excavation under Situation of Space Constraint and Potential Hydraulic Uplift at Base: Cases of Sanamchai & Itsaraphap Stations
By: Mr. Woraphon Wiriyatharakij
Supervisor: Dr. Noppadol Phien-wej

Capacity of Large Diameter Bored Piles in Bangkok Subsoils
By: Miss Dolrueporn Sarakshetrin
Supervisor: Dr. Noppadol Phien-wej

Pumping Test Analysis for Groundwater Development at an Industrial Site in Cu Jut District, Daknong Province, Vietnam
By: Mr. Pham Duc Anh
Supervisor: Dr. Pham Huy Giao

Deformation of Diaphragm Walls and Ground Surface Settlement Induced by Excavation at a Project Near the Saigon River Bank
By: Mr. Le Dam Ca
Supervisor: Dr. Noppadol Phien-wej

Overview of Microtunneling Technology and Practice in Japan
By: Mr. Luu Hoang Phuong
Supervisor: Dr. Pham Huy Giao

Selection of Pipe Jacking Method for the Second Environmental Sanitation Project in HCM City Based on Soil Characterization Results
By: Mr. Doi Si Thanh
Supervisor: Dr. Noppadol Phien-wej

3.1.3 SET – STRUCTURAL ENGINEERING

1. Introduction

The Structural Engineering (STE) field of study teaches students to plan, design, and supervise the construction of infrastructure and facilities essential to modern life. Structural engineers investigate the behaviour and design of all kinds of structures, including buildings, skyscrapers, bridges, elevated highways, tunnels, airports, dams, power plants, factories, stadiums, shopping complexes, oil rigs and aircraft. They must ensure that their designs satisfy a given design intent predicated on safety and on serviceability. They are also responsible for making efficient use of funds and materials to achieve these goals. As structures become more complex, structural engineers strive to find innovative solutions to improve the structural performance. Therefore, STE students are taught to keep abreast of the latest developments in advanced structural materials, computational modelling of structural systems, seismic-resistant design, building aerodynamics, construction planning and management and much more. Students are also taught to question and challenge general beliefs and practices in the field through basic and applied research. The STE curriculum is kept up-to-date and relevant through the faculty's ongoing active involvement in the solution of strategic real world problems outside the classroom. It offers two areas of specialization and the flexibility to construct personalized study programs, either broad-based and multidisciplinary or narrowly focused and highly technical. STE alumni form a strong network of regional leaders in private practice, government service, education and research.

Areas of Specialization

STE students may choose one of two areas of specialization.

Structural Analysis, Mechanics and Computation focuses on computational and applied mechanics, finite element methods, structural dynamics, wind and earthquake engineering, computer-aided design and expert systems.

Structural Design and Materials stresses advanced and low-cost construction materials, concrete technology, advanced design of reinforced and pre-stressed concrete structures, seismic design and wind-resistant design of structures, bridge engineering, and fire protection technology.

2. Research Facilities and Laboratories

Structural Engineering Laboratory

The Structural Engineering Laboratory (STE Lab) has a long history of excellence in advanced structural and material research. The STE Lab is equipped with instruments for scientific research, which provide excellent experimental environment for scholars and experts in the Asian region to enhance academic cooperation and development. Completed in 1975 and renovated in 2000, the structural testing area of the laboratory is a versatile area with a two-storey clear height that can be used to carry out a wide range of tests of building materials, components, structural assemblies and models.

One of principal elements of STE Lab is a strong floor system. The strong floor is a 1.5 meter deep heavily reinforced concrete mat, covering an area of 380 square meters, with anchorage slots spaced 1 meter apart and cluster points with a capacity of 1,000 kN per cluster. This arrangement provides versatility in the mounting of experiments, and full-size members of complete structures can be loaded to destruction. A test control room and the hydraulic power supply area are located adjacent to the test floor.

The laboratory is equipped with a series of hydraulic actuators of various load (100 kN to 500 kN.), stroke (+100 mm to +250 mm.) and servo-value capacities for static, dynamic and fatigue testing. Standard laboratory instrumentation for structural engineering is available e.g.,

extensometer, universal testing machine, ultrasonic pulse velocity and strain gauge preparation, impulse force test hammer, etc.

Seismic Load Simulation Facility

Set up in 2001, the Seismic Load Simulation Facility is basically composed of (1) a rigid, A-shape, steel reaction wall, (2) a 50-ton force generating capacity, 1000-mm piston stroke, hydraulic actuator that operates under precision closed-loop servo value control, and (3) the existing strong reinforced concrete floor of the STE Lab. The facility has the capability to perform various experimental seismic tests on near-full-scale structural models, such as quasi-static tests, cyclic loading tests, and pseudo dynamic tests. The facility has been used intensively by many master and doctoral students in STE Field of Study.

Boundary Layer Wind Tunnel Laboratory

This wind tunnel laboratory is a state-of-the-art research facility for the study of wind loads and several complex wind-induced effects on buildings and structures. The laboratory was developed by a joint effort between School of Engineering and Technology at AIT and Faculty of Engineering at Thammasat University. The laboratory, located in Thammasat, is the longest and largest wind tunnel in Thailand. It is capable of simulating atmospheric boundary layer wind as well as smooth and uniform wind in its 2.5m x 2.5m tunnel section with wind speeds varying from 0.5 m/s to 20 m/s. The wind tunnel is well equipped with hot-wire anemometers, pressure transducers with rotary scanning system, multi-component dynamic force sensors, dynamic motion sensors, turn tables, rotary side frames, and several other instruments. With this facility, various types of advanced experimental research study, student training, and industrial aerodynamic tests can be realized. The construction of the wind tunnel was completed in 2003, and it has been used intensively since then by graduated students of AIT and Thammasat University.

3. Faculty and Research Staff

Emeritus Professor

PISIDHI KARASUDHI, Ph.D., Northwes-tern Univ., USA; M.Eng., AIT, Thailand; B.Eng., Chulalongkorn Univ. Thailand. [Solid Mechanics]

Full-time Faculty

KANOK-NUKULCHAI, WORSAK, Ph.D., Univ of California (Berkeley), USA. ; M.Eng., AIT, Thailand; B.Eng. (Hon), Chulalongkorn Univ, Thailand.

Professor *[Computational Mechanics; Finite Element Methods; Tall Building Static and Seismic Analysis; Bridge Engineering; Microcomputer Software for Structural Engineering; Genetic Algorithms; Nonlinear Analysis of Structures and Continua; Plate/Shell Structures; Engineering Education; Nano mechanics]*

PENNUNG WARNITCHAI, D.Eng., M.Eng., University of Tokyo, Japan; B.Eng. (Hon), Chulalongkorn Univ, Thailand**.**

Associate Professor [*Structural Dynamics; Wind and Earthquake Engineering; Wind Effects of Structures; Bridge Engineering; Control of Structural Vibration*]

PUNCHET THAMMARAK, PhD, The Univ of Texas, Austin, USA; B.Eng. (Hon), Chulalongkorn Univ, Thailand;

Lecturer *[Computer Methods of Structural Analysis; Finite Element Methods in Engineering (FE Program-ming; Dynamic problem & Wave Propagation Analysis; Absorbing Boundary Conditions; Material Nonlinearities; Soil-Structure Interactions; Structural Engineering (Reinforced-Concrete Design /Steel Design]*

Visiting/Adjunct/Affiliated Faculty

SOMNUK TANGTERMSIRIKUL, D.Eng., and M.Eng, University of Tokyo, Japan; B.Eng. (Hon), Chulalongkorn Univ, Thailand.

Adjunct Professor [*Modeling of concrete behavior, Durability evaluation and service life design of concrete structures, High performance cementitious based materials, Special concrete such as SCC and RCC, Use of wastes and recycled materials in cement and concrete, Health monitoring, Repair and maintenance of concrete structures*]

AMORN PIMANMAS, Ph.D., and M.Eng, University of Tokyo, Japan; B.Eng. (Hon), Chulalongkorn Univ, Thailand.

Adjunct Associate Professor [*Evaluation of seismic performance of reinforced concrete buildings; Nonlinear finite element analysis of reinforced concrete; Inspection, repairing and strengthening of reinforced concrete*]

THANAKORN PHEERAPHAN, Ph.D., and M.Sc., Massachusetts Institute of Technology USA. B.Sc., Virginia Military Institute, USA.

Adjunct Associate Professor *[Advanced Concrete Technology; Forensic Engineer-ing Structural Evaluation and Retrofitting of Structures; Dynamic soil-structure interaction; Seismic behavior of underground structure; Seismic behavior of earth structure; Multi-Agent simulation; Development of Virtual Clearinghouse for earthquake disaster reconnaissance]*

RAKTIPONG SAHAMITMONGKOL, D.Eng., M.Eng, University of Tokyo, Japan; B.Eng., Sirindhorn International Institute of Technology, Thailand.

Adjunct Faculty [*Cracking Resistance of Expansive Concrete; Chemically Prestressed Concrete; Inspection on Concrete Structures & Performance Based Design; Non-Destructive Testing for Concrete Structures; Tension Stiffening Effect and Bonding Characteristic of Reinforced Concrete*]

SONGSAK SUTHASUPRADIT, Ph.D., Konkuk University, Korea; M.Eng., AIT, Thailand; B.Eng., Srinakharinwirot University, Thailand.

Adjunct Faculty [*Development of a Nonlinear Enhanced Assumed Strain Shell Element for Bridge Analysis; An Assumed Strain 4-Node Reinforced Concrete Shell Element Considering Geometric and Material Nonlinearity; Railway Bridge Inspection an Evaluation*]

KITTIPOOM RODSIN, Ph.D., The University of Melbourne, Australia M.Eng., AIT, Thailand; B.Eng., Chulalongkorn Univ, Thailand.

Adjunct Faculty *[Experimental Investigation of Socket-Type Connection for Pre-Cast Column-Footing Connection; Suppression of Pedestrian Bridge Vibration in Bangkok]*

NAVEED ANWAR, D.Eng., M.Eng., AIT, Thailand; B.Sc.Eng., Univ. of Engineering & Tech., Lahore, Pakistan.

Affiliated Faculty *[Advanced Concrete Structures; Tall Buildings; Structural Analysis and Design; Computational Mechanics; Computer Application; Bridge Engineering; Software Development]*

4. Grants and Sponsored Research Completed in 2016

Seismic Design and Retrofit of Buildings
Duration: 1-Oct-15 to 30-April-16
Project Investigator(s): Pennung Warnitchai
Sponsor: The Thailand Research Fund
Total Contracted Amount (THB): 757,000

5. On-going Grants and Sponsored Research

-

6. Publications

Papers in Refereed Journal

Vronique M Morin, Pennung Warnitchai, Sutat Weesakul (2016). Storm surge hazard in Manila Bay: Typhoon Nesat (Pedring) and the SW monsoon. Natural Hazards. Vol: 81, 1569 – 1588.

Tahir Mehmood, Pennung Warnitchai, Munir Ahmad, M Irshad Qureshi (2016). Alternative approach to compute shear amplification in high-rise reinforced concrete core wall buildings using uncoupled modal response history analysis procedure. The Structural Design of Tall and Special Buildings. Wiley Online Library.Vol 26, 1-18.

Ekkachai Yooprasertchai, Pennung Warnitchai (2016). An application of precast hybrid moment-resisting frames for seismic improve-ment. Magazine of Concrete Research. Vol: 68, 1051 – 1069. Publisher: Thomas Telford Ltd.

Saeed Zaman, Pennung Warnitchai (2016). Topographically-Derived Near-Surface Shear Wave Velocity Map for Pakistan. Journal of Earthquake and Tsunami. Article in Press Publisher: World Scientific Publishing Company.

Teraphan Ornthammarath, Pennung Warnitchai (2016). 5 May 2014 MW 6.1 Mae Lao (Northern Thailand) Earthquake: Interpretations of Recorded Ground Motion and Structural Damage. Earthquake Spectra. Vol: 32, 1209 – 1238. Publisher: Earthquake Engineering Research Institute.

Irshad M. Qureshi, Pennung Warnitchai (2016). Computer modeling of dynamic behavior of rocking wall structures including the impact-related effects. Advances in Structural Engineering. Vol: 19, 1245 – 1261. Publisher: SAGE Publications.

Tahir Mehmood, Pennung Warnitchai, Phichaya Suwansaya (2016). Seismic Evaluation of Tall Buildings Using a Simplified but Accurate Analysis Procedure. Journal of Earthquake Engineering. 26 January 2016. Article in Press Publisher: Taylor & Francis.

Vronique M Morin, Mokbul Morshed Ahmad, Pennung Warnitchai (2016). Vulnerability to typhoon hazards in the coastal informal settlements of Metro Manila, the Philippines. Disasters. Wiley Online Library (Article in Press).

Papers in Conference Proceedings

Thammarak, Punchet (2016). The development, and experiment of cam-grip type, compression-free energy dissipative brace. 22-24 September 2016, Cebu, Philippines.

Pennung Warnitchai, Tahir Mehmood, Phichaya Suwansaya (2016). Seismic performance evaluation of tall buildings by a modal decomposition approach. The 14th East Asia-Pacific Conference on Structural Engineering and Construction (EASEC-14). 6-8 January 2016, Ho Chi Minh City, Vietnam. Keynote lecture & paper.

Pennung Warnitchai, Tahir Mehmood, Phichaya Suwansaya, Fawad A. Najam (2016). Seismic performance evaluation of tall buildings using modal decom-position approach. The 6th Asia Conference on Earthquake Engineering (6ACEE). 22-24 September 2016, Cebu City, Philippines. Keynote lecture & paper.

7. Doctoral Students' Dissertation

Cyclic Performance of Precast Hybrid Frame-Rocking Wall Structures
By: Mr. Ekkachai Yooprasertchai
Supervisor: Prof. Pennung Warnitchai

Dynamic Behavior of Precast Post-Tensioned Rocking Wall Structures
By: Mr. Muhammad Irshad Qureshi
Supervisor: Prof. Pennung Warnitchai

Determination of Permissible Content of Free Lime in Cement-Fly Ash Mixtures and Development of Relationship between Properties of Coal and Resulting Fly Ash
By: Mr. Adnan Nawaz
Supervisor: Prof. Pennung Warnitchai

Mechanical Properties and Structural Performance of Preplaced Aggregate Concrete Members

By: Mr. Michael Lim Coo
Supervisor: Prof. Pennung Warnitchai

8. Masters Students' Theses

Performance Evaluation of Corrosion Protection Coatings in Reinforced Concrete Exposed to Chloride
By: Mr. Rattakit Kittimunkong
Supervisor: Dr. Punchet Thammarak

Earthquake Resistant Design of High-Rise Buildings Using a Modified Response Spectrum Analysis Procedure.
By: Mr. Nguyen Ha Linh
Supervisor: Prof. Pennung Warnitchai

Effect of Cover Depth, W/C Ratio, and Moisture Condition on Half-Cell Potential Studied through Design of Experiment
By: Mr. Chamishara Hasarinda Rathnayke
Supervisor: Prof. Pennung Warnitchai

Experiment on Cam-Grip Device for Compression-Free Energy Dissipating Brace
By: Miss Lily Han Htun
Supervisor: Dr. Punchet Thammarak

Factorial Design Model for Proportioning Preplaced Aggregate Concrete
By: Miss Anjeela Bhattarai
Supervisor: Dr. Thanakorn Pheeraphan

Factorial Design Model for Proportioning Preplaced Aggregate Concrete
By: Miss Anjeela Bhattarai
Supervisor: Dr. Punchet Thammarak

Seismic Performance Improvement of Low-Rise RC Frame Buildings with Soft First Story by Using Buckling Restrained Braces
By: Mr. Hasan Tariq
Supervisor: Prof. Pennung Warnitchai

Prediction of Time to Crack the Reinforced Concrete Structures from Corrosion Initiation to Crack Initiation
By: Mr. Anuruddha Jayasuriya
Supervisor: Prof. Pennung Warnitchai (Chairperson), Dr. Thanakorn Pheeraphan (Co-chairperson)

The Experiment on Cam-Grip Energy Dissipating Device in Hybrid Precast Concrete Frame System
By: Mr. Mai Tu Thien
Supervisor: Dr. Punchet Thammarak

Seismic Strengthening of Unreinforced Masonry Wall Using Ferrocement
By: Mr. Govinda Khanal
Supervisor: Prof. Pennung Warnitchai

Seismic Strengthening of Unreinforced Masonry Wall Using Ferrocement
By: Mr. Govinda Khanal
Supervisor: Dr. Naveed Anwar
Use of Cloud Computing and Mobile Platforms for Development of Structural Engineering Applications
By: Mr. Mohamed Shehezard Rifthie
Supervisor: Dr. Punchet Thammarak (Chairperson), Dr. Naveed Anwar (Co-chairperson)

Cam-Grip Energy Dissipating Device for Hybrid Structural Rocking Wall
By: Miss May Thazin Khine
Supervisor: Dr. Punchet Thammarak

Suppressing Wind-induced Response of Tall Buildings by Multiple Tuned Liquid Dampers
By: Mr. Apiwat Thaiboonmee
Supervisor: Prof. Pennung Warnitchai

Estimating Losses and Downtime in High-Rise Buildings in Bangkok due to Long-Distance Earthquakes Using a Component-Based Methodology
By: Miss Kanokwan Artudorn
Supervisor: Prof. Pennung Warnitchai

3.1.4: SET – TRANSPORTATION ENGINEERING

1. Introduction

The Transportation Engineering (TRE) field of study trains students to solve challenging problems arising from the effects of industrialization and population growth on the movement of people and goods. In cities around the world, movement is hampered by traffic congestion, insufficiency of public transport facilities, traffic accidents, and other conditions. As manufacturing expands globally, businesses are seeking to reduce transportation costs by moving more goods through fewer distribution nodes. Concerns over congestion on highways, increasing pollution and hazardous materials all emphasize the need to maximize the efficiency of our transportation systems. TRE students learn to address these problems by applying advanced knowledge in transportation planning and economics, traffic engineering and the design of highways/pavements and other transportation facilities. Students in TRE acquire advanced skills in planning, design, operations, maintenance, rehabilitation, performance, and evaluation of transportation systems, including their economic and public policy aspects. The curriculum emphasizes development of analytic, problem-solving, design and management skills suitable for public and private sector professional work.

Areas of Specialization

TRE students may choose one of two areas of specialization.

Planning and Engineering trains students in planning and logistics as well as traffic and safety. Among other topics, they are immersed to issues relating to transportation systems, urban/regional transportation analysis and planning methods, airport planning & design, and traffic engineering.

Highways and Pavements focuses on design and operation as well as management systems and maintenance. Students in this specialization will become skilled in geometric design and highway safety, design/performance of highways and airport pavement as well as pavement management systems.

Laboratory Facilities

Laboratories in the TRE field of study provide students with up-to-date software, hardware, equipment and high speed Internet connections to ensure seamless research study. Students interested in working on pavement design have the access to the Thailand Department of Highways. TRE students may also use equipment and resources in the ACTS and TARC research centres.

Research Center/Sponsored Research/ Training

- Asian Center for Transportation Studies (ACTS)
- Thailand Accident Research Center (TARC)
- Logistics Management at the Intermodel Terminals

2. Faculty and Research Staff

Emeritus Professor

JOHN HUGH JONES, B.S., B.Eng., University of California, USA (*Highway Engineering, Transportation Engineering*)

Full-time Faculty

KUNNAWEE KANITPONG, Ph.D., University of Wisconsin- Madison; M.Sc., University of Maryland at College Park, USA; B.S., Chulalongkorn University, Thailand.

Associate Professor *(Road Traffic Safety, Accident Data Analysis, Highway Materials and Construction, Pavement Design and Analysis, and Pavement Management System)*

SURACHET PRAVINVONGVUTH, Ph.D., Utah State University, USA; M.S., AIT, Thailand; B. Eng., Chulalongkorn University, Thailand

Assistant Professor (*Sustainable transport, travel demand, transportation*

planning, traffic engineering, transport energy planning, intelligent transportation system)

***Visiting /* Adjunct Faculty**

HIRONORI KATO, D.Eng, M.Eng, B.Eng., University of Tokyo, Japan

Visiting Professor *(Transportation planning and policy; travel behavioral analysis; transportation project evaluation)*

KAZUSHI SANO, D.Eng., M.Eng., B.Eng., University of Tokyo, Japan

Visiting Professor *(Transportation Planning, Traffic Engineering, and Logistics)*

TAKASHI NAKATSUJI, D. Eng., M. Eng., B. Eng., Hokkaido University, Japan.

Visiting Professor (*Traffic Engineering, Traffic Flow Simulation, Winter Maintenance, Traffic Accident Reconstruction*)

PIYAPONG JIWATTANAKULPAISARN, Ph.D., Imperial College London, United Kingdom; M.Eng., Asian Institute of Technology, Thailand; B. Eng., Chulalongkorn University, Thailand.

Adjunct Faculty (Wider Economic Impacts of Transport Infrastructure, Highway Development and Land Use, Financing Transport Infrastructure, Econometric Modeling for Policy Analysis, Statistical and Quantitative Methods for Transportation Analysis, Fuel Demand Modeling, Accident Risk Behaviors of Road Users, Traffic Safety Engineering and Evaluation of Road Safety Interventions)

Research Staff

Research Assistant

Miss Kanwalai Nachaisit, M.A. (Major: History of Southeast Asia); B.A. (Major English), Silpakorn University, Thailand

Srivarang jendupakarn, Bachelor of Nursing Science, Burapha University, Chonburi, Thailand

Pathumporn Dabsomsri, B.Eng. (Transportation Engineering), Suranaree University of Technology, Nakhon Rachasima, Thailand

Kanika Issarakul, B.Eng. (Transportation Engineering), Suranaree University of Technology, Nakhon Rachasima, Thailand

Nira Adhikari, Bachelor of Science, Nepal Institute of Health Sciences, Purbanchal University, Nepal

Research Associate

Auearree Jensupakarn, M.Eng. (Transportation Engineering), Asian Institute of Technology; B.Eng. (Civil Engineering), Suranaree University of Technology, Nakhon-Ratchasima, Thailand

Santosh Baral, M.Eng. (Transportation Engineering), Asian Institute of Technology; B.Eng. (Civil Engineering, Nepal Engineering College, Changunarayan, Bhaktapur, Nepal

Trinh Thi Lan, M.Eng. (Transportation Engineering), B.Sc.E., Asian Institute of Technology

Nattiya Wonglakorn, M. Eng. , B. Eng. (Transportation Engineering), Suranaree University of Technology, Nakhon Rachasima, Thailand

3. Grants and Sponsored Research Completed in 2016

Motorcycle Accident Investigation: Micro Study Analysis Phase I
Duration: 01-Mar-16 to 30-Jun-16
Project Investigators: Dr Kunnawee Kanitpong
Sponsor: Asian Honda Motor Co Ltd
Total Contracted Amount (THB): 1,117,144.00

4. On-going Grants and Sponsored Research

Motorcycle Accident Investigation
Duration: 15-Sep-16 to 31-Dec-17
Project Investigators: Dr Kunnawee Kanitpong
Sponsor: Asian Honda Motor Co Ltd & Yamaha Motor Co Ltd
Total Contracted Amount (THB): 14,295,453.00

Toyota Passenger Car Accident Analysis
Duration: 06-Jan-16 to 31-Jan-17
Project Investigators: Dr Kunnawee Kanitpong
Sponsor: Toyota Motor Asia Pacific Engineering and Manufacturing Co. Ltd
Total Contracted Amount (THB): 1,559,129.00

Capacity and Team building for in depth Road Accident Investigation
Duration: 20-Aug-15 to 19-Aug-17
Project Investigators: Dr Kunnawee Kanitpong
Sponsor: Toyota Motor Asia Pacific Engineering and Manufacturing Co. Ltd
Total Contracted Amount (THB): 9,064,000.00

Feasibility Study of collecting Gasoline Tax from Road users to support the modal shift from road to rail
Duration: 23-Sep-16 to 22-Dec-17
Project Investigators: Dr Surachet Pravinvongvuth
Sponsor: EPPO/Chulalongkorn University
Total Contracted Amount (THB): 4,587,500.00

Traffic and Public Transportation Master Plan in Nakhon Ratchasima City
Duration: 23-Sep-16 to 22-Dec-17
Project Investigators: Dr Surachet Pravinvongvuth
Sponsor: Suranaree University of Technology
Total Contracted Amount (THB): 477,208.00

5. Publications

Papers in Conference Proceedings

Meel, I.P., Brannolte, U., Satirasetthavee, D., and **Kanitpong, K.,** "Safety Impact of Application of Auxiliary Lanes at Downstream Locations of Thai U-turns," the International Association of

Traffic and Safety Sciences (IATSS) Research, 2016, http://dx.doi.org/10.10 1 6/j.iatssr.2016.06.002.

Sarm, S.A. and **Kanitpong, K.,** "Analysis of Factors Affecting the Severity of Motorcycle Casualties in Phnom Penh Using Bayesian Approach," the Asian Transport Studies, Vol.4, No.2, pp.430-443, 2016.

Supanat Juisoei, Surachet Pravinvongvuth (2016). Quantitative assessment of benefits from road projects: a case study of eight regions in Thailand. Sixth International Symposium on Rural Roads. Page 15. 14-15 November 2016, Bangkok, Thailand.

Surachet Pravinvongvuth, Imalka Chiranthi Matarage (2016). A new at-grade transportation network without signalized intersection, roundabout, or stop sign for land use and transportation planning. World Conference on Transport Research (WCTR). 10-15 July 2016, Shanghai, China. Publisher: Elsevier

6. Masters Students' Theses and Research Studies

Benefit Assessment of Highway Projects: A Case Study of Thailand 10 Years Master Plan
By: Mr. Supanut Juisoei
Supervisor: Dr. Surachet Pravinvongvuth

Assessment on Vehicle Operating Costs for Thailand Road Networks as a Case Study
By: Mr. Tarkish Zaman
Supervisor: Dr. Surachet Pravinvongvuth

Development of a Microscopic Traffic Simulation Model for Freeways in Bangkok
By: Miss Ayeshi Rashmika Vimukthi Wijewardena
Supervisor: Dr. Surachet Pravinvongvuth

Impacts of Motorcycles to Traffic Flow Behaviors of Signalized Intersections and Road Segments in Bangkok, Thailand
By: Miss Myat Pan Ei Naing
Supervisor: Dr. Surachet Pravinvongvuth

A Sustainable Transportation Index and Its Application to AEC Countries
By: Miss Hye Jin Lee
Supervisor: Dr. Surachet Pravinvongvuth

Determination of Crash Modification Factors (CMF) for Engineering Countermeasures in Thailand
By: Miss Tanawan Sutantaviboon
Supervisor: Dr. Kunnawee Kanitpong

Effectiveness of Retro-reflective Sign at the Rear of Heavy Vehicles to Reduce Rear End Collisions
By: Miss Trinh Thi Lan
Supervisor: Dr. Kunnawee Kanitpong

The Influence of Peer Pressure on Speeding and Driving Behavior among Young Drivers: An Application of the Theory of Planned Behavior
By: Miss Wai Mon Myat Naing
Supervisor: Dr. Kunnawee Kanitpong

Single Vehicle Runoff Road Crashes Analysis in Yangon Mandalay Expressway by Using RSAPv3
By: Miss Su Myat Sandi Thaw
Supervisor: Dr. Kunnawee Kanitpong

A Study of Factors Affecting Pedestrian Accident Severity and Walking Environment in Bago Division
By: Miss Thet Sandi
Supervisor: Dr. Kunnawee Kanitpong

Examination of Factors Determining Fault in Motorcycle Crashes in Mandalay and Bago
By: Mr. Nyan Lin Htet
Supervisor: Dr. Kunnawee Kanitpong

Influence of Internal Structure on the Behavior of Hot Mix Asphalt
By: Mr. Singhapprathapa Range Bandara Wanninayake Mudiyanselage Sanjaya Range Bandara Wanninayake
Supervisor: Dr. Kunnawee Kanitpong

Rail Rapid Transit Operational Assessment: A Case Study of the Airport Rail Link, Bangkok, Thailand
By: Miss Pangolle Gedara Rajitha Gunathilake
Supervisor: Dr. Surachet Pravinvongvuth

Development of a Travel Demand Model for Thailand
By: Mr. Theerapat Pukird
Supervisor: Dr. Surachet Pravinvongvuth

3.1.5: SET – WATER ENGINEERING AND MANAGEMENT

1. Introduction

Today's major challenges for water engineers and managers include securing water for people and for food production, protecting vital ecosystems, and dealing with climate variability and change and uncertainty of water in space and time.

The Water Engineering and Management (WEM) imparts education and training towards an understanding of the complexity of water cycle, utilization, and management. It offers a balanced curriculum covering both engineering and management aspects of water resources. Students acquire knowledge and hands-on practice in tools and techniques to come up with viable and sustainable water management for water, food, energy, and environmental security. Students conduct research on country-specific water related problems, and have opportunities to join research and internship programs with industries and partners.

Academic Programs

Masters and Doctoral Degree Program
WEM offers academic programs leading to Master's Degree, Doctoral Degree, Professional Master's Degree, and Diploma and Certificates covering five focal areas: *Agricultural Water, Coastal Water, Urban Water, Water Resources, and Extreme Events and Risk Management*. For further details, please visit www.set.ait.asia/wem/

Double Degree Master's Program
The following Double Degree Masters programs are offered with renowned institutions under which students are awarded two Masters degrees: one from AIT and one from AIT's partner institution.

- Urban Water Engineering and Management (UWEM) in collaboration with UNESCO-IHE, The Netherlands and Environmental Engineering and Management field of study at AIT
- Agricultural Water Management for Enhanced Land and Water Productivity (DD-AWELWP) in collaboration with UNESCO-IHE, The Netherlands
- Hydro informatics and Water Management (HWM) in collaboration with The University of Nice, Sophia Antipolise, France

Distance-based Program

WEM also offers e-learning programs on:

- Integrated Water Resources Management (IWRM) in collaboration with UNUINWEH, Canada
- Service Oriented Management of Irrigation Systems (SOMIS) in collaboration with UNESCO-IHE, The Netherlands

The WEM field of study covers five focal areas: Agricultural Water, Coastal Water, Urban Water, Water Resources, and Extreme Events and Risk Management. The curriculum is designed in such a way that students can specialize according to their interests. Courses on Watershed Hydrology, Hydrodynamics, Water Resources Systems, and Concepts in Water Modeling provide the solid foundation to the advanced courses. The curriculum emphasizes tools and techniques in water resources planning and management.

Agricultural Water

Courses impart knowledge and skills necessary for the development and management of water resources for agriculture. They address various multi-disciplinary issues in the planning, design, implementation, operation and

maintenance of irrigation and drainage projects and land and water conservation programs. Current research in the area include irrigation and drainage system management, cropping systems, erosion and water quality problems, soil conservation and land-use, and watershed management. The management and design of sound engineering works for the control and effective use of coastal zones require in-depth knowledge of hydrodynamics and the understanding of coastal zone phenomena. Coursework and research in Coastal Water cover studies of wave characteristics and their action on beaches, coastal sedimentation, estuarine hydraulics and the applied aspects of coastal zone engineering and management.

Urban Water

Courses relate to water supply and sanitation, storm water, and domestic wastewater and urban drainage for sustainable management of urban areas. The research in relation to urban water focuses on application of state-of-the-art theory in water demand forecasting and management, design and management of water distribution systems in urban and rural areas, real-time hydrological information systems for urban flooding and drainage. Given the ever-growing importance of water quality, an integrated water quantity-quality approach is essential. Courses in Water Resources focus on techniques to assess the occurrence and availability of surface and groundwater. Students acquire a sound understanding of basic principles in river engineering and modeling, water resources planning, conjunctive use of surface and groundwater; integrated water resources management and social and environmental impact assessment of water resources projects.

Climate change impact and adaptation in water sector is an active area of research and education at WEM. In-depth knowledge and hands-on practice on mathematical modeling of water resources systems is provided. Flooding is a natural phenomenon and various human activities as well as climatic changes have aggravated the problem causing economic losses. Students are exposed to an understanding of the behavior of rivers, and to design appropriate structural and non-structural alternatives for the effective management of rivers and waterways. Research in the area of Extreme Events and Risk Management includes drought analysis and management, river flow analysis, and flood control and mitigation, flood modeling and forecasting, flood plain development and management. Research in the area of climate change and water resources include downscaling of climatic variables at local scale and impact and adaptation studies of future climate on water resources and on water use sectors.

In addition, WEM offers the following Double Degree Masters programs with renewed institutions under which students are awarded two Master degrees: one from AIT and one from AIT's partner institution.

- Urban Water Engineering and Management (UWEM) in collaboration with UNESCO-IHE, The Netherlands and Environmental Engineering and Management field of study at AIT
- Agricultural Water Management for Enhanced Land and Water Productivity (DD-AWELWP) in collaboration with UNESCO-IHE, The Netherlands
- Hydro informatics and Water Management (HWM) in collaboration with The University of Nice, Sophia Antipolise, France

WEM also offers e-learning programs on:

- Integrated Water Resources Management (IWRM) in collaboration with UNU-INWEH, Canada
- Service Oriented Manage-ment of Irrigation Systems (SOMIS) in collaboration with UNESCO-IHE, The Net-herlands

WEM also encourages students to undertake internship program and receive students from partner institutions under exchange and dual degree program.

2. Faculty and Research Staff

Emeritus Professor
ASHIM DAS GUPTA, BEng, Guwahati Univ, India; MEng, DEng, AIT, Thailand.

Visiting Professor *(Integrated water resources management; Groundwater development and management; Modeling and monitoring)*

Full-time Faculty

MUKAND SINGH BABEL, BEng, Rajasthan Agr Univ, India; MEng, DEng, AIT, Thailand.

Professor *[Hydrologic and water resources modeling as applied to integrated water resources management; Watershed modeling and management; Water resources allocation and management; Water resources and socio- economic development; Water supply system and management; Climate change impact and adaptation; Groundwater resources management; and Flood and drought analysis, forecasting and management]*

SANGAM SHRESTHA, MSc., Institute of Agriculture and Animal Science, Tribhuvan University, Nepal; MSc., Asian Institute of Technology, Thailand; PhD., University of Yamanashi, Japan.

Associate Professor [*Climate change and adaptation, Integrated water resources management, Hydrology and water quality modeling, Groundwater development and management, Sustainable water management policy*]

DUC H. NGUYEN, Msc., Coastal Engineering and Port Development, UNESCO-IHE, the Netherlands; PhD: Civil and Environmental Engineering, Tokyo Metropolitan University, Japan.

Assistant Professor *[River and Coastal Engineering, Hydrodynamic Modelling, Water Quality and Sediment Transport, Flood and Drought Risk Management, Reservoir Operation, GIS Applications]*

SANYOGITA ANDRIYAS, Bachelor of Engineering in Agricultural Engineering, India; M.S. in Water Resources Engineering, University of Guelph, Canada; PhD in Civil and Environmental Engineering, Utah State University, USA

Lecturer *[Agricultural water manage - ment, non-point source pollution problems, Machine learning/Expert systems/Data mining/Evolutionary algorithms techniques for problems related to water]*

Visiting Faculty

ASHIM DAS GUPTA, BEng, Gauhati Univ, India; MEng, DEng, AIT, Thailand.

Visiting Professor *[Integrated Water Resources Management; Groundwater Development and management; Modeling and monitoring]*

AKIYUKI KAWASAKI, BEng, MEng, Deng., Yokohama National University, Japan

Visiting Associate Professor *[Geographic Information System / City and regional planning / Transboundary river / Benefit sharing / Land-use modeling / Disaster management (Landslide and flood)]*

TAWATCHAI TINGSANCHALI, BEng, Chulalongkorn Univ, Thailand; MEng, DEng, AIT, Thailand.

Visiting Professor *[Flood Control Engineering and Management; Flood Forecasting, Warning and Flood Disaster Management; River Engineering and Hydropower; Water Resources Project System Optimization]*

SYLVAIN PERRET, MS and PhD, University of Montpellier II, France; DSc, Ecole Polytechnique de Lorraine, Nancy, France.

Visiting Associate Professor *[Water economics and governance, with special interest onto valuation approaches of rural and environmental water uses, irrigation systems' performances and evaluation, environmental assessment of production systems, governance in irrigation systems, integrated water resource management and governance at the river basin level, social participation in the water sector]*

DAMIEN JOURDAIN, BEng, MSc, Ecole Nationale Superieure Agronomique Montpellier, France; PhD, University of Montpellier I, France

Visiting Assistant Professor *[Agricultural & Natural Resources Economics / Farm Modeling / Water and Watershed Management / Payment for Environmental Services]*

Affiliated Faculty

SUTAT WEESAKUL, D.Eng, M.Eng, Asian Institute of Technology; BEng, Chulalongkorn University, Thailand *[Numerical computation in sea and coastal area including flood propagation using developed computer programs; Application in solving urban drainage problem using both engineering and management approaches; urban flood warning system, Improvement of hydraulic design using physical hydraulic model test in hydropower, improvement in design of intake, diversion tunnel, riparian outlet, energy dissipater, spillway and head pond]*

3. Grants and Sponsored Research Completed in 2016

The training on Design of Storm Water Management systems
Duration: 01-Nov-2015 to 31- Aug-2016
Project Investigators: Prof Mukand S Babel
Sponsor: Ministry of Works and Human settlements, Bhutan
Total Contracted Amount
(THB): 318,564.00

4. On-going Grants and Sponsored Research

Capacity Development of Higher Education on IWRM at CUET
Duration: 1-Sep-13 to 31-Dec-17
Project Investigator (s): Mukand S. Babel
Sponsor: UNESCO-IHE, the Netherlands
Total Contracted Amount
(THB): 3,816,280.00

Hydraulic model studies of Upper Yeywa hydroelectric power project, Republic of the Union of Myanmar
Duration: 01-July-14 to 1-Dec 17
Project Investigator: Arturo G. Roa
Sponsor: Builder's Trading International Co. Ltd, Thailand
Total Contracted Amount
(THB):7,051,300.00

Prepare extreme and rare events in coastal regions
Duration: 01-Jan-2014 to 31- Dec-2017
Project Investigators: Dr Sutat Weesakul
Sponsor: UNESCO-IHE, The Netherlands
Total Contracted Amount
(THB): 1,212,588.00

Regional forum on climate change (RFCC) for carbon and climate resilient societies bridging science practice and policy
Duration: 01-Apr-15 to 31-Mar-16
Project Investigators: Prof Mukand S babel
Sponsor: participants
Total Contracted Amount
(THB): 5,656,718.00

Physical hydraulic model studies of Nam Theun 1 Hydropower project
Duration: 01-Sep-15 to 31-Jan- 18
Project Investigators: Dr Arturo G Roa
Sponsor: Phonesack Group Co ltd
Total Contracted Amount
(THB): 6,367,300.00

CTCN PCA for cross cutting activities
Duration: 01-Nov-2015 to 31- Dec-2017
Project Investigators: Prof Mukand S Babel
Sponsor: UNEP
Total Contracted Amount
(THB): 1,400,000.00

The training on Water distribution modelling Practice (EPANET)
Duration: 01-Oct-2016 to 31- Sep-2017
Project Investigators Prof Mukand S Babel
Sponsor: International Committee of the Red cross
Total Contracted Amount (THB): 612,000.00

Evaluation of climate change impacts and suitable adaptation strategies for crop production and its environmental and economic implications in vulnerable regions of Thailand
Duration: 01-Sep-2016 to 31- Aug-2017
Project Investigators: Prof Mukand S Babel, Dr Sangam Shrestha, Dr Damien Jourdain, Dr Sanyogita Andriyas
Sponsor: MOFAID France
Total Contracted Amount (THB): 1,350,000.00

Conference on Water security and climate change: Challenges and opportunities in Asia
Duration: 01-Jun-2016 to 30- Jun-2017
Project Investigators: Prof Mukand S Babel
Sponsor: TU Braunschweig, Germany
Total Contracted Amount (THB): 524,400.00

Physical Hydraulic Model Study of Khlong Loei Chi Mun Water diversion project by gravity
Duration: 01-May-2016 to 30- Apr-2017
Project Investigators: Mr. Arturo G Roa
Sponsor: Panya Consultants Co Ltd
Total Contracted Amount (THB): 2,513,300.00

5. Publications

Books and Monographs

Sangam Shrestha, Manish Shrestha (2016). World Small Hydropower Development Report 2016. Publisher: UNIDO & ICHSP. http://www.smallhydroworld.org/fileadmin/user_upload/pdf/WSHPDR-2016-ES-FPP-2.pdf

Sangam Shrestha, Vishnu P Pandey, Binaya R Shivakoti, Shashidhar Thatikonda (2016). Groundwater Environment in Asian Cities: Concepts, Methods and Case Studies. Publisher: Elsevier. DOI: 10.1016/C2014-0-02217-4, Publisher: Elsevier Inc.

Book Chapters

Andriyas S. and McKee M. (2017). Classification and regression trees for analyzing irrigation decisions. To appear in Statistics in Practice Wiley series – Proposal. Publishing: Wiley house.

S. Maskey, D. Bhatt, S. Uhlenbrook, K. Prasad, S. M. Babel (2016). Adaptation to Climate Change Impacts on Agriculture and Agricultural Water Management. In Hoanh, C. T., Johnston, R. and V. Smakhtin. Climate Change and Agricultural Water Management in Developing Countries. Publishing: CABI in association with IWMI.

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Papers in Refereed Journal

M. Babur, S. M. Babel, S. Shrestha, A. Kawasaki, K. N. Tripathi (2016) Impact of Projected Climate Change on Discharge and Hydro-power potential. Journal of Water, Vol 8(9), 389.

A. Alves, A. Sanchez, Z. Vojinovic, S. Seyoum, S. M. Babel, D. Brdjanovic (2016). Evolutionary and holistic assessment of green-grey infrastructure for CSO reduction. Journal of Water, Vol: *8*, 402.

S. Shrestha, R. A. Bajracharya, S. M. Babel (2016). Assessment of risks due to climate change for the Upper Tamakoshi Hydropower Project in Nepal. Climate Risk Management, Vol: 14: 27–41.

S. M. Babel, G. J. Sirisena, N. Singhrattna (2016). Incorporating Large-scale Atmospheric Variables in Long-term Seasonal Rainfall Forecasting Using Artificial Neural Networks: An Application to the Ping Basin in Thailand. Journal of Water Hydrology Research, Vol: 57:1, 26-41.

S. Shrestha, M. Shrestha, S. M. Babel (2016). Modelling the Potential Impacts of Climate Change on Hydrology and Water Resources in the Indrawati River Basin, *Nepal.* Environmental Earth Sciences, Vol: 75, 13 January 2016.

N. A. Cahyo, S. M. Babel, A. Datta, C. K. Prasad, S. R. Clemente (2016). Evaluation of Land and Water Management Options to Enhance

Productivity of Rubber Plantation using WaNuLCAS Model. AGRIVITA: Journal of Agricultural Science, Vol: 38, 93-102. Doi: 10.17503/agrivita.v38i1.583.

R. Mahmood, S. Jia, S. M. Babel (2016). Potential Impacts of Climate Change on Water Resources in the Kunhar River Basin, Pakistan. Journal of Water, Vol: 8, 23. Doi:10.3390/w8010023

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Sangam Shrestha, Dickson J. Semkuyu, Vishnu P. Pandey (2016). Assessment of groundwater vulnerability and risk to pollution in Kathmandu Valley, Nepal. Science of the Total Environment. Vol: 556, 23 – 35. Doi: 10.1016/j.scitotenv. 2016. 03.021, Publisher: Elsevier

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Sangam S., Manish S., Mukand S. B. (2016). Modelling the potential impacts of climate change on hydrology and water resources in the Indrawati River Basin, Nepal. Environmental Earth Sciences. Vol: 75. Doi: 10.1007/s12665-015-5150-8, Publisher: Springer Verlag.

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Rattykone Sayasane, Akiyuki Kawasaki, Sangam Shrestha, Masatsugu Takamatsu (2016). Assessment of potential impacts of climate and land use changes on stream flow: A case study of the Nam Xong watershed in Lao PDR. Journal of Water and Climate Change. Vol: 7, 184-197. Doi: 10.2166/wcc.2015.050, Publisher: IWA Publishing.

Ansul Agarwal, Mukand S Babel, Shreedhar Maskey, Sangam Shrestha, Akiyuki Kawasaki, Nitin K Tripathi (2016). Analysis of temperature projections in the Koshi River Basin, Nepal. International Journal of Climatology. Vol: 36, 266 – 279. Doi: 10.1002/joc.4342, Publisher: John Wiley and Sons Ltd.

Sangam Shrestha, Proloy Deb, Thi Thu Trang Bui (2016). Adaptation strategies for rice cultivation under climate change in Central Vietnam. Mitigation and Adaptation Strategies for Global Change. Vol: 21, 15-37. Doi: 10.1007/s11027-014-9567-2, Publisher: Springer.

Papers in Conference Proceedings

Sangam Shrestha, Manish Shrestha, Pallav K. Shrestha, Anil Aryal (2016). Exploring the future land use change and its impact on hydrology of Songkram River Basin of Thailand. 1st Symposium on Tonle Sap Water Environment. 26-27 August 2016, Phnom Penh, Cambodia. https://sites.google.com/site/satrepscambodia/home/announcement/1stsymposiumontonlesapwaterenvironmentstswe1.

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Ranju Chapagain, Sangam Shrestha, Mukand S Babel (2016). Climate Change impact on yield and water footprint of rice production: An overview from water secure. International Conference on Water Security and Climate Change: Challenges and Opportunities in Asia. 29 Novem-ber-1 December 2016, AIT, Thailand. http://sea.exceed-swindon.org/water-security-conference/

Ranju Chapagain, Sangam Shrestha, Mukand Babel (2016). Climate Change Impact assessment on rice yield and water footprint in Nam On Irrigation Project, Th. 2nd World Irrigation forum on Water Management in a Changing World: Role of Irrigation for Sustainability. 6-12 November 2016, Chiang Mai, Thailand. http://www.worldirrigationforum.net/

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Anil Aryal, Sangam Shrestha (2016). Impact assessment of climate change on river hydrology: A case of Tamakoshi River Basin, Nepal. 1st Symposium on Tonle Sap Water Environment. 26 - 27 August 2016, Phnom Penh, Cambodia. www.itc.edu.kh

Sangam Shrestha, Mohib U Ali (2016). Adaptation Strategies for Rice Cultivation Under Climate Change Scenarios in Gujranwala District. 2nd World Irrigation forum on Water Management in a Changing World: Role of Irrigation for Sustainability. 6-12 November 2016, ChiangMai,Thailand. http://www.worldirrigationforum.net/

Sangam Shrestha (2016). Modelling the potential impacts of climate change on hydrology and water resources. CONNECT2SEA Workshop on ICT Research and Innovation for Sustainable Economic and Social Development. 9-10 May 2016, Hanoi, Vietnam. http://www.mica.edu.vn/RISE2016/

Nawhath Thanvisitthpon, Sangam Shrestha (2016). Precipitation Projection and Cause of Flooding in Bangkok Metropolis, Thailand. The 3rd Asian Conference on the Social Sciences and Sustainability. 3-5 December, 2016, Nagoya, Japan. http://intesda.org/social-sciences-sustainability-conference/registrat-ion/Registration-Fee-Rates

Manish Shrestha, Sangam Shrestha, Mukand S Babel (2016). Questioning melamchi water supply project under changing climate and increasing water demand analysis. International Conference on Water Security and Climate Change: Challenges and Opportunities in Asia. 29 November-1 December 2016. AIT, Thailand

Pallav K Shrestha, Sangam Shrestha, Sarawut Ninsawat (2016). Diurnal disaggregation of precipitation measure-ments with TRMM how good of an alternative is it to. 1st Symposium on Tonle Sap Water Environment. 26 - 27 August 2016, Phnom Penh, Cambodia. https://sites.google.com/site/satrepscambodia/home/announcement/1stsymposiumontonlesapwaterenvironmentstswe1

6. Doctoral Students' Dissertation

Assessment of Climate Change Impacts on Hydrology and Hydropower Generation in Belu River Basin of Myanmar
By: Mr. Minn Thu Aung
Supervisor: Dr. Sangam Shrestha

Impact of Climate and Landuse Changes on Inflows, Sediment Yield and Hydropower Production - A Case of the Mangla Reservoir, Pakistan
By: Mr. Muhammad Babur
Supervisor: Prof. Mukand S. Babel

Assessment of Groundwater Potential Zone and its Sustainable Yield in Deli Aquifer, Timor Leste
By: Mr. Domingos Pinto
Supervisor: Dr. Sangam Shrestha

7. Masters Students' Theses and Research Studies

WEM

Impacts of Climate Change and Land Use Change on Hydrology in Transboundary River Basin: A Case Study in 3S (Sekong, Sesan, Srepok) River Basin
By: Miss Nisha Maharjan
Supervisor: Dr. Sangam Shrestha

Assessment of Wetland Vulnerability to Climate Change: A Case Study of Moeyungyi Wetland in Myanmar
By: Miss Aye Chan Myint
Supervisor: Dr. Sangam Shrestha

Analysis of Nearshore Waves and Morphology under Extreme Climate Change in the Gulf of Thailand
By: Miss Nguyen Thi Hien
Supervisor: Dr. Sutat Weesakul (Chairperson), Prof. Mukand S. Babel (Prof. Mukand S. Babel)

Climate Change Impact on Water Resources and Crop Yield in the West Seti River Basin, Nepal
By: Miss Aakanchya Budhathoki
Supervisor: Prof. Mukand S. Babel

Potential Impact of Climate Change on Flow Regime and Fish Production in the Songkhram River Basin, Thailand
By: Miss Ardhige Thedini Asali Peiris
Supervisor: Prof. Mukand S. Babel

Analysis of Historical and Future Climatic and Hydrologic Extremes in the Upper Ayerawaddy River Basin in Myanmar
By: Mr. Uttam Ghimire
Supervisor: Prof. Mukand S. Babel

Improvement of Irrigation Water Management for Enhancing Agricultural Productivity: The Case of Lekitatu Irrigation Scheme in Meru DC, Tanzania
By: Mr. Antidius Augustine Muchunguzi
Supervisor: Dr. Sanyogita Andriyas (Chairperson), Dr. Laszio . G. Hayde (Co-chairperson)

Analysis of Drought under Climate Change Conditions in the Sangke River Basin, Cambodia
By: Mr. Tith Nhim
Supervisor: Prof. Mukand S. Babel

Assessment of Climate Change Impact on Groundwater Resources in Hau Giang Province, Vietnam
By: Miss Hoang Thi Ngoc Anh
Supervisor: Dr. Sangam Shrestha
Sustainability Assessment of Informal Irrigation through the Water Energy-

Food-Nexus Approach: The Case of Karimama in the North Benin
By: Mr. Guy Marius Assogba
Supervisor: Dr. Damien Jourdain (Chairperson), Dr. Poolad Karimi (Co-chairperson)

2D-Numerical Modeling Approach for Development of Dynamic Equilibrium Bay Shape
By: Mr. Chatuphorn Somphong
Supervisor: Dr. Sutat Weesakul (Chairperson), Dr. Sangam Shrestha (Co-chairperson)

Climate Extremes, People's Perception and Adaptation in Lower Songkram River Basin, Thailand
By: Miss Pisinee Bariboon
Supervisor: Dr. Sangam Shrestha

Quantifying Uncertainties in Climate Projections on Hydrologic Modeling in the Tamakoshi River Basin, Nepal
By: Mr. Anil Aryal
Supervisor: Dr. Sangam Shrestha

Climate Change Impacts on Water Footprint of Rice Production in Nam Oon Irrigation Project, Thailand
By: Miss Ranju Chapagain
Supervisor: Dr. Sangam Shrestha

Performance Evaluation of Selected State-Managed and Farmer-Managed Irrigation Systems in Punjab, Pakistan
By: Mr. Muhammad Sajid Nazir
Supervisor: Dr. Damien Jourdain

Climate Change Impact on Water Availability in the Hub River Basin in Pakistan
By: Mr. Muhammad Nabeel Aslam
Supervisor: Dr. Sangam Shrestha

Groundwater Recharge in the Context of Climate Change and Land Use/Land Cover Change in Lower Ravi River Basin, Pakistan
By: Mr. Saqib Ashraf
Supervisor: Dr. Sangam Shrestha

Climate Change Impact on Design Flood Discharges: An Application to Rasool Baruage in Jhelum River Basin, Pakistan
By: Mr. Muhammad Faisal Rashid
Supervisor: Prof. Mukand S. Babel

Water Productivity and Technical Efficiency of a Selected Irrigation System in Punjab, Pakistan
By: Mr. Hafiz Muhammad Ali
Supervisor: Dr. Damien Jourdain

Analysis of Rainfall Pattern and Validation of Design Storm Shape for Asian Monsoon
By: Mr. Muhammad Mudassar Rehan
Supervisor: Dr. Sutat Weesakul (Chairperson), Dr. Sangam Shrestha (Co-chairperson)

Water Footprints Analysis for Improved Irrigation Management: A Case Study of Kuthiali Minor Canal System, Gujranwala, Pakistan
By: Mr. Muhammad Adeel Anjum
Supervisor: Prof. Mukand S. Babel

Flood Control and Mitigation at Taunsa Barrage on the Indus River in Pakistan
By: Mr. Amir Taimoor
Supervisor: Prof. Tawatchai Tingsanchali

Investigation of Sediment Exclusion Efficiency of Silt Excluder by Physical Modeling; A Case Study of Right Underslice Taunsa Barrage in Pakistan
By: Mr. Ahmad Mustafa
Supervisor: Dr. Sangam Shrestha (Chairperson), Mr. Arturo Gementiza Roa (Co-chairperson)

Flood Hazard Assessment Using Hydro-Geospatial Technique: A Case Study of River Chenab from Qadirabad to Trimmu in Pakistan
By: Mr. Muhammad Asim Shoaib
Supervisor: Prof. Tawatchai Tingsanchali

Climate Change Impacts on Water Availability at Marala Barrage in Chenab River Basin, Pakistan
By: Mr. Amir Mumtaz Wattoo
Supervisor: Prof. Mukand S. Babel

Farmer's Perceived Agricultural Adaptation to Climate Change Impact in Rangsit Canal Area of Nong Sua District, Thailand
By: Mr. Zeeshan Ashraf Sheikh
Supervisor: Dr. Sutat Weesakul (Chairperson), Dr. Sangam Shrestha (Co-chairperson)

Performance Assessment of Lower Chenab Canal Irrigation Management Transfer in Pakistan
By: Mr. Ali Raza
Supervisor: Dr. Damien Jourdain

Climate Change Impact on Sediment Yield in Rawal Watershed Near Islamabad, Pakistan
By: Mr. Mubashir Majeed
Supervisor: Prof. Mukand S. Babel

Assessing Climate Change Impacts on Satpara Dam in Pakistan
By: Mr. Ahmad Hussan
Supervisor: Dr. Sangam Shrestha

Simulation of Sedimentation and Flushing for a Narrow Reservoir: A Case Study of the Diamer Bhasha Dam in Pakistan
By: Mr. Waqas Javed
Supervisor: Prof. Tawatchai Tingsanchali

Adaptation Strategies for Rice Cultivation Under Climate Change Scenarios in Gujranwala District of Punjab, Pakistan
By: Mr. Mohib Ullah Ali
Supervisor: Dr. Sangam Shrestha

Canal Lining Impact on Water Availability, Distribution and Crop Water Requirements: A Case Study of the Dijkot Distributary System of Lower Chenab Canal, Punjab in Pakistan
By: Mr. Muhammad Yasir Saleem
Supervisor: Prof. Tawatchai Tingsanchali

Downscaling Precipitation Using an Artificial Neural Network in the Ping River Basin, Thailand
By: Miss Juthika Roy
Supervisor: Prof. Mukand S. Babel

UWEM

Impact Assessment of Future Urban Growth in Areas with Cultural Heritage
By: Miss Phyllis Ropafadzo Togarepi
Supervisor: Prof. Mukand S. Babel (Chairperson), Dr. Zoran Vojinovic (Co-chairperson)

3.1.6: SET – OFFSHORE TECHNOLOGY AND MANAGEMENT

1. . Introduction

AIT's **Offshore and Technology & Management Program (OTM)** is the first of its kind to provide regional post-graduate study in upstream oil and gas education, and is designed to combine application-oriented course work, field studies and internships into a curriculum from which graduates are equipped with the skills and knowledge-and-practice-readiness to work in the upstream sector of oil and gas industry. The one-year Professional Master of Engineering (PME) program in OTM is specifically designed to serve current professionals in the oil and gas industry that already have work experience and want to broaden their knowledge of the field while obtaining a master's degree during a short leave of absence from their jobs. The two year MEng program follows a curriculum of one year of coursework, a 10-week internship and one year of thesis work, and is open to all students with relevant bachelor's degrees.

Areas of Specialization

OTM offers three specializations in the upstream E&P sector of the oil and gas industry.

- **Offshore Structural Design and Construction**
- **Oil and Gas Management**

Admission Requirements
Admission for professional master degree requires at least 3 years of work experiences in the industry.

Partners

- Department of Mineral Fuels of Thailand (DMF)
- Petroleum Institute of Thailand (PTIT)

Collaborators

Academic Sector
- City University London (UK)
- Petronas University
- Chulalongkorn University (Thailand)

Industries

- Department of Mineral Resources of Thailand
- PTTEP of Thailand
- Chevron Thailand Exploration and Production Ltd.
- Schlumberger Overseas S.A.
- Total Exploration and Production Thailand
- Thai Oil Company Limited
- Mitsui Oil Exploration Co., Ltd.
- CUEL Limited
- Thai Nippon Steel Engineering and Construction Corp. Ltd.
- Palang Sophon Two Ltd.
- Bechtel International, Inc.
- Pearl Oil (Thailand) Ltd.
- Worley Parsons (Thailand) Ltd.
- Technip Engineering (Thailand) Ltd.
- Foster Wheeler International Corporation
- The Bangchak Petroleum Public Co. Ltd.

Field Study

The curriculum structure is designed to combine course works in the class and practical study at field sites in order to enhance the student understanding and knowledge in bridging the gap between theory and practical works. Student can also benefit from the field trips for their future employment. Minimum one trip for each semester is conducted to fabrication yard in order to directly watch the fabrication and load-out works of jacket and topside deck structures.

Internships

A number of oil and gas companies, partner universities and institutes either in Europe, Australia, Southeast Asia and

Thailand can be selected for internship place during the short-semester time from May to July. Petronas University, City University, London in UK, Thai Nippon Steel in Thailand, Singapore and Indonesia, CUEL in Thailand and others can be student destinations to acquire practical work experience.

Laboratories

Design and Computation Laboratories

The laboratories are facilitated with a number of computers and a number of software's such as Schlumberger's software package, SACS and in-house developed programs under the support of AIT-ACECOMS

OTM Reading Room

The room is equipped with latest offshore related magazines, books, computers, photocopy machine, table, sofa and pantry can be used as a place for discussion, reading and studying

.

2. Faculty and Research Staff

Full-time Faculty

GREGORY L.F. CHIU, M.S. Civil Engineering, Columbia University, New York, USA; PhD. Civil Engineering, Stanford University, California, USA

Professor of Practice (Offshore Technology and Management)

Adjunct & Visiting Faculty

L.F. BOSWELL, Doctor of Philosophy, University of Leeds; Doctor of Science, Technical University of Isai; Doctor of Science, Technical University of Cluj Napoca

PORNPONG ASAVADORNDEJA, Master of Engineering, Asian Institute of Technology, Bangkok, Thailand; Doctor of Engineering, Asian Institute of Technology, Bangkok, Thailand

SARUNPHONG ARTICHARTE; Master of Science, Texas A&M University, USA

THITISAK BOONPRAMOTE, Master of Science, Colorado School of Mines, USA; Ph.D., Colorado School of Mines, USA

WINAI OUYPORNPRASERT, Master of Engineering, Chulalongkorn University, Bangkok, Thailand; Ph.D., University of Insbruck, Austria

Bui V. Dao, Master of Science, University of California, USA; Ph.D., University of California, Berkeley, USA

3. Masters Students' Theses and Internships

Valuation of Oil Company Stock Price Using Time Series Analysis
By: Mr. Warut Intarapanitl
Supervisor: Assoc. Prof. Gregory L. F. Chiu

Analysis and Evaluation of Subsea Installation Delays
By: Mr. Sirirat Pakdee
Supervisor: Assoc. Prof. Gregory L. F. Chiu

A Critical Analysis of Production Facilities for Maintenance Program Management
By: Mr. Thiha Soe
Supervisor: Assoc. Prof. Gregory L. F. Chiu

A Methodology for Consistent Evaluation of Project Risks Using a Multi-Criteria Decision Analysis Approach
By: Mr. Kyaw Zan Oo
Supervisor: Assoc. Prof. Gregory L. F. Chiu

Onshore Decommissioning Planning and Scheduling for Wellhead Platform
By: Miss Pabpilai Savekvihari
Supervisor: Assoc. Prof. Gregory L. F. Chiu

Catenary Mooring System Design for Floating Production Platform in the Gulf of Martaban, Myanmar
By: Mr. Akaradej Purano
Supervisor: Assoc. Prof. Gregory L. F. Chiu

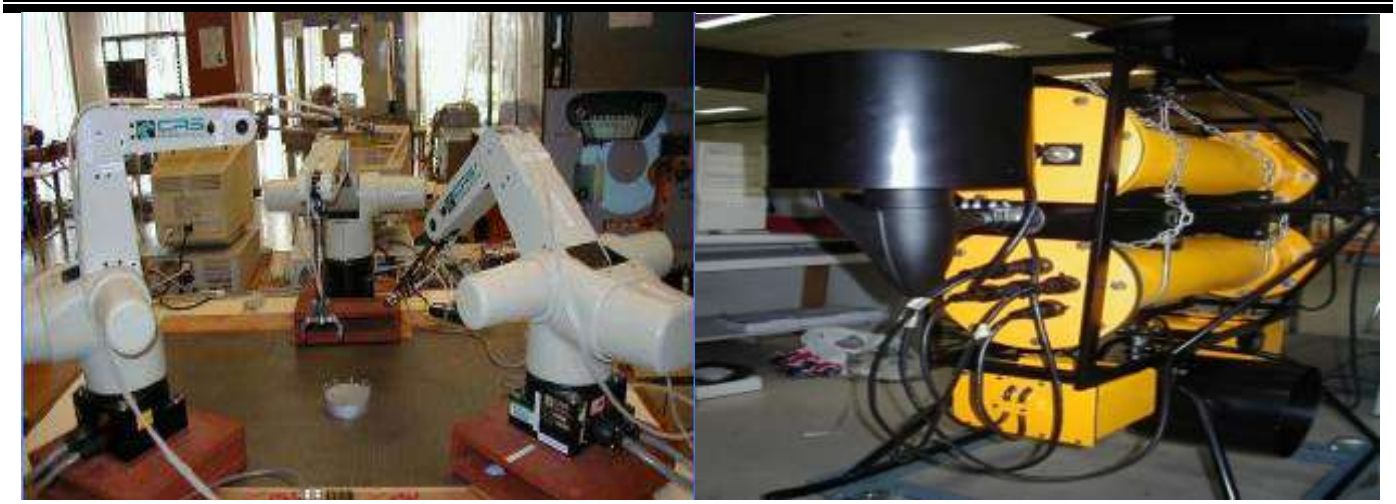
A Procedure for Considering Reused Jacket Platforms
By: Mr. Metee Suwannason
Supervisor: Assoc. Prof. Gregory L. F. Chiu

3.2: SET – INDUSTRIAL SYSTEMS ENGINEERING GROUP

For several decades, AIT has served in the development of the region by equipping young engineering with the high-tech knowledge required to work in complex industrial environments, since its inception, the industrial Systems Engineering (ISE) thematic group at AIT has contributed to this mission by focusing on industrial competitiveness and innovation for sustainable growth in the region. The ISE group is comprised of the following field of studies:

1. Mechatronics (MEC)
2. Microelectronics and Embedded Systems (MES)
3. Industrial and Manufacturing Engineering (IME)
4. Nanotechnology

3.2.1: SET – MECHATRONICS and MICROELECTRONICS & EMBEDDED SYSTEMS



1. Introduction

Mechatronics

At present, most academic institutions and industries in the Asian region are only system integrators. Components are procured from more developed countries (e.g. computer numerically controlled machines, robots, and automated guided vehicles) and are integrated as a system (e.g. flexible manufacturing system). To support the growth of the region's economy, expertise not only as system integrators but also as builders of components of advanced technologies must be developed. The growing number of electronic devices and the strong interactions between mechanical and electronic parts no longer permit separate investigations of these components.

Mechatronics provides new insights through an integrated consideration of mechanics, electronics and information technology. The curriculum is designed to provide multidisciplinary knowledge and to develop the ability to design mechatronics systems.

Microelectronics and Embedded Systems

The region's growing industrial sector and the increasing demand for high technologies have brought the need for expertise in microelectronics to a critical level. The students are prepared to cope with the needs of the electronics industry in the region. The curriculum is equally balanced between the analog and digital design of circuits as well as the processing related topics including failure analysis, suitable for this electronics industrial sector in the region. The curriculum has been designed and constantly adapted in partnership with microelectronics industries and collaborating universities overseas. Miniaturization of IC and the possibilities of completely new technologies like nanotechnology have also been introduced.

2. Research Facilities and Laboratories

Mechatronics and Microelectronics and Embedded Systems fields of study share all the laboratory facilities with the Industrial & Manufacturing Engineering field of study. There are several well equipped laboratories with the primary function of supporting the students and faculty for teaching and research and to conduct outreach programs.

Mechatronics and Automation Laboratory

The Mechatronics and Automation laboratory is well equipped with many PLC systems (S7200/300/400, INDRAMAT, BOSCH), distributed control systems (PCS7), operator panels (OP17/DP and OP35), a PC-based human

machine interface package (WINCC) and networked field buses (PROFIBUS, INTER-BUS and SERCOS). The lab has mobile robots (PIONEER 2), 02 industrial robots (KUKA KR16), image processing systems (DVT). Multiple devices such as signal generators, oscilloscopes, power supplies are available. Many types of special sensors and actuators are also available for research use. Some robotic systems made by research students are available for demonstration.

Advance Robotics Research Laboratory

Advanced Robotics is a research laboratory under Mechatronics Field of Study. It is supervised by Prof. Manukid Parnichkun (manukid@ait.asia). This research group focuses on the design of new and advanced robotics mechanisms and controllers. Robot prototypes are always developed and tested. The current projects include intelligent vehicles, bicycle robots, unicycle robots, exoskeleton robots, rehabilitation machines, automatic guided vehicles, laser guided vehicles, robot manipulators and multiple robot cooperation.

Nonlinear Dynamic Systems and Control (NDSC) Research Laboratory

The Nonlinear Dynamic Systems and Control (NDSC) Laboratory in ISE at AIT provides the research experiences and instruction in dynamics and control of nonlinear systems, specially involved with aerospace engineering and human brain control. The NDSC founded by Dr. Weon Keun Song (bauman98@naver.com) in 2017 will be the core laboratory in AIT.

Motion Control and Haptics Research Laboratory

This laboratory is led by Dr. Harsha Abeykoon who is attached to the Dept. of Industrial Systems Engineering of the AIT. This research group focuses on precise motion control technologies which are essential in robotics. We commonly use Reaction Torque Observer (RTOB) and Disturbance Observer (DOB) to achieve robust motion control. We have successfully developed and applied motion control techniques to tele-operation, rehabilitation, vehicle stability control and mobile robot navigational applications. We hope to expand the horizons of research for the betterment of the society. Dr. Harsha Abeykoon, harsha@ait.asia

IC Design and Microelectronics Laboratory

The Integrated Circuit Design laboratory gives students access to a wide variety of professional software applications including ANSYS, Orcad, ModelSim PE, Xilink ISE, Synopsys, Leonardo Spectrum LS and Tanner (S-Edit for Schematic Capture, T-Spice and W-Edit for Simulation and LEdit for Physical Layout).The laboratory's facilities are used for analog and digital circuit design, microchip design and fabrication, MEMS, microactuators and micro-sensors design, computational electronics, and so on. Fabrication facilities are available through the National Electronics Technology Center and the National Science and Technology Development Administration located in nearby Science Park. Equipment of Microelectronics lab and software are available such as Open CV, MatLab, Dev C++, Digital multimeter, Function generator, Dc power supply, Digital oscilloscope and Soldering machine. The research facilities include FPGA board, Raspberry pi board, GPS module, Smart camera, Laser scanner and RFID reader.

Internet of Things (IOT) Research Laboratory

IOT is a research laboratory under Microelectronics and Embedded Systems Field of Study, Industrial Systems Engineering Department, School of Engineering and Technology. It is under the supervision of Dr. Mongkol Ekpanyapong. This research area spans from Embedded Systems Design, FPGA Design, High Performance Computing, Computer Vision, and Agritronics. IOT research group also has a close collaboration with AIT Vision Laboratory and Internet Education and Research Laboratory (InterLab). Dr. Mongkol Ekpanyapong, mongkol@ait.asia

Nanotechnology Center of Excellence (CoEN)

The Center of Excellence in Nanotechnology addresses the creation of knowledge in areas relevant to industries. Activities include joint research with other local and international universities and institutes, education and training personnel in the field of nanotechnology, technology transfer and promotion of public and industrial awareness of nanotechnology. This center provides international platform for academicians and researchers from the region, AIT and our partnered universities worldwide to work together with the industries. Current research activities at the CoEN is based on a unifying concept of using inexpensive wet chemical methods and self-organization processes to fabricate innovative materials, develop diagnostic tools, and apply nanoparticles to environmental issues amongst others. Activities of the CoE at AIT include, but not exclusively, research and development focused on the application of nanoparticles, nanomaterials, devices and sensors. The CoE will support innovative research suited to the region, education and training of highly qualified personnel and in increasing public and industrial awareness of nanotechnology, amongst other activities like arranging conferences, workshops etc.

3. Faculty and Research Staff

Full-time Faculty

MANUKID PARNICHKUN, BEng, Chulalongkorn Univ, Thailand; MEng, PhD, Univ of Tokyo, Japan

Professor *[Robotics, control, and measurement (involves with design and development of hardware and software of mechatronics devices); New robot mechanism, novel control algorithm, and innovative measurement concept are investigated]*

HARSHA ABEYKOON, B.Sc Honors degree in Electrical Engineering from the Department of Electrical Engineering, Faculty of Engineering, University of Moratuwa.

Assistant Professor *[Mobile robotics, bilateral control, motion control, active vibration suppression and haptics are the main focus areas]*

Visiting Faculty

NITIN V AFZULPURKAR, BEng, Univ of Poona, India; PhD, Univ. of Canterbury, New Zealand

Associate Professor, *[Computer vision (pattern recognition and image processing); MEMS design, fabrication for electronic and bio medical applications; Soft computing algorithms for robotics and automation applications; Mechatronics applications for industrial use]*

GABOR LOUIS HORNYAK, Ph.D. (1997), Colorado State University. Instructor (Introduction to Nanoscience) and Research Professor, Department of Metallurgical & Materials Engineering, Colorado School of Mines in Golden, Colorado

Adjunct Faculty *[Span carbon nanotube synthesis & thermodynamics, nano metal composite materials fabrication and optical properties, template synthesis of gold-55 quantum dot clustering thesis & optical character-rization]*

CHANCHANA THANACHAYANONT, Ph.D., Imperial College, London, U.K.

Adjunct Faculty *[Transmission Electron Microscopy; Semiconductor Physics; Quantum Physics; Solar Cells; and Nanoparticles]*

TONSE LAXMINIDHI, Ph.D. from the Department of Electrical Engineering, Indian Institute of Technology, Madras

Visiting Associate Professor, currently is an Associate Professor at the Department of Electronics & Communication Engineering, National Institute of Technology Karnataka, India. He received his Masters Degree in 2008 in Industrial Electronics from Karnataka Regional Engineering College, India, Bachelors degree in Electrical and Electronics Engineering from NMAM Institute of Technology, Nitte, India.

ADRIANO JOSE DA CONCEICAO TAVARES, Ph.D. from University of Minho

Visiting Faculty, Currently Associate Professor Associate Professor at Escola de Engenharia da Universidade do Minho

4. Grants and Sponsored Research Completed in 2016

Development of a Leg Exo- Skeleton Robot for Walking Rehabilitation Project
Duration: 01-Oct-2014 to 30-Sep-2016
Project Investigator (s): Prof. Manukid Parnichkun
Sponsor: Thailand Center of Excellent for Life Sciences
Total Contracted Amount (THB): 1,496,000.00

The Development of Capacitance Instrument, Capacitor Bank Placement's Equipment and Corrective Maintenance from Capacitance Value of Capacitor Unit
Duration: 01-Jan-2014 to 31-Dec-2016
Project Investigator (s): Prof. Manukid Parnichkun, Dr. Mongkol Ekpanyapong
Sponsor: Electricity Generating Authority of Thailand
Total Contracted Amount (THB): 1,606,500.00

Development of a Versatile Mobile Robot Platform for Future Research on Field based Navigation
Duration: 01-Jan-2016 – 30-Jun-2016
Project Investigator (s): Dr. A.M. Harsha S. Abeykoon
Sponsor: Research Initiation Grant
Total Contracted Amount (THB): 58,000.00

Master Degree in HDD Engineering Technology #5
Duration: 01-Jul-11 to 30-March 2016
Project Investigator(s): Nitin Afzulpurkar
Sponsor: Western Digital Co. Ltd.
Total Contracted Amount (THB): 9,776,000.00

Master Degree in HDD Engineering Technology #6
Duration: 01-Jul-12 to 31-Dec-2016
Project Investigator(s): Nitin Afzulpurkar
Sponsor: Western Digital Co. Ltd.
Total Contracted Amount (THB): 6,016,000

5. On-going Grants and Sponsored Research

Preparation of Commercialization of Walking Rehabilitation Robot Project
Duration: 01-Dec-2015 to 30-Nov-2017
Project Investigator (s): Prof. Manukid Parnichkun
Sponsor: Thailand Center of Excellent for Life Sciences
Total Contracted Amount (THB): 800,000.00

Development of Autonomous Mobile Robotic Chair with Ability of Staircase Climbing for Handicapped and Elderly People Project
Duration: 01-Feb-2015 to 31-Jan-2018
Project Investigator (s): Prof. Manukid

Parnichkun
Sponsor: Health Systems Research Institute
Total Contracted Amount (THB): 1,590,000.00

Development of Autonomous Mobile Robotic Chair with the ability of staircase climbing for Handicapped and Elderly People Phase II
Duration: 01-Nov-16 to 31-Oct-2018
Project Investigator(s): Prof Manukid Parnichkun
Sponsor: HSRI
Total Contracted Amount (THB): 672,000.00

Automatic Helmet Wearing Detection for the Safety of Motorcycle Rider
Duration: 15-Mar-2015 to 30-Jun-2017
Project Investigator (s): Dr. Mongkol Ekpanyapong
Sponsor: Thailand Research Fund
Total Contracted Amount (THB): 1,975,000.00

The Feasibility Study to Industrialize Direct Rice Seeding's Machine
Duration: 08-Oct-2014 to 31-30 June 2017
Project Investigator (s): Dr. Mongkol Ekpanyapong
Sponsor: Agricultural Research Development Agency
Total Contracted Amount (THB): 3,867,710.00

Development of Automated Eucalyptus Transparent Machine Project
Duration: 16-Aug-16 to 15-Aug-2017
Project Investigator(s): Dr Mongkol Ekpanyapong & Dr Matthew N Dailey
Sponsor: Eucalyptus Thai Co Ltd
Total Contracted Amount (THB): 815,000.00

Development of Automated Portable Camera system for Eucalyptus growth measurement project
Duration: 16-Aug-16 to December 2017
Project Investigator(s): Dr Mongkol Ekpanyapong & Dr Matthew N Dailey
Sponsor: Member Alliance Co Ltd
Total Contracted Amount (THB): 705,000.00

Smart City: Video Analytic Platform for CCTV Security
Duration: 01-Jul-16 to 30-Dec-2017
Project Investigator(s): Dr Mongkol Ekpanyapong & Dr Matthew N Dailey
Sponsor: NSTDA, Thailand
Total Contracted Amount (THB): 14,000,000.00

Automated Vehicle Identification Service Platform
Duration: 01-Jul-16 to 30-Dec-2017
Project Investigator(s): Dr Mongkol Ekpanyapong & Dr Matthew N Dailey
Sponsor: NSTDA, Thailand
Total Contracted Amount (THB): 1,672,000.00

The Analysis, Study, and Improvement of Automated Rice Dropping System for Cost Reduction and Productivity Improvement Rice Farming
Duration; August 2013 – December 2017
Project investigator (s): Dr. Mongkol Ekpanyapong
Sponsor: Agricultural Research Development Agency (ARDA)
Total Contracted Amount: (THB) 812,480.00

6. Publications

Book Chapters

Abeykoon, A.M. Harsha S. and R.M. Maheshi Ruwanthika. "Remote Gripping for Effective Bilateral Teleoperation." Handbook of Research on Human-Computer Interfaces, Developments, and Applications. IGI Global, 2016. 99-134. Web. 4 Jul. 2016. doi:10.4018/978-1-5225-0435-1.ch005

Journal Papers

Chantarachit, S. and Parnichkun, M.. "Development and Control of a Unicycle Robot with Double Flywheels," International Journal of Mechatronics. Elsevier Science Ltd. (2016) Impact Factor 1.823.

Kim, C. M. and Parnichkun, M. "MLP, ANFIS and GRNN based real-time coagulant dosage determination and accuracy comparison using full-scale data of a water treatment plant," Journal of Water Supply: Research and Technology - AQUA (2016).

Sutyasadi, P.and Parnichkun, M. "Gait Tracking Control of Quadruped Robot Using Differential Evolution Based Structure Specified Mixed Sensitivity H8 Robust Control," Journal of Control Science and Engineering. Hindawi Publishing Corp., Vol. 2016, Article ID 8760215, 18 pages, 2016. doi:10.1155/2016/8760215 (2016). Impact Factor 0.68.

Wattaranthenna, G. and Parnichkun, M. "Unmanned Vehicle Guidance Using GPS and Digital Low Pass Filtering," International Journal of Advance Research in Computer Science and Software Engineering. Vol.6, Issue 5. (2016). Impact Factor 2.5.

Pinto, S., Pereira J. Gomes, T, Ekpanyapong, M. and A. Tavares, "Towards a Trust Zone-assisted Hypervisor for Real Time Embedded Systems", IEEE Computer Architecture Letter, October 2016, Impact factor 1.0

Srichan, C., Ekpanyapong, M., Horpratum M., Danvirutai P., Bohez E.B., Phokharatkul D., and Wisitsoraat A., "Highly-Sensitive Surface-Enhanced Raman Spectroscopy (SERS)-based Chemical Sensor using 3D Graphene Foam Decorated with Silver Nanoparticles as SERS Substrates", Scientific Reports, March 2016, Impact factor 5.578

Tangjittaweechai L., Ekpanyapong, M., Watewai T., Athikulwongse K., Lim S. K., and Tavares A., "Fast Bidirectional shortest path on GPU", March 2016, IEICE Electronics Express, in press, Impact factor 0.39

7. Doctoral Students' Dissertation

Mechatronics

A New Throughput Forecasting Model for Disk Drive Automated Test Operation

By: Shahzadi Tayyaba
Supervisor: Dr. Nitin V. Afzulpurkar (Chairperson), Dr. Huynh Trung Luong (Co-chairperson)

Longitudinal Control of an Intelligent Vehicle Using PSO-Based SMC
By: Mr. Somphong Thanok
Supervisor: Dr. Manukid Parnichkun

Disturbance Rejection and Balancing Control of a Quadruped Robot
By: Mr. Petrus Sutyasadi
Supervisor: Dr. Manukid Parnichkun

Microelectronics and Embedded Systems

Studies on Metal Oxide Semiconductor Nanorods for Piezoelectric Applications and Design of Electrodes for Piezoenergy Harvesting
By: Mrs. Indrani Dakua
Supervisor: Dr. Nitin V. Afzulpurkar

Parallel Shortest Path Algorithms for Graphics Processing Units
By: Miss Lalinthip Tangjittaweechai
Supervisor: Dr. Mongkol Ekpanyapong

8. Masters Students' Theses and Projects

Mechatronics

Development of Smart Homes
By: Mr. Mehran Mostafazadeh Fard
Supervisor: Dr. Manukid Parnichkun

The Impact of Solder Width and Submount Gold Thickness on an Integrated Slider Assembly Camber
By: Mr. Larry Chun Hai Tan
Supervisor: Dr. Mongkol Ekpanyapong
Development of a Clamping Device for Six Face Machining Experiments
By: Mr. Kunal Sharma
Supervisor: Assoc. Prof. Erik L. J. Bohez
Development of a Stair-Climbing Robot
By: Mr. Phyo Thae Htoo
Supervisor: Dr. Manukid Parnichkun

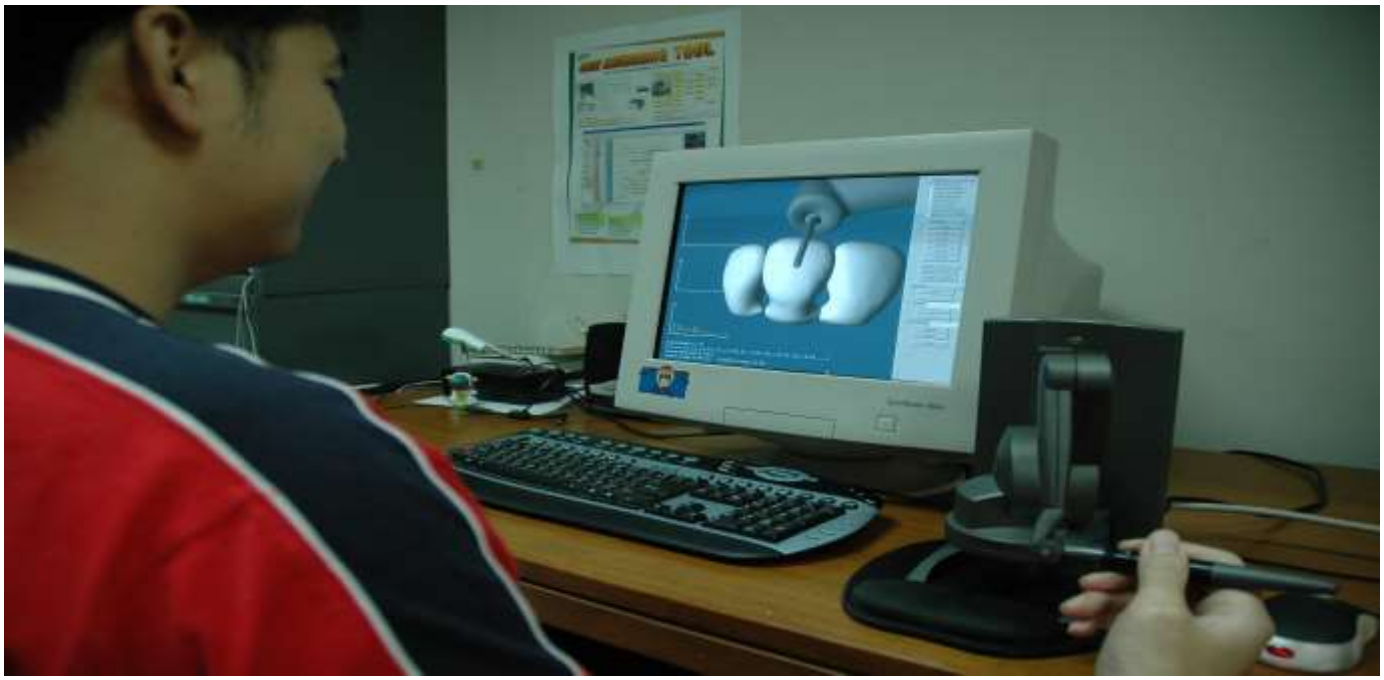
Automatic Laos's License Plate Recognition
By: Mr. Touxiong Bouaneng
Supervisor: Dr. Mongkol Ekpanyapong

Vibration and Position Control of an Overhead Crane
By: Mr. Touy Sorphabmixay
Supervisor: Dr. Manukid Parnichkun
Position Control of a Ball on an Imbalanced Segway using an LQR Controller
By: Mr. Christopher Shawn Sebastian Pulle
Supervisor: Dr. Manukid Parnichkun

Microelectronics and Embedded Systems

Realization of Low Refractive Index Structure Using Porous Silicon for Optical Guiding Applications
By: Mr. Zain Zia
Supervisor: Dr. Mongkol Ekpanyapong

3.2.2: SET – INDUSTRIAL AND MANUFACTURING ENGINEERING



1. Introduction

Industrial and Manufacturing Engineering field of study prepares students for manufacturing management and decision support positions in industry and public sector, by equipping them with a broad range of decision making skills for a variety of applications. The IME curriculum reflects the objective of imparting fundamental knowledge to develop the ability to address complex industrial issues, emphasizing on how to design, operate, control, and optimize the production systems.

2. Research Facilities and Laboratories

IME field shares all the laboratory facilities with Mechatronics and Microelectronics and Embedded Systems fields of study. There are several well equipped laboratories with the primary function of supporting the students and faculty for teaching and research and to conduct outreach programs.

Computer Integrated Manufacturing (CIM) Laboratory

The Computer Integrated Manufacturing (CIM) laboratory was officially inaugurated on September 23, 1991. It provides the software support for Industrial Systems Engineering. Many research activities have been carried out in close collaboration with industry and government sectors in the areas of Computer Aided Design (CAD), Computer Aided Manufacturing (CAM), Computer Numerical Control (CNC), Rapid Prototyping (RP) and Medical Technology. The CIM Laboratory will be a home for a new factory automation.

Operation Research Laboratory

Operation Research Laboratory is where faculty and students use to conduct research on the applications of OR & MS knowledge to help find solutions for various complicated problems in manufacturing and service industries. Development of solution techniques for large scale optimization problems in logistic and supply chain networks are also of research interest.

A-Cube Laboratory

A-Cube Laboratory is where faculty and students use to conduct research on customer-oriented manufacturing that includes design for customer experience, co-created product design, image-based additive manufacturing from 3D CAD models, reverse engineering and sketch-based modeling, and flexible automation for rapid personalized production. Besides, research on additive manufacturing for tissue engineering is also conducted here in this laboratory.

3. Faculty and Research Staff

Full-time Faculty

VORATAS KACHITVICHYANUKUL, BS, Natl Taiwan Univ; MEng, AIT, Thailand; PhD, Purdue Univ, Indiana, USA.

Professor *(Simulation; ERP; Scheduling, Metaheuristics; Parallel Computing) [Planning and Scheduling Systems; Enterprise Resource Planning Systems; Supply Chain Modeling and Analysis; Discrete Event Simulation Software Development; Manufacturing System Simulation; Manufacturing Decision Support Systems; Just-in-Time Manufacturing System]*

ERIK L J BOHEZ, Burgerlijk Werktuig Kundig Electro- TechnischIngenieur, RijksUniversiteit Gent (State University Ghent, Belgium); Kandidatuur Burger lijkIngenieur, RijksUniversiteit Gent (State University Ghent, Belgium); TechnischIngenieur Electro-Mechanica, HogerTechnischInstituutSint Antonius Gent, (High Technical Institute Saint Antonius Ghent; Belgium).
Associate Professor *(Computer Aided Design; Computer Aided Manufacturing; Computer Graphics; Computer Numerical Control; Five Axis Machining; Robust Control; Simulation of Metal Removal; [CNC/CAD/CAM ; Mold and Die Design, Eco-Design, Biomechanics, Industrial Packaging]*

HUYNH TRUNG LUONG, BEng, Ho Chi Minh City Univ of Tech, Vietnam; MEng; DEng, AIT, Thailand.

Associate Professor *[Emergency inventtory policies and inventory policies for perishable products; Supply chain design; Measures of bullwhip effect in supply chains; Availability-based and reliability-based maintenance; Fuzzy quality control charts; Statistical design of experiments; Network flows related problems]*

PISUT KOOMSAP, BEng, Thammasat Univ, Thailand; MSc, Univ of Louisville; PhD, Pennsylvania State Univ, USA

Associate Professor *(Sensing and Control for Manufacturing Processes and Systems; Laser Applications in Manufacturing; Rapid Prototyping; Condition-Based Maintenance; Continuous Improvement) [Rapid Prototyping; Sensing and Control for Manufacturing Processes and Systems; Laser Applications in Manufacturing; Condition- Based Maintenance; Continuous Improvement]*

Visiting Faculty

DR. BALKRISHNA EKNATH NARKHEDEE, Ph.D. (Mechanical Engineering) University of Mumbai, India

Visiting Professor, currently Associate Dean (Resource Mobilization & Finance) at VeermataJijabai Technological Institute (VJTI), Mumbai, India and Visiting faculty at National Institute of Industrial Engineering (NITIE) Mumbai, India. Masters degree in Metallurgical Engineering from Visvesvarayya National Institute of Technology, Nagpur, India.

DR. MUKESH KUMAR BARUA, Ph.D Supply Chain Management from IIT Madras India,

Visiting Associate Professor, currently Associate Professor, Department of Management Studies. IIT Roorkee. He is also a Visiting Professor at Defense Engineering College, FDRE's Metals and Engineering Corporation, Ethiopia. B.E. Industrial and Production Engg. from SGSITS Indore. M. Tech. Mechanical Engg. from IIT Madras, India

PROF. ANDREI SZUDER, Ph.D. Mechanical Engineering, University Claude Bernard -EcoleCentrale de Lyon France and PhD Industrial Engineering,Polytechnic University of Jassy. Romania.

Visiting Professor, Master degree in Manufacturing& Industrial Engineering from University, Politehnica, Bucharest, Romania

PROF. AQUIL AHMED, Ph.D. from Indian Institute of Technology.
Visiting Professor, currently, he is the Vice President of Indian Society for Probability & Statistics. He did his M.Sc.& M.Phil from A.M.U.Aligarh, India. He is the Founder Head, Department of Statistics, University of Kashmir, Srinagar and was Head, Department of Statistics, University of Kashmir

DR. R. MURUGESAN, Ph.D**.** Entrepreneurship (Doctoral Title) in Economics from Bharathidasan University

Visiting Associate Professor, *currently Associate Professor* in the Department of Economics at National Institute of Technology, (NITT), Tiruchirappalli where he serves as a full time faculty member since 1999. Master of Economics (1985) and a Bachelor in Economics (1983) from the University of Madras

DR. AJAY K.S. SINGHOLI, Ph.D. Mechanical Engineering degree from University School of Engineering and Technology, Indraprastha University, Delhi, India

Visiting Associate Professor, currently head of the Department Mechanical and automation engineering at his parent institute in India i.e. G.B. Pant Government Engineering College, Delhi and also heading the office of training and placements. Master degree Masters of Technology is in Engineering Systems (Manufacturing Systems) from Faculty of Engineering, Dayalbagh University, Agra; 2002.He had completed his bachelor degree of engineering in Mechanical Engineering from Dayalbagh University,

DR. ANTARYAMI MISHRA, Ph.D. IIT, Kharagpur, India

Visiting Professor, currently Professor in Mechanical Engineering Indira Gandhi Institute of Technology. B.Sc.Engg(Hons), M.Sc.Engg. Machine Design and Analysis, ITT, Kharagpur, India

4. Grants and Sponsored Research Completed in 2016

Optimal Design of Turbine Geometry for Small Hydroelectric Power Plant of PEA
Duration: Jun-2012 to Dec-2016
Project Investigator (s): Ir. Erik L.J. Bohez
Sponsor: Provincial Electricity Authority
Total Contracted Amount
(THB): 12,762,000.00

Product Design & Development of Nawaplastic Industries
Duration: 01-Oct-2015 to 30-Dec-2016
Project Investigator (s): Dr. Pisut

Koomsap
Sponsor: Nawaplastic Industries
Total Contracted Amount
(THB): 135,000.00

5. On-going Grants and Sponsored Research

The 10 International Federations of Logistics and SCM Systems
Duration: 01-Jan-2015 to 31-Dec-2017
Project Investigator (s): Prof. Voratas Kachitvichyanukul
Sponsor: Conference Participants
Total Contracted Amount
(THB): 1,500,000.00

Development and implementation of Impulse Pump as Turbine from centrifugal pump for small hydropower plant for provincial electricity Authority
Duration: 01-Nov-2016 to 01-Nov-2018
Project Investigator (s): Dr Erik L.J.Bohez
Sponsor: PAT/PEA
Total Contracted Amount
(THB): 14,098,055.00

The International Simulation and Modelling conference 2017
Duration: 01-Oct-2016 to 30-Jun-2018
Project Investigator (s): Prof Voratas Kachitvichyanukul
Sponsor: Multi Donor
Total Contracted Amount
(THB): 1,500,000.00

6. Publications

Journals Papers

Kunnapapdeelert, S. and Kachitvichyanukul, V. New Enhanced Differential Evolution Algorithms for Solving Multi-depot Vehicle Routing Problem with Multiple Pickup and Delivery Requests, International Journal of Services and Operations Management, (article in press).

Yu, Vincent F., Jewpanya, P. and Kachitvichyanukul, V. Particle swarm optimization for the multi-period cross-docking distribution problem with time windows, International Journal of Production Research, 54(2), pp. 509-525 (2016),doi: 10.1080/00207543.2015.1037933

Suntaree , S.H., Kachitvichyanukul, V. An Adaptive PSO Algorithm for Location-Allocation Problem in Supply Chain, International Journal of Logistics and SCM Systems, (ISSN 1881-5456), Vol. 9, Number 1, pp. 11-22, 2016

Pongchairerks, P. and Kachitvichyanukul, V. A two-level particle swarm optimization algorithm for open-shop scheduling problem, International Journal of Computing Science and Mathematics,7(6), pp. 575–585, 2016, DOI: 10.1504/IJCSM.2016.081693

Charoenchokdilok, T., Koomsap, P. (2016). Improving Risk Assessment for Customer-Oriented FMEA, Total Quality Management & Business Excellence, DOI: 10.1080/14783363.2016.1274229.

Parajuli, D., Koomsap, P., Parkhi, A.A., and Supaphol, P., (2016), Experimental Investigation on Process Parameters of Near-Field Deposition of Electrispinning-Based Rapid Prototyping, Virtual and Physical Prototyping, Volume 11, Issue 3, pp. 193-207, DOI: 10.1080/17452759.2016.1210314.

Sirikasemsuk, K. and Luong, H. T. (2016). Measure of bullwhip effect in supply chains with first-order bivariate vector autoregression time-series demand model. *Computers & Operations Research* (accepted).

Narkhede, B. E., Raut, R., Gardas, B., Luong , H. T., and Jha, M. (2016). Selection and Evaluation of Third Party Logistics Service Provider (3PLSP) by using an Interpretive Ranking Process (IRP). *Benchmarking: An International Journal* (accepted).

Siddique, P.J., Luong, H.T., and Shafiq, M. (2016). An Optimal Joint Maintenance and Spare Parts Inventory Model. *International Journal of Industrial and Systems Engineering* (accepted).

Moodleah, S., Bohez, E.J., Makhanov, S.S Five-axis machining of STL surfaces by adaptive curvilinear toolpaths, International Journal of Production Research Volume 54, Issue 24, 16 December 2016, Pages 7296-7329

My, C.A., Bohez, E.L.J , New algorithm to minimize kinematic tool path errors around 5-axis machining singular points, My, C.A., Bohez, E.L.J., International Journal of Production Research, Volume 54, Issue 20, 17 October 2016, Pages 5965-5975

Shah, S.A., Bohez, E.L.J., Shah, K., ul Haq, I., Azam, K., Anwar, S., Colored Petri net model for significant reduction of invariants in flexible manufacturing systems, International Journal of Advanced Manufacturing Technology Volume 88, Issue 5-8, 1 February 2017, Pages 1775-1787

Chivapornthip, P., Bohez, E.L.J., Dependence of bulk viscosity of polypropylene on strain, strain rate, and melt temperature, Polymer Engineering & Science, 5 OCT 2016, DOI: 10.1002/pen.24459

Sriprateep, K., Bohez, E.L.J., CAD/CAE for stress–strain properties of multifilament twisted yarns, Textile Research Journal, March 2016
DOI: 10.1177/0040517516636000

International Conference Paper

Salde, S. C., Kachitvichyanukul, V., and Rienkhemaniyom, K. A Mathematical Model for Integrated Harvest and Post-Harvest Operations Planning and Scheduling, Proceedings of the International Conference of Logistic and Supply Chain Management Systems (ICLS 2016), Bali, Indonesia, July 2016, pp267-275

Suwannimitr, P., and Koomsap, P., Design for Ease of Service, The International Conference on Sustainable Smart Manufacturing (S2M), Lisbon, Portugal, October 2016

Hussadintorn Na Ayutthaya, D., and Koomsap, P., Incorporating Customer Perceived Value in Designing Customer Experience, The International

Conference on Sustainable Smart Manufacturing (S2M), Lisbon, Portugal, October 2016

Hussadintorn Na Ayutthaya, D., Nunes, M., and Koomsap, P., Co-creation experience in higher education (HE) sector, The 3rd International Conference on Project Evaluation (ICOPEV 2016), Guimares, Portugal, June 2016

Bain, S., and Koomsap, P., Preliminary Study on Solvent Effect in Fiber Fabrication in Near-Field Electros-pinning, Proceedings of the 2nd International Conference on Progress in Additive Manufacturing, Singapore, May 2016, pp. 415-420.

Astanti, R.D., Ai, T.J., Dong, D.C., and Luong, H.T. (2016). A Buyer Vendor Coordination Model. Proceedings of the 17th Asia Pacific Industrial Engineering and Management Conference (APIEMS2016), Taiwan.

Ai, T.J., Astanti, R.D., Ai, T.J., Wardoyo, M.M., and Luong, H.T., (2016). Forecasting of Purchase Dependent Power Demands Using Vector Autoregressive Model as Basis for Inventory Policy in a Retailer. Proceedings of the 17th Asia Pacific Industrial Engineering and Management Conference (APIEMS2016), Taiwan

Jittsomboon, V. , Luong, H.T. (2016). Option Contract with Put and Call Option: A Case of One Buyer and Two Suppliers. Proceedings of the 17th Asia Pacific Industrial Engineering and Management Conference (APIEMS2016), Taiwan.

Keynote Lectures

Kachitvichyanukul, V.,
Supporting Sustainable Supply Chain via E-commerce, Keynote lecture given at the International Conference of Logistic and Supply Chain Management Systems (ICLS 2016), Bali, Indonesia, July 2016

International Recognition

Professor Voratas Kachitvichyanukul was elected as Chairman of the International Federation of Logistics and SCM Systems.

7. Doctoral Students' Dissertation

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8. Masters Students Theses and Projects

Industrial and Manufacturing Engineering

An Exponential Risk Assessment for Customer-Oriented FMEA
By: Miss Panarpa Ardneam
Supervisor: Dr. Pisut Koomsap

A Framework of New Product Development Process Based on Service-Dominant Logic
By: Ms. Meghla Clara Costa
Supervisor: Dr. Pisut Koomsap

Option Contract in One Supplier-Two Retailers Supply Chain with Limited Supply Capacity
By: Mr. Pyae Phyo Lwin
Supervisor: Dr. Huynh Trung Luong

Innovative Design for Customer Experience
By: Miss Duangthida Hussadintorn Na Ayutthaya
Supervisor: Dr. Pisut Koomsap

Inventory Positioning in Distribution Network
By: Miss Prasadi Watsala Gunawardana
Supervisor: Dr. Huynh Trung Luong

Design and Development of Rapid Prototyping for Kids
By: Miss Sasiton Hahuad
Supervisor: Dr. Pisut Koomsap

Option Contract with Put and Call Option: A Case of One Buyer and Two Suppliers
By: Mr. Vorraseth Jittsomboon
Supervisor: Dr. Huynh Trung Luong

Solvent Effects on Electrospun 3D Scaffold with Electrospinning-Based Rapid Prototyping (ESRP) Technique
By: Mr. Sudipta Bain
Supervisor: Dr. Pisut Koomsap

Product Flow-Based Tiling Automation for Mosaic Creation from Multiple-Size Tiles
By: Mr. Khangamlung Kamei
Supervisor: Dr. Pisut Koomsap

Packaging Design for Fried Chicken Sauce
By: Mr. Phawin Pawattana
Supervisor: Assoc. Prof. Erik L. J. Bohez
Life Cycle Assessment of a Printing Toner Cartridge: Comparative Study for Different End of Life (EoL) Scenarios in AIT Campus
By: Mr. Md. Omar Farouk
Supervisor: Assoc. Prof. Erik L. J. Bohez

Developing an Effective Model of Demand Forecasting for a Thai Beverage Packaging Company
By: Ms. Bui Huyen Trang
Supervisor: Dr. Huynh Trung Luong

Forecasting Models for Demand of Electric Power Consumption in Dak Nong Province, Vietnam
By: Mr. Ngo Quoc Phong
Supervisor: Prof. Voratas Kachitvichyanukul

Improving Production Scheduling at Nutifood Instant Milk Powder Plant in Vietnam
By: Ms. Tran Thi Thuy Nhung
Supervisor: Prof. Voratas Kachitvichyanukul

Control Chart for CNC Machining Process at SST Vietnam Factory
By: Mr. Tran Vuong Dinh Tuyen
Supervisor: Prof. Voratas Kachitvichyanukul

Approaches for Space Part Inventory at CUMMINS - DKSH, Vietnam
By: Ms. Phan Thi Chau Giang
Supervisor: Prof. Voratas Kachitvichyanukul

Production Sequencing and Scheduling
in Vietnam Lubricants and Chemicals
Joint Stock Company (VILUBE)
By: Mr. Dinh Nguyen Duy Dung
Supervisor: Dr. Huynh Trung Luong

3.2.3: SET – NANOTECHNOLOGY

1. Introduction

Nanotechnology

Nanotechnology is an interdisciplinary field and hence this programme is addressed to both engineering and science background students. The master of engineering program in nanotechnology focusing on advanced materials and nano-materials. It aims to prepare students to play an active role in shaping their career in the application of appropriate

The programme in Nanotechnology at AIT is designed to address the knowledge-based industries of the 21st century that will require continuous development of their workforce. Postgraduate nanotechnology masters and Ph. D. courses are a well-recognized means of gaining experience in state-of-the-art techniques and applications. The program at AIT is addressed to the needs of engineers and science background students for entering into this burgeoning technology area. Nanotechnology with a focus on nanomaterials engineering at AIT provides international level engineering program. Partnership in learning and research with the corporate world is been one of the hall marks of the program.

The AIT Nanotechnology Graduate program is a unique blend of truly cross-disciplinary teaching with an integrated curriculum. Budding Nanotechnologists come from different disciplines, including various engineering disciplines, physics, materials sciences and chemistry, so a good postgraduate programme in nanotechnology must be able to accommodate students from a wide range of backgrounds. Nanotechnology is an interdisciplinary field and the engineering focus of the AIT programme indeed targets only the engineers and science background students.

3.7.2 Research Facilities and Laboratories

Laboratory Facilities

The Nanotechnology Laboratory consists of a chemistry lab, instrumentation lab, and biology lab and electronics laboratory. The chemistry laboratory is equipped with standard chemical tables and hood for carrying out wet-chemical processing and several furnaces and humidity control chamber. The instrumentation room consists of equipment's such as optical spectrophotometer, contact-angle measurement system, solar simulator, photo catalysis bench, gas-sensor test bench, CVD system, methanol reforming reactor, nanowire factory etc. The electronics lab is equipped with digital oscilloscopes, signal generators, power supplies, standard voltage and current meters as well as stocked with discrete devices for testing and research. Thin film deposition systems (dip-coating units) and custom ink-jet printing equipment is also available. The newly set up biolab consists of autoclave, centrifuge, incubation chamber, laminar airflow, incubator shaker, microscope etc. These facilities are used for teaching and research proposes at AIT.

Our research encompasses working in "Poor-man's nanotechnology". The unifying concept in the laboratory is to make use of inexpensive wet-chemical methods to fabricate innovative materials and futuristic device components. The education is supported by a state-of-the-art research center focused on applications of nanoparticles in Energy, Food & Agriculture and the environment. Current research activities focuses on dye-sensitized solar cells, piezotronic devices, gas sensors, bio-diagnostic tools, environmental mitigation through visible light photocatalysis, self-organization of nanoparticles, and layer-by layer growth from colloidal particles, amongst others.

Center of Excellence in Nanotechnology (CoEN)

The Center of Excellence in Nanotechnology addresses the creation of knowledge in areas relevant to industries. Activities include joint research with other local and international universities and institutes, education and training personnel in the field of nanotechnology, technology transfer and promotion of public and industrial awareness of nanotechnology. This center provides international platform for academicians and researchers from the region, AIT and our partnered universities worldwide to work together with the industries. Current research activities at the CoEN is based on a unifying concept of using inexpensive wet chemical methods and self-organization processes to fabricate innovative materials, develop diagnostic tools, and apply nanoparticles to environmental issues amongst others. Activities of the CoE at AIT include, but not exclusively, research and development focused on the application of nanoparticles, nanomaterials, devices and sensors. The CoE will support innovative research suited to the region, education and training of highly qualified personnel and in increasing public and industrial awareness of nanotechnology, amongst other activities like arranging conferences, workshops etc. Members of the Center of Excellence in Nanotechnology have published over 80 journal papers, articles and book chapters since its inception in 2006. Wide ranging collaboration with multinationals and smaller companies in the region includes Donaldson Inc. (USA), Rak Investment Co. (UAE), SVI Company Ltd. and Western Digital (Thailand), Advance Nanotec (India) and NanoThread Inc. (USA). The Center of Excellence in Nanotechnology has extensive research collaborations with State University of New York, Buffalo and Colorado School of Mines (USA), Swiss Federal Institute of Technology-Lausanne (Switzerland), Uppsala University and Royal Institute of Technology (Sweden), Agharkar Research Institute and S. N. Bose Center for Basic Sciences (India), Chulalongkorn University, Prince of Songkhla University, Naresuan University, NANOTEC/NSTDA (all in Thailand), amongst others.

The Center of Excellence in Nanotechnology, AIT released a portfolio of 16 nanotechnology products and processes to mark the AIT 52nd Anniversary celebrations last September 5, 2011 at Renaissance Hotel, Bangkok. The portfolio release is a culmination of five (5) years of extensive research in the center, one of the 8 centers in Thailand supported by National Nanotechnology Center (NANOTEC). Four patents for these products have been applied and others in the process.

3.7.3 Faculty and Research Staff

Full-time Faculty

G. LOUIS HORNYAK, Ph.D.–*Education*: Ph.D. Chemistry, Colorado State University; MA & BA Biology, University of Colorado; BA Chemistry, University of California at San Diego.

Assoc. Professor–*Author*: Introduction to Nanoscience, Fundamentals of Nanotechnology (CRC Press), Senior Editor, Perspectives in Nanotechnology Series (CRC Press); *Research Interests*: Carbon nanotube synthesis, nanometal-ceramic composites, fabrication, simulation and optical properties; advanced surfaces, super hydrophobic, and anti-biofouling materials; energy, batteries and triboelectric materials. *Curriculum*: Nanomaterials & Nanotechnology, Self-Assembly, Catalysis, Nano thermodynamics, Nanotechnology for the Life Sciences, and Societal Implications.

Associated Faculty

SIDDHARTH K. JABADE, Ph.D.– Mechanical Engineering, Indian Institute of Technology (IIT), Bombay; ME (Mechanical, Heat, Power), University of Pune, Pune, India; BE (Mechanical), University of Pune; Qualified Patent Agent in India. *Experience*: Professor, Vishwakarma Institute of Technology (VIT), Pune, India; Dean, Alumni and International Relations, VIT, Pune; and Director, Innovation and Intellectual Property Rights, AIT Solutions, AIT.

Adjunct Faculty – *Author*: Nanotechnology Intellectual Property Rights: Research, Design and Commercialization (CRC Press); *Research Interests*: Heat transfer, applied thermal engineering, freeze concentration; intellectual property policy & impacts; *Curriculum*: Intellectual Property Development and Management; Thermodynamics.

TANUJJAL BORA, D.E. - Doctor of Engineering, Nanotechnology, Asian Institute of Technology; ME, Micro-electronics, Asian Institute of Technology; Bachelor of Technology, Electronics & Communications Engineering, NE Regional Institute of Science & Technology, Guwahati, India. *Experience*: Post-doctoral fellow, Nanotechnology, Sultan Qaboos University, Muscat, Oman; Program Officer, AIT Solutions, Thailand; and Research Assoc., Center of Excellence in Nanotechnology, AIT, Thailand.*Publications*: 25.

Adjunct Faculty – *Author*: Nanometrology; Zinc Oxide Nanostructures (in progress, both by CRC Press); Research: Charge transfer dynamics, dye-sensitized solar cells, photocatalytic water purification, anti-biofouling coatings, antibacterial materials, hydrothermal synthesis of zinc oxide nanorods. *Curriculum*: Characterization of Nanomaterials, Nanomaterials and Nanotechnology, Advanced Seminars in Nanotechnology, Micro and Nanofabrication, Nanometrology, Solar Cell Nanotechnology and Catalysis.

ADRIEN DOUSSE, Ph.D.– *Education*: Ph.D., physics,*summa cum laude*, Laboratory for Photonics and Nanostructures/ CNRS; MSc., Quantum Physics, University of Paris; Bachelor degree, French International School, Hong Kong.*Experience*: Researcher, Solar Cell R&D, NECTEC; Lecturer, Rangsit University; Project support, simulation structural analysis, VCON Hong Kong; Post-doctoral associate, Hong Kong Polytechnic University. Publications: 9 (with one *Nature* paper).

Adjunct Faculty–*Research*: Optical simulation of surface plasmon resonance, Effective medium simulation of nanoparticles, COMSOL Multiphysics finite element simulation of cantilever sensors, Fluid dynamic and tribological simulations of graphene/oil composite fluids, simulation of Superhydrophobic surfaces, simulation of anti-reflection coatings and light trapping; up-conversion and down-conversion of solar cell materials. *Curriculum*: Solid State Physics for Nanotechnology, Nano thermodynamics, Nano mechanics and Characterization Tools for Nanotechnology.

WALLEED S. MOHAMMED, Ph.D.– Ph.D., Optics, College of Optics and Photonics/CREOL, University of Central Florida; MSc., Optics, College of Optics and Photonics/CREOL, University of Central Florida; MSc., Computer Engineering, Department of Computer Engineering, Cairo University, Giza, Egypt; BSc., Electrical Engineering, Department of Electronics and Electrical Engineering, Cairo University, Giza, Egypt. Experience: Director, Center of Research in Optoelectronics, Communications and Control Systems (CROCCS), University of Bangkok; Faculty of Engineering, International School of Engineering (ISE), Chulalongkorn University, Thailand. *Publication*s: 117

Adjunct Faculty– *Author*: Optical Mesoscopic Periodic Arrays (CRC Press). *Research*: Fiber optics, optical simulation and modeling, surface plasmon resonance (SPR) sensors, Raman spectroscopy, metamaterials, photonic structures, Nano photonics, fiber Bragg gratings, non-linear optics, and optical filters. *Curriculum*: Micro and Nanofabrication, Characterization Tools for Nanotechnology, Numerical modeling, Fundamentals of optics.

Research Staff

Mr. Suchart Junteing, Research Assistant, BSc., Chemistry, Ramkhamhaeng University, Thailand. Experience: Pulp and paper technology, coatings application, laboratory supervisor, laboratory safety monitor.

Administrative Staff

Ms. Aphisorn Suwannasuk, Administrative Officer, Center of Excellence in Nanotechnology. Bachelor's degree in Business Computers, Kasem Bundit University; Master's degree, Business Administration (MBA), Eastern Asia University, Thailand. *Experience*: English fluency and office administration.

3.7.4 Grants and Sponsored Research Completed in 2016

Research for Nanotechnology Application for Antifouling Coating
Duration: 20-Dec-15 to 20-Dec-2016
Project Investigator(s): Dr Mongkol Ekpanyapong & Dr Matthew N Dailey
Sponsor: NSTDA, Thailand
Total Contracted Amount (THB): 1,672,000.00

3.7.5 On-going Grants and Sponsored Research

Development of Robust Acrylic Coatings with Nanotechnology
Duration: 20 September 2016 through 31 July 2019
Project Investigators: Dr. G. Louis Hornyak
Sponsor: IDEAL Fasteners Asia Ltd., Hong Kong
Grant Amount: 11,160,000 TB

3.7.6 Masters Students' Theses and Research Studies

Gender and Field of Study-Based Perception of Nanotechnology and Nano-Safety in Thailand's University Community
By: Mr. Chonchalerm Prakunhungsit
Supervisor: Dr. Gabriel Louis Hornyak

Combating marine surface fouling by means of micro- and nanotechnology: Development of a hierarchical micro-nanostructured superhydrophobic surfaces for anti-biofouling applications in marine environments
By: Mr. Anvesh Ravela (EEM, SERD)
Supervisor: Dr. G. Louis Hornyak, Dr. Oleg Shipin

3.3: SET – INFORMATION AND COMMUNICATION TECHNOLOGIES GROUP

Information and communications enable access; connections and sharing in turn enable knowledge creation and economic opportunity. The fields in the Information and Communications group are:

1. Computer Science (CS)
2. Information Management (IM)
3. Remote Sensing and Geographic Information Systems (RS-GIS)
4. Telecommunications (TC)
5. Information and Technologies (ICT)

3.3.1: SET – COMPUTER SCIENCE AND INFORMATION MANAGEMENT

1. Introduction

Computer Science Field of Study

The Computer Science (CS) field of study aims to meet the growing international demand for highly-skilled computer specialists by:

- Providing a curriculum that enables students to acquire the breadth required to function in the modern-day computer industry;
- Providing a state-of-the-art research environment;
- Encouraging students to specialize beyond the basic curriculum by initiating an individual research program;
- Fostering close relationships with both local industry and international Organizations

This field of study focuses on world-class teaching and research into the foundations and applications of computing systems. The curriculum covers a broad range of topics in computer systems, theory, software engineering, information science, and applications. The faculties are particularly active in artificial intelligence, security, computer graphics, machine learning and data mining, robotics, computer vision and image processing, software engineering, networking, simulation, and information systems.

The courses and research topics span the range from theory to practice. Students are encouraged to take courses and conduct research in areas related to computer science such as Information Management, Telecommunications, Information and Communication Technologies, Remote Sensing and Geographic Information Systems, Mechatronics, Microelectronics and Embedded Systems, Industrial Engineering, and other fields of study at the Institute.

Software Engineering Area of Study

In addition to the traditional Masters program in computer science, the Computer Science field of study also offers a Masters degree in computer science with specialization in software engineering. The Software Engineering Area of Specialization is specially designed to fill the Asia-Pacific region's need for highly-trained specialists in software development and the management of software development projects. Students in the program will:

- Receive in-depth training in the latest software development tools, techniques and trends;
- Learn the industry's best practices for management of large software projects;
- Get experience on real problems in collaboration with public and private sector partners during internships.

The software engineering program is particularly aimed at students already having work experience in the software industry.

Information Management Field of Study

The Information Management (IM) field of study is designed to prepare students to respond to four basic challenges confronting business, government and non-profit organizations today:

- Planning the effective use of information and communication technologies
- Developing corporate and government policies to maximize the benefits resulting from the widespread use of these technologies;
- Improving the strategic management of information resources
- Increasing the productivity and creativity

The Information Management field of study at AIT aims to fulfill the growing need for information management skills in government and private organizations. It was the first program of its kind in Asia.

The field focuses on planning the effective use of information and communication technologies within organizations, developing corporate and government policies to maximize the benefits resulting from the wide-spread use of these technologies, improving the strategic management of information resources in business, government, and non-profit organizations, and increasing the productivity and creativity of managers and executives who work with information resources.

Laboratory Facilities

The laboratories for IM are shared with the Computer Science field of study. The labs offer a complete selection of dedicated servers and desktop PCs running Windows and Unix. A variety of management software is available to support student coursework and research.
The laboratories are also sponsored by IBM, who, through its Academic Initiative, provides all students with free use of its Rational and WebSphere software products.

2. Research Facilities and Laboratories

CSIM Laboratories are well-equipped for teaching and research. The program maintains its own file, Web, email, and database servers for experimental and daily use. The teaching lab is kept up to date with modern desktop systems and can seat up to 60 students for practical sessions. Specialized equipment includes a 20-core Xeon grid computing cluster, a heterogeneous compute cloud, and experimental broadband satellite links to Japan and other countries in the region, video and image processing equipment, and augmented/virtual reality equipment. Full wireless coverage in the building allows students to conveniently work with their personal notebook computers.

3. Faculty and Research Staff

Full-time Faculty

KANCHANA KANCHANASUT, PhD, MSc, Computer Science, University of Melbourne, Australia; Graduate Diploma, Computer Science, BSc Mathematics, University of Queensland, Australia.

Chair Professor, Thai Network Information Center (THNIC) and **IntERLab Director** *(Networking and Distributed Computing, Algorithms, Programming Languages)*

PHAN MINH DUNG, MSc, PhD, University of Technology, Dresden, Germany.

Professor *(Computer and Network Security, Autonomous Computing, Logic Programming, Artificial Intelligence)*

SUMANTA GUHA**,** MS, PhD, University of Michigan, Ann Arbor, USA; PhD, Indian Statistical Institute, Calcutta, India; BSc, MSc, University of Calcutta, India.

Professor *(Algorithms, Computer Graphics, Computational Geometry, Robotics)*

VATCHARAPORN ESICHAIKUL, BAcc, Chulalongkorn University, Thailand; MBA, Oklahoma State University; PhD, Kent State University, USA.

Associate Professor *(Electronic Commerce/Electronic Business, Web-based Information Systems, Hypermedia, Electronic Government)*

MATTHEW N. DAILEY, BSc, MSc, North Carolina State University, PhD, University of California, San Diego.

Associate Professor *(Machine Vision & Learning, Robotics, Software Engineering and Open-source Software Development)*

Visiting and Adjunct Faculty

PAUL JANECEK, BSEE, US Military Academy; MSc, University of London, UK; PhD, Swiss Federal Institute of Technology, Switzerland.

Visiting Faculty *(Human-Computer Interaction; Analysis and Design of Information Visualization Systems, Semantic Fisheye Views, Software Engineering and Open-source Software Development, and Information System Development)*

Adjunct Faculty (Database Systems, XML and Web Technologies, Knowledge Representation, Intelligent Systems, Semantic and Linked Data Technologies)

CHUTIPORN ANUTARIYA, BSc, First Class Honors, Chulalongkorn University, Thailand; MSc, D.Tech. Sc., Asian Institute of Technology.

Adjunct Faculty (System Engineering, Software Engineering, System & Software Development in managerial role, Advanced knowledge of software architecture, software product line and software process improvement)

Research Staff

RAMESH MARIKHU, BEng, Kathmandu University, Nepal; MEng, Information & Communication Technologies, Asian Institute of Technology, Thailand.

JEDNIPAT MOONRINTA, BEng, Computer

Engineering, Second-Class Honors, Chiang Mai University, Thailand; MEng, Computer Science, Asian Institute of Technology, Thailand.

PHAN MINH THANG, BEng, Kaldol Kalman College, Hungary; MEng, Computer Science, Asian Institute of Technology, Thailand.

4. Grants and Sponsored Research Completed in 2016

Automatic helmet wearing detection for the safety of motorcycle rider
Duration: 15-03-2015 to 14-03-2016
Project Investigators: Dr Mongkol Ekpanyapong, Dr Mathew N. Dailey
Sponsor: Thailand research fund
Total Contracted Amount (THB): 1,975,000.00

Toyota vehicle speed estimation system
Duration: 01-09-2015 to 31-01-2016
Project Investigators: Dr Mathew N. Dailey
Sponsor: Pineapple vision systems
Total Contracted Amount (THB): 265,000.00

5. On-going Grants and Sponsored Research

Automated Pile Driving Strike Count Verification Platform using Video Analytics.
Duration: 01-01-2016 to present
Project Investigators: Dr. Matthew N. Dailey, Dr. Mongkol Ekpanyapong
Sponsor: Purksa Real Estate Co., Ltd.
(THB): 2,000,000.00

6. Publications

Papers in Refereed Journal

Iqbal W., Dailey M.N., and Carrera D. (2016). Unsupervised learning of dynamic resource provisioning policies for cloud-hosted multi-tier web applications, IEEE Systems Journal, 10(4): 1435-1446.

Sitthi A., Nagai M., Dailey M.N., Ninsawat S. (2016). Exploring land use and land cover of geotagged social-sensing images using naïve Bayes classifier. Sustainability, 8(9): article no. 921.

Anwar M., Esichaikul V., Rehman M., Anjum M. (2016). E-government services evaluation from citizen satisfaction perspective: A case of Afghanistan. Transforming Government: People, Process and Policy. Vol: 10, 139-167.

Rehman M., Anjum M., Askri F., Kamran M. A., Esichaikul V. (2016). Mobile learning adoption framework: An empirical investigation from learner's perspective. Journal of Quality and Technology Management. Vol: 12, 43.

Chomchaiya S., Esichaikul V. (2016). Consolidated performance measurement framework for government e-procurement focusing on internal stakeholders. Information Technology & People. Vol: 29, 30.

Rehman M., Kamal M. M, Esichaikul V. (2016). Adoption of e-Government Services in Pakistan: A Comparative Study Between Online and Offline Users. Information Systems Management. Vol: 33, 248-267.

Sangbuapuan N., Guha S. (2016). Improving Rice Farming in Thailand using Information Kiosks. Information Development. Vol: 32, 1372-1386.

Tantanasiriwong S., Guha S., Janecek P., Haruechaiyasak C. (2016). Cross-Domain Citation Recommender System based on Hybrid Topic Model and Co-Citation Selection. International Journal of Data Mining, Modelling and Management.

Dung P.M. (2016). An axiomatic analysis of structured argumentation with priorities. Artificial Intelligence, Volume 231 February 2016, pp. 107-150.

Papers in Conference Proceedings

Rajapaksha P., Farahbakhsh R., Mohammadi S., Dailey M.N. and Crespi N. (2016). Video content delivery enhancement in CDNs based on users' social information. In IEEE Globecom Workshops, pp. 1-6.

Majeed M.F., Ahmed S.H., Muhammad S. and Dailey M.N. (2016). PDF: push-based data forwarding in vehicular NDN. In MobiSys (Companion Volume), p.54.

Jayalath J., Esichaikul V. (2016). Gamification-embedded eLearning courses for the learner success of competency based education, case of technical and vocational education and training. In Pan Commonwealth Forum 8, Malaysia.

Ali U., Majeed M. F., Esichaikul V. (2016). Predicting citizen's behavior intention of cloud-based government-to-citizens (G2C) services using UTAUT model. In the 2nd International Conference on Emerging Trends in Multidisciplinary Research. 2-3 August 2016, Thailand.

Wongpun S., Guha S. (2016). Support System Architecture for Elder Care in Thailand. In 2nd International Conference on Information Technology and Computer Science (ICRITCS-2016). Page 76.

Dung, P.M. (2016). A Canonical semantics for structured argumentation with priorities. In Proc of Computational Models of Argumentation (COMMA).

Dung, P.M. (2016). Invited Paper: Argumentation for practical reasoning: An axiomatic approach. In Proc of Principles and Practice of Multi-Agent Systems (PRIMA), Springer Verlag.

Dung, P.M., Son, T.C., Thang, P.M. (2016). Argumentation based semantics for logic programs with first-order formulae. In Proc of Principles and Practice of Multi-Agent (PRIMA), 2016, Springer Verlag

7. Doctoral Students' Dissertation

Information Management

Improving Rice Farming in Thailand Using Information Kiosks
By: Mr. Norrasing Sangbuapuan
Supervisor: Prof. Sumanta Guha

8. Masters Students' Theses and Research Studies

Computer Science

Using Web-based Technology in English Language Learning for Children at Primary School
By: Miss Zin Hsu Naing
Supervisor: Prof. Phan Minh Dung

Dynamic Cascaded Conferencing over the Internet
By: Mr. Rey Jimenez Padilla
Supervisor: Prof. Kanchana Kanchanasut

Endoscope Report Integrated with Automatic Image Labeling System
By: Mr. Peeranat Sangkatumvong
Supervisor: Dr. Matthew N. Dailey

Cloud-Based Multi-Tenant Video Analytics Platform
By: Mr. Sornrak Klaypu
Supervisor: Dr. Matthew N. Dailey

People Detection and Tracking under Occlusion
By: Mr. Mazhar Mohsin
Supervisor: Dr. Matthew N. Dailey

Web Based Technologies to Support Teaching and Learning Mathematics in Primary School
By: Mr. Sanindra Shakya
Supervisor: Prof. Phan Minh Dung

Deductive Reasoning and Constraint Checking in Chatbots
By: Mr. Poom Pianpak
Supervisor: Prof. Phan Minh Dung

Linked Data Portal and Recommendation System for University Admission
By: Mrs. Sedillage Dona Harshani Samodya Wickramarathna
Supervisor: Dr. Matthew N. Dailey

Video Content Distribution Enhancement on CDNs Based on Users' Social Information
By: Ms. Rajapaksha Waththe Vidanelage Praboda Chathurangani Rajapaksha
Supervisor: Dr. Matthew N. Dailey

Analysis of XSLT as a General-Purpose Programming Language Applied to Compiler Development
By: Miss Sariya Tangthamniyom
Supervisor: Prof. Phan Minh Dung

Recommender System Optimization
By: Mr. Jiawei Yang
Supervisor: Dr. Matthew N. Dailey

Innovative Citizen's Services through Public Cloud in Pakistan: User's Privacy Concerns and its Impact on Adoption
By: Mr. Umar Ali
Supervisor: Dr. Vatcharaporn Esichaikul

Deep Learning for Face Recognition in Surveillance Videos
By: Mr. Paul-Darius Sarmadi
Supervisor: Dr. Matthew N. Dailey

Information Management

Data Mining Techniques for Predicting the Survival of Passengers on the Titanic
By: Mr. Sabit Kenjebaevich Bakiev
Supervisor: Prof. Sumanta Guha

Business Revenue Prediction: A Case Study of Restaurant Franchises
By: Mrs. Shilpa Agarwal
Supervisor: Prof. Sumanta Guha

Large-Scale Traffic Data Monitoring and Analysis
By: Mr. Worapol Leerunyakul
Supervisor: Dr. Matthew N. Dailey

Relationship of Smartphone Addiction and Academic Procrastination: The Role of Self-Regulated Learning Strategies
By: Mr. Shakeel Ur Rehman
Supervisor: Dr. Vatcharaporn Esichaikul

Representing and Reasoning with Customs Law in Logic Programming
By: Miss Maturos Kolkorn
Supervisor: Prof. Phan Minh Dung

A Ross Macdonald-Based Model for Outbreak Prediction of the Zika Virus in French Guiana
By: Mr. Ramy Ismail Chait
Supervisor: Dr. Vatcharaporn Esichaikul

3.3.2: SET – REMOTE SENSING AND GEOGRAPHIC INFORMATION SYSTEMS



1. Introduction

The Remote Sensing (RS) and Geographic Information Systems (GIS)_are recognized as extremely powerful tools in observing, monitoring, and management of the earth and environment. Owing to rapid developments and changes in spatial data acquisition, processing, analyzing and sharing, technological professionals need to be built who can handle, design, model and transform the data into actionable and reliable information for a wide variety of applications.

The RS&GIS in AIT is a multidisciplinary field and hence handles both engineering and science background students.

While they represent multidisciplinary backgrounds, students in RS&GIS share a common interest, that is, to use remote sensing, GIS, Global Navigation Satellite Systems (GNSS) and other space technologies as tools in pursuing their academic work as well as in developing new technologies that are applicable to the region. Because of the complexity of the technologies together with the heavy dependence on advanced computer skills, application specialists need to have a sound knowledge of the theoretical aspects and practical approaches to integrate many resources of information that address different applications.

The curriculum is designed to address the theoretical aspects and practical application of space technology, especially in Remote Sensing, GIS and GNSS. It provides students ample time and scope to gain practical experience on spatial data through laboratory sessions. Students are trained to understand the structure and characteristic of digital spatial data, its capture through airborne and space borne sensors; handling of big Geo data; processing, analysis and extraction of information by digital tools, GIS and cloud based applications; visualizing and disseminating through web and location based services to secure optimal use of the extracted information. Further, coping with the demand, open source geoinformatics is practiced along with the commercially available platforms for spatial data handling and analysis.

Major areas covered in the coursework are remote sensing and GIS at fundamental and advanced level, earth energy interaction, geometric and atmospheric corrections, application potential in various disciplines, geostatistics, geospatial modeling, Unmanned Aerial Vehicle (UAV) data acquisition, aerospace technology, InSAR fundamentals and processing, GNSS data acquisition, WebGIS, Location based services, and integration of GIS, remote sensing and GNSS.

2. Research Facilities and Laboratories

RS&GIS provides excellent laboratory facilities for teaching, learning and research projects. They consist of institute wide RS&GIS laboratories equipped with cutting edge computers and software; as well as equipment's for data and information generation. The laboratories are equipped with commercial software including, ArcGIS, ERDAS Imagine, ENVI,
IDRISI Terrset and Pix4D as well as open source geospatial software include QGIS, R, SeaDas. The AIT RS&GIS also hosts the SCINDA GPS Base Station, TOPCON GNSS Station and weather station. The RS&GIS laboratory facilities and equipments are listed below:

Laboratory Facilities

- Remote Sensing Laboratory for Digital Image Processing and Digital Photogrammetry
- GIS Laboratory for spatial analysis
- Facilities for Sensor Web GIS
- Facilities for RFID & Internet GIS
- UAV data acquisition and processing
- GNSS laboratory

Equipments

- Handheld GNSS Receiver
- JAVAD GNSS Receiver (Survey Grade)
- Spectrometer

- LAI Measurement
- Unmanned Aerial Vehicle (UAV)

RS&GIS maintains an extensive computing infrastructure for its students, including network file servers for shared access to data and publicly accessible Web servers for scientific communication. The field of study also maintains an internal e-library consisting of thesis, dissertations of RS&GIS graduates and specialised books, journals, computer manuals and open source software.

The field of study facilitates a good research environment for the highest productivity of students. There are two Doctoral rooms with personal counters and three Masters rooms for self-study and research for the students. Further, there are two meeting rooms for research presentations, discussions and research meetings. The RS&GIS provides facility of a network printer with capability of coloured and B&W print, scan and copy in A4 and A3 sizes. It also provides facility of A1 size plotting for posters for research presentation and maps.

3. Faculty and Research Staff

Full-time Faculty

NITIN KUMAR TRIPATHI, BTech, National Institute of Technology, Warangal, India; MTech, IIT; PhD, IIT, Kanpur, India.

Professor *(GIS, Remote Sensing, RFID and Vehicle Tracking, Indoor Positioning Systems, Enviro-nment, Disaster, Agriculture, Health, Applications)*

SARAWUT NINSAWAT, BSci, Silpakorn University; MSci, Asian Institute of Technology, Thailand; Doctor of Creative Cities, Osaka City University, Japan

Assistant Professor *(WebGIS, OGC Web Services & Specifications, SensorWeb. LBS, Mobile GIS Application)*

SALVATORE G.P. VIRDIS, PhD, University of Siena, Italy

Assistant Professor *(Remote Sensing of the Environment, geospatial data mining and advanced geospatial computation, Land-use and land cover change in changing climate, applied geomatics)*

Visiting Faculty

KIYOSHI HONDA, BAgr, DEng, University of Tokyo, Japan

Visiting Professor (*Image Processing, Erosion control, Terrain modeling, Sensor Web GIS)*.

MARC SOURIS, PhD, Université de La Rochelle, France

Visiting Professor *(Computational geometry and algorithms, GIS development, Spatial analysis, GIS and Remote Sensing for Epidemiology)*

RYOSUKE SHIBASAKI, BEng, MEng, Deng, University of Tokyo, Japan

Visiting Professor *(integration of data and models based on GIS to reconstruct spati-temporal dynamics of objects, micro-simulation modeling, 3D mapping of urban areas, and their applications)*

MASAHIKO NAGAI, BS, St. Cloud State University, USA; MS, Asian Institute of Technology, Thailand; DEng, The University of Tokyo, Japan

Visiting Faculty *(Spatial Information Engineering, Remote Sensing, GIS, Image Processing, Mobile Mapping Ontology, Data Interoperability, Environmental Information Science)*

TAI NAKAMURA, PhD, University of Tokyo, Japan

Visiting Faculty *(Aerospace Engineering, Mathematics, Physics, Space Environment Utilization)*

APICHON WITAYANGKURN, DEng, University of Tokyo, Japan

Visiting Faculty *(Large-Scale Spatial Data Processing/Mining, Trajectory data processing (GPS, CDR), Mobile Computing, Human Activity and Behavior Analysis, Parallel Processing, Cloud Computing Platform, HADOOP,Sensor Network (OGC, SWE), Real-time monitoring system, Sensor-based Unmanned Aerial Vehicle (UAV))*

HIROYUKI MIYAZAKI, PhD, University of Tokyo, Japan

Visiting Faculty *(GIS, Satellite remote sensing, Positioning technology, mobile phone technology, energy, environment, disaster management, urban infrastructure, public health)*

Affiliated Faculty and Research Staff

SHIRO OCHI, PhD, Graduate School Engineering, University of Tokyo, Japan

Visiting Scientist *(Remote Sensing and GIS applications)*

CHITRINI MOZUMDER, BEng, Assam Engineering College, India; MTech National Institute of Technology, Warangal, India; DEng, Asian Institute of Technology, Thailand

Research Specialist *(Remote Sensing and GIS, Land use change analysis and modeling, spatial analysis and decision support, Interdisciplinary analysis of human - environment interaction)*

4. Grants and Sponsored Research Completed in 2016

Prototyping of Overseas preparation system of Urban and infrastructure Data
Duration: 01-Apr-2014 to 31-Mar-2016
Project Investigators Dr Masahiko Nagai
Sponsor: University of Tokyo
Total Contracted Amount:
(THB) 1,518,720.00

Winter education camp and study tour for JIS Group of institutions
Duration: 01-Jan-2015 to 31-Dec-2016
Project Investigators Nitin Kumar Tripathi
Sponsor: JIS group of institutions, India
Total Contracted Amount:
(THB) 592,000.00

Local Ionospheric scintillation in Asia (LISA)
Duration: 21-Oct-2014 to 31-Dec-2016
Project Investigators Nitin Kumar Tripathi
Sponsor: Asian office of aerospace and R&D
Total Contracted Amount:
(THB) 638,400.00

ADB-RESTEC Project
Duration: 01-Sep-2014 to 30-Oct-2016
Project Investigators: Dr Lal samarakoon
Sponsor: ADB, Remote sensing technology of Japan

Eduction campand study tour for JIS Group of institutions
Duration: 01-Jul-2014 to 31-Jul-2016
Project Investigators: Nitin Kumar Tripathi
Sponsor: United group of institutions, india
Total Contracted Amount:
(THB) 950,000.00

Operational Design of Ontology-based Data retrieval support system
Duration: 01-Apr-2014 to 31-Mar-2016
Project Investigators: Dr Masahiko Nagai
Sponsor: University of Tokyo
Total Contracted Amount:
(THB) 618,156.00

Asian summer school for geo-informatics and issues on sustainable development in Asia
Duration: 01-Sep-2015 to 31-Aug-2016
Project Investigators: Dr Sarawut Ninsawat
Sponsor: Chubu University
Total Contracted Amount:
(THB) 600,000.00

FOSS4G Training
Duration: 15-Aug-2015 to 15-Aug-2016
Project Investigators: Dr Sarawut Ninsawat
Sponsor:
Total Contracted Amount:
(THB) 300,000.00

Geospatial data analysis
Duration: 01-Jun-2015 to 31-May-2017
Project Investigators: Dr Masahiko Nagai, Dr. Apichon Witayangkurn
Sponsor: The University of Tokyo
Total Contracted Amount:
(THB) 1,360,497.00

Development of GPGPU real time tsunami simulation system for RIMES
Duration: 04-Nov-2014 to 31-May-2016
Project Investigators: Dr Masahiko Nagai, Dr Apichon Witayangkurn
Sponsor: Earth system science corporation
Total Contracted Amount:
(THB) 920,000.00

Development of GESTISS web site for international users
Duration: 08-Feb-2015 to 31-Mar-2016
Project Investigators: Dr Masahiko Nagai, Dr. Apichon Witayangkurn
Sponsor: the University of Tokyo
Total Contracted Amount:
(THB) 255,949.00

Goe informatics training
Duration: 20-Oct-2015 to 31-Oct-2016
Project Investigators: Dr. Nitin Kumar Tripathi
Sponsor: UNESCAP
Total Contracted Amount:
(THB) 105,000.00

Asian Summer School for Geo-informatics and issues on Sustainable Development in Asia 2016
Duration: 01-Jul-2016 to 31-Dec-2016
Project Investigators: Dr Sarawut Ninsawat
Sponsor: Chubu University
Total Contracted Amount:
(THB) 450,000.00

Developing GIS Plugins for estimating sugar cane yield by UAV image
Duration: 01-Feb-2016 to 30-Sep-2016
Project Investigators: Dr Sarawut Ninsawat
Sponsor: Mitr Phol Sugarcane Research Center
Total Contracted Amount:
(THB) 300,000.00

Education Workshop & Study Tour
Duration: 01-Jan-2016 to 30-Jun-2016
Project Investigators: Prof Nitin Kumar Tripathi
Sponsor: JIS Group & Downtown University
Total Contracted Amount:
(THB) 760,000.00

5. On-going Grants and Sponsored Research

Goeservivces 4 sustainability
Duration: 01-Sep-2015 to 30-Nov-2017
Project Investigators: Dr Nitin Kumar Thripathi
Sponsor: ERASMUS+University of Saizburg
Total Contracted Amount:
(THB) 2,730,000.00

Education workshop and study tour
Duration: 01-Jan-2016 to 30-Jan-2018
Project Investigators: Dr. Nitin Kumar Tripathi
Sponsor: JIS Group and downtown university
Total Contracted Amount:
(THB) 760,000.00

SRMU Educational camp and study tour 2016 for Sri Ram memorial university, India
Duration: 09-Sep-2015 to 30-Sep-2017
Project Investigators: Dr Nitin Kumar Tripathi
Sponsor: Sr Ram Memorial University
Total Contracted Amount:
(THB) 255,000.00

Asia GIS Dataset Development with Ontology Data
Duration: 01-Apr-2016 to 31-Dec-2018
Project Investigators: Dr Masahiko Nagai, Dr Apichon Witayangkurn
Sponsor: The University of Tokyo
Total Contracted Amount:
(THB) 2,294,014.00

Developing new methods to monitor forest carbon in Asian Tropical forests
Duration: 01-Jun-2016 to 30-Jun-2018
Project Investigators: Prof Nitin Kumar Tripathi
Sponsor: MOFAID France/RFCC Funding
Total Contracted Amount:
(THB) 1,350,000.00

Education Workshop and Study tour
Duration: 15-Jun-2016 to 30-Dec-2018
Project Investigators: Prof Nitin Kumar Tripathi
Sponsor: United Group of Institutions

India
Total Contracted Amount:
(THB) 965,000.00

6. Publications

Papers in Refereed Journal

Prakash Nimbalkar, Nitin Kumar Tripathi (2016). Assessing the Challenges in Successful Implementation and Adoption of Crop Insurance in Thailand. Sustainability. Vol: 8, 1306. Available at: http://www.mdp i.com/20711050/8/12/1306.

C. Mozumder, Nitin K. Tripathi, Losiri C. (2016). Comparing Three Transition Potential Models: A Case Study of Built-up Transitions in North-East India. Computers, Environment and Urban Systems. Vol: 59, 38-49. (IF: 1.5).

Augustinus B. Primawan, Nitin K. Tripathi (2016). The Study of Access Point Outdoor Coverage Deployment for Wireless Digital Campus Network. International Journal of Information and Communication Technology. Inderscience, Listed for publication, http://www.inderscience.com/info/ingeneral/forthcoming.php?jcode=IJICT

Anshul Agarwal, M. S. Babel, S. Maskey, S. Shrestha, A. Kawasaki, Nitin K. Tripathi (2016). Analysis of temperature projections in the Koshi River Basin, Nepal. International Journal of Climatology. Vol: 36, 266-279. Published online in Wiley Online Library (wileyonlinelibrary.com) DOI: 10.1002/joc.4342.

S. S. Bhatti, N. K. TRIPATHI, V. Nitivattananon, M. Nagai (2016). Spatial interrelationships of quality of life with land use/land cover, demography and urbanization. Social Indicators Research. 24 January 2016. Doi: 10.1007/s11205-016-1336-z.

Asamaporn Sitthi, Masaniko Nagai, Matthew Dailey, Sarawut Ninsawat (2016). Exploring Land Use and Land Cover of Geotagged Social-Sensing Images Using Naive Bayes Classifier. Sustainability. Vol: 8.

Chudech Losiri, Masaniko Nagai, Sarawut Ninsawat, Rajendra Prasad Shrestha (2016). Modeling urban expansion in Bangkok Metropolitan region using demographic-economic data through cellular Automata-Markov Chain and Multi-Layer Perceptron-Markov Chain models. Sustainability. Vol: 8.

Muhammad Dalower Hossain, Sarawut Ninsawat, Shulaxan Sharma, Thammarat Koottatep, Yuttachai Sarathai (2016). GIS oriented service optimization for fecal sludge collection. Spatial Informa-tion Research. Vol: 24, 235-243.

Sarawut Ninsawat, Muhammad Dalower Hossain (2016). Identifying Potential Area and Financial Prospects of Rooftop Solar Photovoltaics (PV). Sustainability. Vol: 8.

Papers in Conference Proceedings

Sweta Sinha, Nitin Kumar Tripathi (2016). Hybrid satellite agriculture drought indices: A multi criteria approach to improve crop insurance. Fifth International Conference on Agro-Geoinformatics (Agro-Geoinformatics). Vol: 1. 18-20 July 2016, Tianjin, China. Publisher: IEEE. Available at: http://ieeexplore.ieee.org/document/7577664/.

7. Doctoral Students' Dissertation

An Integrated Geospatial Modeling of Coastal City Growth in Thailand
By: Miss Kritsana Kityuttachai
Supervisor: Prof. Nitin Kumar Tripathi

Characteristics of Total Electron Content (TEC) Variations at Equatorial Ionization Anomaly (EIA) during Space Weather Activities and GPS Point Positioning Performance
By: Mr. Sanit Arunplod
Supervisor: Prof. Nitin Kumar Tripathi

Exploring Land Use and Land Cover of Geo-Tagged Social Sensed Images Using Naive Bayes Classifier Approach
By: Miss Asamaporn Sitthi
Supervisor: Dr. Masahiko Nagai

Sensors and Smarphone based Real-time Heart Monitoring, Alarming and Reporting Systems
By: Miss Priyanka Kakria
Supervisor: Prof. Nitin Kumar Tripathi

8. Masters Students' Theses

Smartphone and BLE Beacon-Based Patient Referral and Context Aware Patient Flow Management
By: Mr. Muhammad Amir Izhar
Supervisor: Prof. Nitin Kumar Tripathi

Gradient and True North Direction by Using Two GPS Receivers
By: Miss Nalinrat Asokbunyarat
Supervisor: Dr. Shinichi Nakamura

Assessing the Urban Fire Vulnerability by Using Remote Sensing and GIS for East District of Yangon Region in Myanmar
By: Miss Thiri Maung
Supervisor: Dr. Masahiko Nagai

Sensitivity Analysis Between Radar Vegetation Index (RVI) and NDVI for Estimating Net Primary Production and Carbon Stock of Mangrove Forest
By: Mr. Bijaya Maharjan
Supervisor: Dr. Sarawut Ninsawat

Determination of the Slope of the Chao Phraya River Bank Using GNSS and Computation of the Flow Rate of the River
By: Mr. Prapas Wanthong
Supervisor: Dr. Shinichi Nakamura

Development of Remote Heart Patient Monitoring and Alert System Using Sensors and Mobile Application
By: Mr. Nutthapong Khangkhun
Supervisor: Prof. Nitin Kumar Tripathi

Patterns Analysis of Deforestation with Socio-Economic and Physical Factors Using GIS Technique in Nan Province
By: Miss Jaruwan Nakpradab
Supervisor: Dr. Sarawut Ninsawat

Subjective Assessment of Quality of Life in Ruessey Keo District, Phnom Penh

City, Cambodia Using the Geographic Information System Approach
By: Miss Boravin Teng
Supervisor: Dr. Sarawut Ninsawat

Sugarcane Density Mapping and Estimation Yield Using UAV Image and OBIA Analysis
By: Mr. Jaturong Som-ard
Supervisor: Dr. Sarawut Ninsawat

Analysis of Driver Behavior in Bangkok by Taxi Probe Data
By: Mr. Gaku Saito
Supervisor: Dr. Masahiko Nagai (Chairperson), Dr. Apichon Witayangkurn (Co-chairperson)

Public Transportation Connectivity and Accessibility in Bangkok by Analysis of Person Trip and GIS Data
By: Miss Anussara Hirunpongchai
Supervisor: Dr. Masahiko Nagai (Chairperson), Dr. Apichon Witayangkurn (Co-chairperson)

Yield Estimation in Longan by Using Remote Sensing and Geographic Information System
By: Miss Khanittha Saengmanee
Supervisor: Dr. Masahiko Nagai

Cloud-Based Near Real-Time Monitoring of Electricity Usage and Human Occupancy Inside Building Using Image Processing and WiFi Log Data
By: Mr. Nguyen Duong Tri Nguyen
Supervisor: Dr. Sarawut Ninsawat

Rapid Assessment of Damages Using Geo-Spatial Techniques for Accurate Post-Disaster Needs Assessment: A Case Study of Cyclone Hud-Hud in Vishakhapatnam, India
By: Mr. Kalyan Munjuluri
Supervisor: Prof. Nitin Kumar Tripathi

Impact of Future Land Use Change and Climate Change on Soil Erosion by Using Remote Sensing and GIS Techniques: A Case of Lam Phra Phloeng Watershed, Nakhon Ratchasima, Thailand
By: Mr. Jagarapu Harsha Sai Chandra Meher
Supervisor: Dr. Sarawut Ninsawat

Geospatial Analysis for Mangrove Forest Cove Changes and Afforestation Site Suitability in Kakinada, Andhra Pradesh, India
By: Mr. Putta Jaya Durga Venkata Sainadh
Supervisor: Prof. Nitin Kumar Tripathi

Biomass Assessment from Combined Optical and SAR Remote Sensing Data in Surat Thani Province, Thailand
By: Mr. Kilaparthi Kiran Kumar
Supervisor: Dr. Masahiko Nagai

Estimation of Irrigation Water Requirement of Paddy Fields in the Minor Season by using Remote Sensing and GIS in Suphanburi, Thailand
By: Mr. Sathi Lava kumar Reddy
Supervisor: Dr. Sarawut Ninsawat

Optimizing Harvest Schedule of Sugarcane Crop using Generic Algorithm through Assimilation of DSSAT-CANEGRO Model with Remote Sensing
By: Mr. Kurapati Penchala Vineeth
Supervisor: Dr. Sarawut Ninsawat

Urban Heat Island Mapping for Bangkok City using Remote Sensing Techniques
By: Mr. Degala Raghu Veer
Supervisor: Dr. Sarawut Ninsawat

Rapid Mapping using UAV and RTK-GNSS
By: Mr. Dasari Ravi Kanth
Supervisor: Prof. Nitin Kumar Tripathi

Soil Nutrient Modelling for Precision Farming by Downscaling of Remote Sensing Data
By: Mr. Sai Krishna Kolasani
Supervisor: Prof. Nitin Kumar Tripathi

Patterns, Hotspots and Determinants Influencing Disease Incidence in Mueang Phayao and Phayao Province, Thailand
By: Mr. Sajja Sravan
Supervisor: Prof. Nitin Kumar Tripathi

Analysis of Shoreline Erosion on Indian Coasts and Global Sea-Level Rise in Visakhapatnam: Impact of Westward Intensification
By: Mr. Kante Sri Teja
Supervisor: Dr. Shinichi Nakamura

Impacts of Ionospheric Storms on Total Electron Content over Thailand
By: Mr. Alluri Varun Varma
Supervisor: Prof. Nitin Kumar Tripathi

Mapping of Marine Chlorophyll-a and Suspended Solid Concentration Using OCM-2 Sensor
By: Mr. Venkata Kasi Viswanath Sureddy
Supervisor: Prof. Nitin Kumar Tripathi

Urban Fire Risk Zonation in Visakhapatnam, India
By: Mr. Chaitanya Kagita
Supervisor: Prof. Nitin Kumar Tripathi

Geospatial Modelling for Future Green City for Visakhapatnam, India
By: Miss Mullapudi Praneetha
Supervisor: Prof. Nitin Kumar Tripathi

3.3.3: SET – TELECOMMUNICATIONS

1. Introduction

A lack of efficient telecommunications networks and the disparity between rural and metropolitan areas in telecommunications capacity are some of the most serious impediments to sustainable development and growth in the Asia-Pacific region. The Telecommunications (TC) field of study aims to foster national development and enhance economic productivity by educating students in the design, implementation and deployment of telecommunications networks and related applications.

Graduates from the master's program form the nucleus for effective high-level technical planning and management operations at their employer organizations. Some of the graduates are engaged in planning, development, and service activities leading to the installation, commissioning, management, design, etc. of value-added systems. Given the important role of our graduates in the development of the telecommunications sector, the learning is of significant benefit to the users of telecommunications services within the region. Graduates of the doctoral program play key roles in enhancing the level of education and research in the national universities of the region, and promote and strengthen the R&D potential of emerging regional manufacturing industries.

Dual Degree Program

In addition to the standard program, TC offers dual degree programs in cooperation with two European universities. Students in a dual degree program receive two master's or doctoral degrees, one from AIT and one from the partner university.

Master Degrees:

- Telecom SudParis, France

Doctoral Degrees:

- Centre for Wireless Communications, University of Oulu, Finland

Partnerships

Students in Telecommunications have many opportunities to collaborate with specialists from industry, non-governmental organizations and other universities.

1. TSF - Telecoms Sans Frontires is a United Nations non-governmental organization which provides emergency telecommunication services during disaster response efforts. Students in Telecommunications may volunteer to work with TSF in real disaster situations.

2. Telecommunications hosts a certified training center for Nokia Symbian OS Mobile Application Development. Telecommunications also maintains active research and student exchange collaborations with a number of universities around the world:

- Center for Personal Communication (CPK), Aalborg University, Denmark
- Helsinki University of Technology (HUT), Finland
- Brunel University, UK
- University of Alberta, Canada
- University of Tokyo, Japan
- University of Saskatchewan, Canada
- University of Texas-Dallas, USA
- Mie University, Japan
- National Institute of Information and Communications (NICT), Japan
- Yokosuka Research Park (YRP), Japan
- Tohoku University, Japan
- Tokyo University of Agriculture and Technology, Japan
- Tongji University, China Hongkong Polytechnic University, China

2. Research Facilities and Laboratories

Today's fast-booming world of Telecommunications and Computer networking plays a significant leadership role. To support this achievement, the Telecommunications field of study puts the effort to continue the development of telecommunications technologies and systems.

Telecommunications encompasses several key areas of electrical engineering: digital signal processing, communications theory, computer engineering, controls, and optics. Harnessing the leading technologies in these areas, the dynamic field of telecommunications plays a defining role in the information technology revolution that we are experiencing today. Specific applications include cellular mobile communications, wireless local area networks (WLANs), wireless sensor networks, optical fiber networks, radar, just to name a few. It covers a wide variety of research in telecommunications ranging from modeling, analysis wireline and wireless systems to application and protocol development. Its research subjects are in advanced wireless communications, coherent optical communications; congestion control, PHY, MAC, Networking design, error correction and detection methods; mobile and Internet traffic studies; multiple access strategies for cellular mobile, satellite systems, and cabled networks; network performance analysis, planning and design, and signal processing and statistical signal processing.

Communications Labs (CL)

The Communications lab is used to perform experiments courses under Signal and Systems, Communications Electronics, Digital Transmission Technology and Digital Signal Processing. Test bench equipment includes analog and digital oscilloscopes, function generators, analog and digital Spectrum analyzers, Digital sampling oscilloscopes and DSP cards and workstations which have simulation applications like MATLAB.

Computer Laboratory (PCL)

There are two Computer Laboratories in Telecommunications Program. One is for Senior students and one is for Junior Students. All computers are latest powerful computers.

TC Library

In Telecommunications Program, there is a small library, from where students can borrow telecommunication related journals, manuals and reference books.

3. Faculty and Research Staff

Full-time Faculty

TEERAPAT SANGUANKOTCHAKORN, BEng, Chulalongkorn Univ, Thailand; MEng, DEng, Tokyo Institute of Technology, Japan.

Associate Professor (*Data Communications; Broadband Integrated Services Digital Networks; Multimedia Communications and Systems; Network Quality of Service)*

ATTAPHONGSE TAPARUGSSANAGORN, B.Eng, Chulalongkorn University, Thailand, M.Sc., Technische Universitat Kaiserslautern, Germany, D.Tech., University of Oulu, Finland.

[Signal processing, statistical signal process, i.e., detection and estimation techniques for various types of applications including, PHY layer advanced wireless communications, wireless sensor networks, internet of things]

Visiting and Adjunct Faculty

R. M. A. P. RAJATHEVA, B.Sc. Hons. (Eng), Moratuwa Univ, Sri Lanka; M.Sc., Ph.D. (Electrical and Computer Eng), Univ of Manitoba, Canada.

Associate Professor *(Digital and Mobile Communications, Cooperative Diversity, Relay Systems, OFDMA Resource Allocation, Cognitive Radio: Detection /Estimation Techniques, Space Time Processing-MIMO Systems, Distributed Video Coding (DVC)*

POOMPAT SAENGUDOMLERT, BSE, Princeton Univ; MS, PhD, Massachusetts Inst of Tech, USA

Associate Professor [*Communication theory, optical networks, resource allocation problems, and array processing; Recent research activities have focused on optical network designs based on existing infrastructure networks and communications for disaster management]*

ANTTI TÖLLI, Master of Science in Engineering, University of Oulu Oulu, Finland, Major: telecommunications, minors: electronics and signal processing**, Doctor** of Science in Technology, University of Oulu Oulu, Finland, Major: telecommunications, minor: digital signal processing

Title of Docent (Adjunct Professor) *[Radio Resource Management for Future Wireless Communications Systems Resource allocation and interference management for Multiuser MIMO cellular systems]*

4. Grants and Sponsor-ed Research Completed in 2016

-

5. On-going Grants and Sponsored Research

Duration: March-2016 to March-2017
Project Investigators: Dr Attaphongse Taparugssanagorn
Collaboration with: intERLab
Sponsor: The National Broadcasting and Telecommunications Commission (NBTC), Thailand
Total Contracted Amount:
(THB) 3,784,461.60

6. Publications

Papers in Refereed Journal

Bipun M. P., Attaphongse T. (2016). Performance Analysis of the Effect of Non-Linear Low Noise Amplifier for Wideband Spectrum Sensing in the Poisson Field of Interferers. Journal of Computer Networks and Communications, Hindawi Publishing Corporation. 1 December 2016. Article ID 4368619, 12 pages. SCOPUS citation: 0

Papers in Conference Proceedings

Nattakorn P., Teerapat S. (2016). Delay Analysis of ARQ Protocol for Energy-Efficient Transmission in WBAN. The 31st International Conference on Information Networking (ICOIN2017). 11-13 January 2017, Da Nang, Viet Nam. Korean Institute of Information Scientists and Engineers (KICs), IEEE communication Society, IEEE Co.

Nattakorn P., Teerapat S. (2016). Packet Size Optimization for Energy-Efficient 2-hop in Multipath Fading WBAN. The 22nd Asia-Pacific Conference on Communications (APCC2016). 25-27 August 2016, Yogyakata, Indonesia. IEEE Indonesia Section

Zar C. P., Attaphongse T. (2016). Hybrid Analog-Digital Downlink Beamforming for Massive MIMO System Using Uniform and Non-Uniform Lin. International Conference on Electrical Engineering/Electronics, Computer, Telecommunications and Inf. June-July 2016. Publisher: ECTI.

-

2. Research Facilities and Laboratories

Today's fast-booming world of Telecommunications and Computer networking plays a significant leadership role. To support this achievement, the Telecommunications field of study puts the effort to continue the development of telecom-munications technologies and systems. It covers a wide variety of research in telecommunications ranging from modeling, analysis wire line and wireless systems to application and protocol development. Its research subjects are in coherent optical communications; congestion control, ATM, and B-ISDN networks; error correction and detection methods; mobile and Internet traffic studies; multiple access strategies for cellular mobile, satellite systems, and cabled networks; network performance analysis, planning and design; and speech processing. Its research specializations are in broadband networks; network planning; Switching systems; telecommunications management in collaboration with the School of Management; telematics; and transmission systems.

Transmission and Switching Lab (TSL)

The Transmission and Switching lab is equipped with Nokia Digital Switching Exchange DX200 (DX220, DX210) that supports PSTN and ISDN. There are also several telephone switches, traffic simulators, protocol analyzer, PDH/SDH (STM1 & STM4) transmission systems, fiber optic line equipment, transmission line analyzer, error rate meter which are available for experiment in switching, transmission and internetworking. The switching and transmission systems are integrated as real telecommunications network. Among the applications whose study has been made possible by these systems are Operation and Maintenance, performance measurements of real narrowband and broadband telecommunication networks, as well as new services.

Network Planning Lab (NPL)

High performance computer aided network planning tools are supported by several workstations at the Network Planning lab. This lab provides hands-on experience design and optimization in radio network, fixed network and fiber optical network.

Wireless Lab (WL)

The main purpose of the Wireless laboratory is for measurement and performance analysis. It is equipped with Modulation and Error rate measurement meters, Simulation software like SATSIM, which was developed by the students, is a simulation package to calculate the sub-satellite points of a LEO/ MEO/GEO and its orbital parameters. It also displays graphically on a two-dimensional earth map the instantaneous position and path traced by the satellite (Multi orbit and Multi satellite). Another is NMS/X, is a measurement system for GSM, DCS and NMT networks tracing, capable of measuring up to four networks simultaneously. The results are used for benchmarking service quality of operational cellular networks. These results can be analyzed and can be used for tuning the network parameters in NPS/X.

Communications Labs (CL)

The Communications lab is used to perform experiments courses under Signal and Systems, Communications Electronics, Digital Transmission Technology and Digital Signal Processing. Test bench equipment includes analog and digital oscilloscopes, function generators, analog and digital Spectrum analyzers, Digital sampling oscilloscopes and DSP cards and workstations which have simulation applications like MATLAB.

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Visiting and Adjunct Faculty

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Associate Professor *(Digital and Mobile Communications, Cooperative Diversity, Relay Systems, OFDMA Resource Allocation, Cognitive Radio: Detection /Estimation Techniques, Space Time Processing-MIMO Systems, Distributed Video Coding (DVC)*

POOMPAT SAENGUDOMLERT, BSE, Princeton Univ; MS, PhD, Massachusetts Inst of Tech, USA

Assistant Professor [*Communication theory, optical networks, resource allocation problems, and array processing; Recent research activities have focused on optical network designs based on existing infrastructure networks and communications for disaster management]*

ATTAPHONGSE TAPARUGSSANAGORN, B.Eng, Chulalongkorn University, Thailand, M.Sc., Technische Universitat Kaiserslautern, Germany, D.Tech., University of Oulu, Finland.

[Smart energy grids: optimal energy scheduling, smart grid communications using cognitive radio based, spectrum sensing for cognitive radio systems, MIMO-OFDMA cooperative relay systems, cognitive radio based wide coverage rural broadband on TV white spaces, Resource allocation for MIMO-OFDMA systems, Digital image processing.]

4. Grants and Sponsor-ed Research Completed in 2016

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5. On-going Grants and Sponsored Research

-

6. Publications

Papers in Refereed Journal

Bipun M. p., Attaphongse T. (2016). Performance Analysis of the Effect of Non-Linear Low Noise Amplifier for Wideband Spectrum Sensing in the Poisson Field of Interferers. Journal of Computer Networks and Communications, Hindawi Publishing Corporation. 1 December 2016. Article ID 4368619, 12 pages. SCOPUS citation: 0

Papers in Conference Proceedings

Nuttakorn P., Teerapat S. (2016). Delay Analysis of ARQ Protocol for Energy-Efficient Transmission in WBAN. The 31st International Conference on Information Networking (ICOIN2017). 11-13 January 2017, Da Nang, Viet Nam. Korean Institute of Information Scientists and Engineers (KICs), IEEE communication Society, IEEE Co.

Nuttakorn P., Teerapat S. (2016). Packet Size Optimization for Energy-Efficient 2-hop in Multipath Fading WBAN. The 22nd Asia-Pacific Conference on Communications (APCC2016). 25-27 August 2016, Yogyakata, Indonesia. IEEE Indonesia Section

Zar C. P., Attaphongse T. (2016). Hybrid Analog-Digital Downlink Beamforming for Massive MIMO System Using Uniform and Non-Uniform Lin. International Conference on Electrical Engineering/Electronics, Computer, Telecommunications and Inf. June-July 2016. Publisher: ECTI.

7. Doctoral Students' Dissertation

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8. Masters Students' Theses and Research Studies

Minimizing Call Blocking Probability Using the Cheapest Cost Network Selection Algorithm in Heterogeneous Wireless Networks
By: Miss Seng San Aung
Supervisor: Dr. Teerapat Sanguankotchakorn

Oblivious Routing Optimization in Wireless Mesh Networks
By: Ms. Nant Chan Nyein Thu
Supervisor: Dr. Teerapat Sanguankotchakorn

A Study of Mobile Satellite Communication Over Fading Channels
By: Mr. Thang San Muang
Supervisor: Dr. Teerapat Sanguankotchakorn (Chairperson), Dr. Shinichi Nakamura (Co-chairperson)

Flexible Wireless Communication Schemes for the Internet of Things
By: Miss Shikha Saraf
Supervisor: Dr. Attaphongse Taparugssanagorn

Hybrid Analog-Digital Downlink Beamforming for the Massive MIMO System Using Uniform and Non-Uniform Linear Arrays
By: Miss Zar Chi Phyo
Supervisor: Dr. Attaphongse Taparugssanagorn

Improved Orthogonal Frequency Division Multiplexing and Time Difference of Arrival Based Indoor Positioning System
By: Mr. Imran Akbar Khan
Supervisor: Dr. Attaphongse Taparugssanagorn

Packet Size Optimization for Energy-Efficient 2-Hop and Time Diversity in Multipath Fading for Wireless Body Area Network
By: Mr. Nattakorn Promwongsa
Supervisor: Dr. Teerapat Sanguankotchakorn

Performance Analysis of the Effect of Non-Linear Low Noise Amplifier for

Wideband Spectrum Sensing in the Poisson Field of Interferers
By: Mr. Bipun Man Pati
Supervisor: Dr. Attaphongse Taparugssanagorn

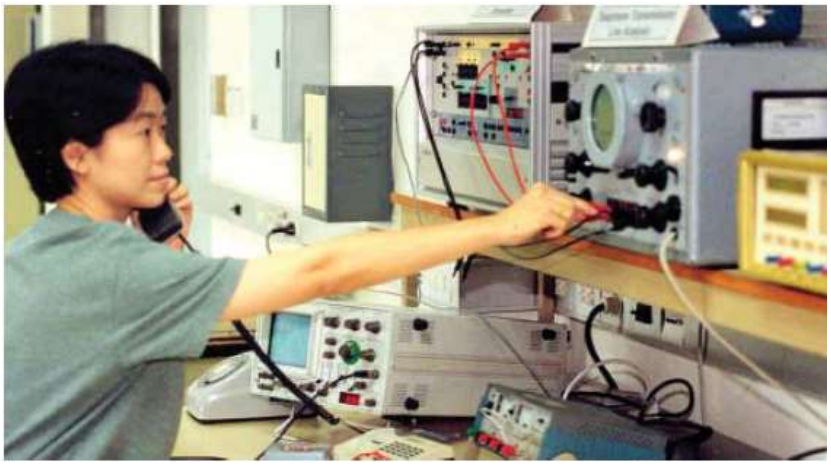
Output Power Variation of an Ambient Radio Frequency Energy Harvester due to its Mobility Taking Path Loss, Multipath Fading, Shadowing and Doppler's Effect into Account
By: Mr. Nuwan Dananjaya Joseph Hettiarachchi
Supervisor: Dr. Teerapat Sanguankotchakorn

Virtual Network Function Placement for Service Function Chain in Data Center Network
By: Miss Hnin Pann Phyu
Supervisor: Dr. Teerapat Sanguankotchakorn

Interference Suppression using Adaptive Filtering Techniques: A Case Study of Speech Signals
By: Mr. Amit Prasad Nayak
Supervisor: Dr. Attaphongse Taparugssanagorn

The Opportunities of the Random Access Channel Protocols over Massive M2M Communications
By: Mr. Francois Charles Roland Manguin
Supervisor: Dr. Teerapat Sanguankotchakorn

3.3.4: SET – INFORMATION AND COMMUNICATIONS TECHNOLOGIES



1. Introduction

Information and Communications Technologies field is a newly established area of study in response to the needs for the offering of a curriculum selectively drawn from the curricula of Telecommunications (TC), Computer Science, and Information Management (CSIM). With strong emphasis on communications aspects rather than on the aggregation of hardware, software, networks, equipment and related industries - ICT recognizes the important role of information services and applications in the creation of a complete ICT infrastructure.

The Information and Communications Technologies (ICT) interdisciplinary program provides students with the opportunity to master a breadth of knowledge in a wide range of technologies, including:

- Information infrastructure (telecommunication networks, transmission technologies, switching and routing);
- Information technology (operating systems, programming languages, information storage and retrieval);
- Applications (e-services, knowledge creation and knowledge dissemination);
- Integration of communications, information services and applications with a national ICT infrastructure. By educating students in this broad array of technologies, the ICT program promotes the emergence of effective national ICT infrastructures for accelerated social and economic development. ICT graduates at AIT are prepared to serve the varied needs of the higher-education, public and private sectors, as well as to play a leading role in the sustainable development of the region and its integration into the global economy.

2. Research Facilities and Laboratories

There is a rapidly growing and constantly evolving interest in ICT throughout the academia and society. To support this, the evolution and the benefits of ICT in our lives, the ICT field of study at AIT continues to research and develop of ICT. The field of study covers a wide variety of research supported by the body of faculty consisting of a multi-professional team of international experts in telecommunication, computer science, educational technology and related fields.

The faculty has a strong academic background ranging from wireless and optical networks, through hardware and software, to web education and other e-services.

Research subjects include those on ICT applications (e-services such as e-learning, e-health, e-governance, rural development, knowledge creation and knowledge dissemination); on the information technologies (e.g. operating systems, programming languages, information storage and retrieval); on the communication infrastructure (e.g. networks, transmission technologies, switching and routing). Research specializations are in adaptive technologies; computer-supported collabo-ration; Home networking; ICT security; online communities; and voice over IP. The ICT area of study shares the research facilities and laboratories of the Telecommunications field of study.

3. Faculty and Research Staff

The ICT Field of Study draws from the faculty and research staff of the Computer Science, Information Management, Remote Sensing & Geographic Information Systems, and Telecommunications Fields of Study.

Adjunct Faculty

TEERAWAT ISSARIYAKUL, B.Eng. Thammasart University, Thailand, M.Eng. Asian Institute of Technology, Thailand, Ph.D. University of Manitoba, Canada.

Assistant Professor [*Markov-based modeling and Analysis; Markov Decision Process, protocol optimization, Cross-layer analysis in cognitive radio networks, scheduling algorithms centralized wireless networks, medium access control protocols in single-hop and multi-hop distributed wireless networks, model analysis using stochastic domination and super modularity properties]*

From Telecommunications Field of Study

TEERAPAT SANGUANKOTCHAKORN, **Associate Professor**

R M A P RAJATHEVA, **Visiting Faculty**

POOMPAT SAENGUDOMLERT, **Adjunct Faculty**

From Computer Science and Information Management Fields of Study

KANCHANA KANCHANASUT, **Professor**

PHAN MINH DUNG, **Professor**

SUMANTA GUHA, **Professor**

MATTHEW N. DAILEY, **Associate Professor**

VATCHARAPORN ESICHAIKUL, **Associate Professor**

PAUL JANECEK, **Visiting Faculty**

From Remote Sensing and Geographic Information Systems Field of Study

NITIN KUMAR TRIPATHI, **Professor**

KIYOSHI HONDA, **Professor**

SARAWUT NINSAWAT, **Assistant Professor**

1. Masters Students' Theses and Research Studies

Using an Adopted Measurement Model to Evaluate the Effectiveness of Marketing on Social Networks
By: Mr. Nuttapong Tuenchitt
Supervisor: Dr. Teerapat Sanguankotchakorn

An Evaluation of the Processes and Technologies for Managing Statistical Metadata
By: Miss Gangoda Gamachchige Bhagya Maheshi
Supervisor: Dr. Matthew N. Dailey

Named Data Networking (NDN) Based Smart Home Lighting Solution
By: Miss Kalumith Upeka Madhavi De Silva
Supervisor: Prof. Kanchana Kanchanasut

Autonomous Navigation in Mobile Telepresence Robots using a Kinect Sensor and Robot Operating System
By: Mr. Niraj Bhujel
Supervisor: Dr. Teerapat Sanguankotchakorn

Investigation of the use of Bandpass Filter for Lifting Wavelet Transform (LWT) with (SPIHT) Set Partitioning in Hierarchical Tress of Image applied in (IoT) Internet of Things
By: Mr. Tun Win
Supervisor: Dr. Attaphongse Taparugssanagorn

Chapter 4: SCHOOL OF ENVIRONMENT, RESOURCE AND DEVELOPMENT

1. Mission, Vision, and Core Values

SERD Mission

The School of Environment, Resources and Development is committed to excellence in graduate education as well as research and outreach activities. Through its academic programs and outreach units, SERD has been working towards capacity building and human resource development in the areas of resource management, development studies, and energy and environmental management.

SERD responds to regional needs by mobilizing and enhancing capacities for socially, economically and environmentally sound development in partnerships with public and private sectors. The School's interdisciplinary approach integrates technological, natural and social sciences.

SERD Vision

SERD will continue its leadership role in offering excellent academic programs relevant to regional needs.

SERD research will be concentrated toward focal areas and are to be conducted by core teams.
SERD outreach will be community service oriented.
SERD Programs will be consolidated and financially viable. The School activities including the students, staff, faculty and curricula, will be subject to quality assessment.

SERD Core Values

- Interdisciplinarity
- Innovativeness
- Excellence
- Responsiveness

3. Thematic Groups, Fields of Study and Multidisciplinary Programs

Through a rice and varied curriculum, students have many opportunities for intellectual growth. The School of Environment, Resource and Development and Technology offers degree and non-degree programs in three thematic groups:

Department of Food, Agriculture and Bio resources

- Agri Business Management
- Agricultural Systems and Engineering
- Aquaculture and Aquatic Resources Management
- Food Engineering and Bioprocess Technology

Department of Energy, Environment and Climate Change

- Climate Change and Sustainable Development
- Energy
- Environmental Engineering and Management
- MBA in Energy Business (SERD and SOM)
- Urban Water Engineering and Management (SERD and SET)

Department of Development and Sustainability

- Disaster Preparedness, Mitigation and Management (SERD and SET)
- Gender and Development Studies
- Natural Resources Management
- Pulp and Paper Technology

- Regional and Rural Development Planning
- Urban Environmental Management

Professional Master Programs (1 Year)

- Environmental Engineering and Management (in Vietnam)
- Energy Business Management (SERD and SOM)
- Urban Management (with HCMUARC)

3. Research Facilities and Laboratories

SERD provides laboratory, computer and information technology (IT) facilities for education and learning for graduate students, and research activities of graduate students, faculty, and sponsored and contracted projects.

SERD has six research laboratories in Agricultural Systems and Engineering, Aquaculture and Aquatic Resources Management, Food Engineering and Bio-process Technology, Environmental Engineering and Management,

Energy, and Pulp and Paper Technology, and each laboratory is unique with modern equipment, excellent guidance and assistance, and provides safe working facilities and environments to carry out experimental studies and research.

IT facilities are provided for everyone to attend their academic and research related activities. There are three computer centers maintained by the SERD at the SERD Main building (two computer laboratories), Agriculture and Food Engineering building and Energy Building which provides convenient working environment, with all the necessary facilities. These are open twenty-four hours a day for use by students, staff and faculty. Full internet access is available to these PCs through a high speed network backbone which connects all academic buildings including the residence halls. A large number of PC software packages for applications such as word-processing, spreadsheets, network communications, and multimedia and file transfer utilities are available. High quality laser printers, scanning and CD writing facilities are available for students' uses.

Furthermore, laboratories also have computer facilities, which enhance the productivity of the teaching and research activities of the school.

4. School Governance

Dean of School

RAJENDRA PRASAD SHRESTHA, BSc, Haryana Agri. Univ, India; MSc, DTechSc, AIT, Thailand.

Professor (Sustainable Land Management; Natural Resources Degradation and Environmental indicators; Landuse-climate, Geoinfo-rmatics)

4.1: SERD – DEPARTMENTS OF FOOD, AGRICULTURE AND BIORESOURCES

Background

The global food system today is beset by serious challenges and risks. Food demand is on rise due to population growth and changing consumption patterns a production and prices have become more volatile; hunger and poverty levels remain high and unsustainable practices exacerbate environmental challenges. The fundamental need to boost productivity, especially of small to medium holders, increase access to markets, reduce risks, boost rural employment and provide environ - mental services come in a context where managing the agriculture, livestock and aquaculture practices is challenged by accelerating climate change, population growth, urbanization, environmental degradation, increased market risk, tightening resource constraints, a growing need for engagement of the private sector in delivering public goods, too-slow progress on raising rural incomes and too-slow progress on improving nutrition. World food production needs to be multifold in coming decades, with far less resources (land, water, farmers, energy) available than today. Sustainable agricultural, livestock and aquaculture production in developing countries are facing ever increasing challenges from high use rate of synthetic fertilizers, over reliance on pesticides and antibiotics, very low adoption of biological pest control, low use rate of animal and green manure and low level of farm diversification. Similarly, food safety is receiving heightened attention worldwide as the important links between food and health are increasingly recognized. Improving food safety is an essential element of improving food security, which exist when populations have access to sufficient and healthy food through the development of processing industries for sustainable and safer food product development. At the same time, as food trade expands throughout the world, food safety has become a shared concern among both developed and developing countries and need urgent attention farm-to-fork level. Academic and research activities at the Department of Food, Agriculture and Bio resources focus on problem- solving and creating work-ready graduates who are able to take real-life challenges.

Academic Programs Multidisciplinarity is at the very core the department's teaching, research and outreach activities. The students come from multiple disciplines - engineering, technical science, bioscience, social sciences and management.

Department of Food, Agriculture and Bioresources are:

1. Agribusiness Management (ABM)
2. Agricultural Systems and Engineering (ASE)
3. Aquaculture and Aquatic Resources Management (AARM)
4. Food Engineering and Bioprocess Technology (FEBT)

4.1.1: SERD – AGRIBUSINESS MANAGEMENT

1. Introduction

Agriculture plays a vital role in the economic growth of many countries especially developing countries of Asia including Thailand, China, India, Vietnam, Malaysia etc. Due to the growing industrialization the importance of agriproducts has increased several-folds. The food and food-products import-export policies play important role in the overall development of any country and the world as a whole.

In developing countries, since last 25 years, majority of the young people educated, came from agriculture community or from the similar background. But, due to many reasons they have not been able to compete for available jobs, which demand specialized skills and knowledge. Even in their attempts to set up small entrepreneurial activities in non-farm sector they face many problems generally not encountered by such youths in urban areas. All these rural youths can now be supported for new opportunities of entrepreneurship in business activities related to Agriculture. They have the basic understanding of agriculture, which can be utilized for promotion of business enterprises revolve around agricultural activities.

Rationale

As the nature of rural economy of many developing countries of Asia-Pacific region shifts from subsistence farming to commercial food enterprises, a new breed of agribusiness professionals is needed to manage this transformation. The proposed program will cater the unique needs of agribusiness professionnals, which comprise of knowledge and skills in elements of agriculture sector policy issues, technology, marketing and finance. Agribusiness professionals are needed in several sectors, including in multinational companies involved in corporate farming, food processing, packaging and marketing, agricultural finance institutions, agricultural cooperatives, animal feed industry, biotechnology industry, fertilizer and pesticide industry, irrigation and mechanical equipment manufacturing, medicinal plants/herbs, and government-initiated rural/agricultural development schemes.

The agri-business management program builds on long standing strengths and experience in research, and internal and external postgraduate teaching in the fields of agricultural production, preservation, processing, agro- and food-industry management and market-ing, and in agricultural development.
The program focuses on the potential for and contribution of the agribusiness industry in developing economies. It is aimed at enhancing small business entrepreneurship among primary producers of agri-food products, and traders and other market intermediaries in the value chain. The course is appropriate for entrepreneurs themselves and also for people working in the public sector and non-governmental organizations. Entrepreneurs and others will be enabled to take advantage of opportunities within the agri-food and related sectors, and increase the contribution of these sectors within public and national objectives.

Objectives

Specific objectives of the Masters Program in Agribusiness Management are:

- To train students, academics, researchers and professionals, to develop skills and practices in the area of good agricultural production, appropriate value addition, systematic marketing, food-chain supply and global trade.

- To enhance the sustainability and capability of agricultural enterprises by providing trained students with knowledge of inter-national standards on food safety and traceability in agricultural production, local and global trade policies etc.

2. Faculty and Professional Staff

Faculty

DR. ANIL KUMAR ANAL

Associate Professor, Food Engineering & Bioprocess Technology Field of Study.

(Agriculture and Food Biotechnology; Bio nanotechnology; Functional Properties of Proteins and Polysaccharides; Food Colloids and Biopolymers; Encapsulation and Targeted Delivery of Biomolecules)

DR. JOHN K.M. KUWORNU

***Associate Professor** in Agribusiness Management*

(Food marketing channels, Commodity Futures Markets, Agricultural Policy, Food Security, Climate Change)

DR. PEEYUSH SONI

Associate Professor, Agricultural Systems & Engineering Field of Study.

(Terramechanics; Agricultural Instrumentation; Controlled Environment Agriculture; Agricultural Systems Analysis; Analytical Techniques)

DR. AVISHEK DATTA

Associate Professor (*Agricultural Environments, Crop Productivity Management, Crop Eco-physiology and Modeling, Advanced Agricultural Experimentation)*

Adjunct Faculty

PROF. GANESH. P. SHIVAKOTI

Professor, Agricultural Systems & Engineering and Natural Resources Management Fields of Study.

(Agricultural Development and Policy Analysis; Resource Development; Farming Systems; Natural Resources Management)

3. Grants and Sponsored Research Completed in 2016

Enhancing Productivity and Market Linkages – Improving the Livelihoods and Food Security of Smallholders in Asia
Duration: May 2013 to April 2016
Project Investigator(s): Gopal B. Thapa, Ganesh P. Shivakoti, Peeyush Soni, Avishek Datta
Sponsor: USAID/RDMA
Total Contracted Amount (US$): 899,337.00

4. On-going Grants and Sponsored Research

Bargaining Power and Market Risk
Duration: 2-Feb-2016 to 31-Jul-2016
Project Investigator(s): Dr John K.M.Kuwornu
Sponsor: AIT Research Initiation Grant
Total Contracted Amount (THB):50,000.00

5. Publications

Book

Kuwornu J. K. M. (2016). Assessment of the vulnerability and adaptation of food supply chains actors to climate change. Delaware, USA. (In progress).

Book Chapters

Kuwornu J. K. M. (2016). Chained to Sustainable Development Goals? Changing role of entities for enhanced resilience along. (Editors from ERIA but no full details yet). Accepted in 2016 and forthcoming.

Papers in Refereed Journal

Mallick S., Shivakoti G. P., Datta A., Kuwornu J.K.M., Asbrouck J. V. (2016). Value chain analysis of bitter gourd (Momordica charantia L.) seed marketing system in Bangladesh. International Journal of Value Chain Management. (Accepted in 2016 and in Press).

Porgo M., Kuwornu J. K. M., Zahonogo P., Jatoe J. B. D. , Egyir I. S. (2016). Credit constraints and labour allocation decisions in rural Burkina Faso. Agricultural Finance Review. (Accepted in 2016 and in press).

Emmanuel K. A., Kuwornu J. K.M., George T. M. K. (2016). Effect of mechanisation use intensity on the productivity of rice farms in southern Ghana. Acta Agriculturae Slovenica. Vol: 107, 439 – 451.

Asante S. B., Osei A. Y. B., Kuwornu J. K.M. (2016). Smallholder maize farmers food consumption expenditures in Ghana: The mediating role of commercialization. The Journal Agris On-line Papers in Economics and Informatics. Vol: 8, 13 – 27.

Antwi D. E., Kuwornu J. K. M., Onumah E. E., Bhujel R. C. (2016). Productivity and constraints analysis of commercial tilapia farms in Ghana. Kasetsart Journal of Social Sciences.
Doi.org/10.1016/j.kjss.2016.12.001.

John K. M. K., Emmanuel K. A., George T. M. K. (2016). Access and Intensity of Mechanisation: Empirical Evidence of Rice Farmers in Southern Ghana. Brazilian Archives of Biology and Technology. (Accepted in 2016, and In press).

Papers in Conference Proceedings

Amevenku F. K. Y., Seini A. W., Osei A. Y.B., Kuwornu J. K. M., Anim H. S. (2016). Livelihood vulnerabilities of fishing households in the volta basin of Ghana. Fishadapt: a global conference on climate change adaptation for fisheries and aquaculture. Bangkok, Thailand, 8-10 August 2016.

Kemeze F. H., Kuwornu J. K. M., Miranda M. J., Amin H. S. (2016). Optimal Management of Runoff Reservoir Supply: The Case of Tono Reservoir in Northern Ghana. Applied & Agricultural Economics Association. Boston, USA. July 31-August 2, 2016.

Alhassan I. S., Kuwornu J. K. M., Osei Y. B. A. (2016). Gender dimension of vulnerability to climate change and variability: Empirical evidence of small hold. Annual Interdisciplinary Conference: Science and Technology for Development. University for Development Studies, Organized by the Institute for Interdisciplinary Research and Consultancy Services, University for Development Studies, Navrongo, Ghana. 1 - 2 September 2016.

6. Masters Students' Theses and Research Studies

Impact of Contract Farming on Smallholder Asparagus Farmers' Income in Kanchaburi Province, Thailand.
By: Miss Rutanaporn Keawkhonkhan
Supervisor: Dr. Avishek Datta

Adoption of ICTs to Enhance Access Level and the Quality of Agricultural Information among Farmers in the Semi-Arid Region of Rajasthan in India
By: Mr. Ishwar Singh Parmar
Supervisor: Dr. Peeyush Soni

Supply Chain Analysis and Market Efficiency of Mango (Mangifera indica) in West Java Province of Indonesia
By: Mr. Agus Hadiarto
Supervisor: Dr. Anil Kumar Anal

Behavior of Young-Educated Adults to wards Coffee Culture and Consumption Patterns: A Case of Allahabad City, India
By: Miss Saumya Gupta
Supervisor: Dr. Peeyush Soni

Supply Chain of Fresh Milk from Producer to Consumer: A Case Study of Allahabad, India
By: Mr. Pawan Kumar Yadav
Supervisor: Dr. Peeyush Soni

4.1.2: SERD – AGRICULTURAL SYSTEMS AND ENGINEERING

1. Introduction

This field of study emphasizes on sustainable agricultural and related technologies development through holistic approach for efficient food production for small holder agriculture.

2. Research Facilities and Laboratories

Agricultural Systems and Engineering (ASE) Laboratory caters to researchers, which address sustainability in agricultural production. The facilities are capable for implementing excellent agronomic and engineering researches on soils, water and plant, such as, plant growth and development, soil fertility and management, integrated pest management, plant water requirement, etc. Facilities to conduct researches on terramechanics, ergonomics and tillage are also available. The engineering aspects of agricultural production are dealt with through innovations and development of machines and equipment to enhance productivity and reduce human drudgery. These innovations are constructed at the ASE workshop.

Major laboratory equipment include a Spectra UV- VIS double PC double beam (scanning) flame photo meter; Digestion block; Trinocular Microscope MBL 2100; Stereo zoom microscope Model MSZ 5400; Porometer type AP4 Light meter WP4 Dewpoint Potential Meter; Mini-disk Infiltrometer Soil hydraulic conductivity; Tensio- Meter; Soil bin carriage system; Sony CXC- 390 1/3" 3 CCD Camera; Spider 8 data logger; National Instrument DAQ; NI Vision Module; Dynamic strain amplifier; and an SC-900 Soil compaction meter.

The SERD Computer Lab III in the Agricultural and Food Engineering Building has various kinds of software packages for system analysis and simulation, including DSSAT (Decision Support System for Agrotechnology Transfer), Arc View etc. A Computer-Aided Design (CAD) workstation is also available for training the design of agricultural equipment. There is a machine workshop with facilities for fabricating various types of laboratory and experimental apparatus and models. Consultation and fabrication of different types of transducers can be provided. About 20 high-end PCs connected to the campus-wide Ethernet and ATM network and a high quality laser printer, scanning and CD writing facilities are available for students' uses.

3. Faculty and Professional Staff

PEEYUSH SONI; BEng (MPUAT, India); MS, DEng (AIT, Thailand)

Associate Professor *(Instrumentation and Measurement Techniques; Design & Testing of Agricultural Machinery; Precision Agriculture; Agricultural Systems Analysis; Analytical Techniques & Decision Tools for Agribusiness)*

AVISHEK DATTA; B.Sc, M.Sc. (B.C. State Agri. Univ., India); PhD, University of New England, Australia

Associate Professor (*Agricultural Environments, Crop Productivity Management, Crop Eco-physiology and Modeling, Advanced Agricultural Experimentation)*

JOHN K.M. KUWORNU: B.Sc (University of Ghana), M.Sc., PhD (Wageningen University, The Netherlands)

Associate Professor (Agribusiness Management, Agricultural Economics & Management)

Visiting, Adjunct Faculty/Affiliated Faculty

GANESH P. SHIVAKOTI; BS, MS, (Udaipur Univ., India); PhD (Michigan State Univ., USA)

Professor *(Agricultural Development and Policy Analysis; Resource Development; Farming Systems; Natural Resources Management)*

Professional Staff

WATTANAPORN MESKUNTAVON, DTechSc

Senior Laboratory Supervisor *(Crop Modeling; Farm Management; Laboratory Analyses of Soil and Plants)*

4. Grants and Sponsored Research Completed in 2016

Technological development for climate resilience and efficient use of resources for the agricultural sector in Thailand: Phase- I (Response Plan)
Duration: 1-Mar-16 to 31 Oct- 2016
Project Investigator(s): Peeyush Soni
Sponsor: Climate Technology Centre and Network (CTCN)- UNEP
Total Contracted Amount
(THB): 210,000.00

Capacity building on technology development for efficient use of resources in agricultural sector in Thailand: Phase-2 (Implementation)
Duration: 15-Sep 2016–31-Dec 2017
Project Investigator(s): Dr Peeyush Soni
Sponsor: SDCC CTCN PCA
Total Contracted Amount
(THB): 1,715,000.00

Short-term training/internship program on agribusiness and agro-industries
Duration: 1-Aug-11 to 31 Dec- 2015
Project Investigator(s): Peeyush Soni
Sponsor: Sam Higginbottom Institute of Agriculture, Technology and Sciences, India
Total Contracted Amount
(THB): 1,482,562

Durability stress tests for agricultural tractor under extreme traction conditions
Duration: 01-09-2015 to 31-12- 2015
Project Investigators: Dr Peeyush Soni
Sponsor: John Deere India Pvt. Ltd., India
Total Contracted Amount
(THB): 552,000

Promoting participatory homestead sustainable vegetable production to AIT community
Duration: February 2014–July 2015
Project Investigator(s): Avishek Datta and Anil Kumar Anal
Sponsor: French Agency for Environment and Energy Management, France
Total Contracted Amount
(THB): 100,000

Assessment of empty fruit bunches (EFB) fly ash as fertilizer
Duration: 1-Sep 2014–31-Jul 2015
Project Investigator(s): Abdul Salam and Avishek Datta
Sponsor: Valmet Private Ltd., Chonburi, Thailand
Total Contracted Amount
(THB):856,000

5. On-going Grants and Sponsored Research

Capacity building on technology development for efficient use of resources in agricultural sector in Thailand
Duration: 15-Sep 2016–15-Sep 2017
Project Investigator(s): Dr Peeyush Soni
Sponsor: SDCC CTCN PCA
Total Contracted Amount
(THB): 1,715,000.00

Precision Farming Workshop Development Phase
Duration: 01-May 2016–31-Dec 2016
Project Investigator(s): Dr Peeyush Soni
Sponsor: SDCC CTCN PCA
Total Contracted Amount
(THB): 210,000.00

Project Planning and Implementation-I
Duration: 16-May 2016–15-May 2017
Project Investigator(s): Dr Avishek Datta
Sponsor: Bangladesh Agricultural Institute
Total Contracted Amount
(THB): 374,500.00

6. Publications

Papers in Refereed Journal

Ferdous Z., Datta A., Anal K. A, Anwar M., Khan R. M. (2016). Development of home garden model for year round production and consumption for improving resource-poor household food security in Bangladesh. Wageningen Journal of Life Sciences. Vol: 78,103-110. Publisher: Elsevier, [Impact Factor: 0.635].

Tukaew S., Datta A., Shivakoti G. P., Jourdain D. (2016). Production practices influenced yield and commercial cane sugar level of contract sugarcane farmers in Thailand. Sugar Tech. Vol: 18, 299-308. Publisher: Springer, [Impact Factor: 0.621].

Tursun N., Datta A., Budak S., Kantarci Z., Knezevic S. Z. (2016). Row spacing impacts the critical period for weed control in cotton. Phytoparasitica. Vol: 44,139-149. Publisher: Springer, [Impact Factor: 1.034].

Zahara M., Datta A., Boonkorkaew P. (2016). Effects of sucrose, carrot juice and culture media on growth and net CO2 exchange rate in Phalaenopsis hybrid Pink. Scientia Horticulturae. Vol: 205, 17-24. Publisher: Elsevier, [Impact Factor: 1.538].

Wali E., Datta A., Shrestha R. P., Shrestha S. (2016). Development of a land suitability model for saffron (Crocus sativus L.) cultivation in Khost Province of Afghanistan using GIS and AHP technique. Archives of Agronomy and Soil Science. Vol: 62, 921-934. Publisher: Taylor & Francis, [Impact Factor: 1.118]

Stepanovic S., Datta A., Neilson B., Bruening C., Shapiro C. A., Gogos G., Knezevic S. Z. (2016). The effectiveness of flame weeding and cultivation on weed control, yield, and yield components of organic soybean as influenced by manure application. Renewable Agriculture and Food Systems. Vol: 31, 288-299. Publisher: Cambridge University Press, [Impact Factor: 1.435].

Tursun N., Datta A., Sakinmaz M. S., Kantarci Z., Knezevic S. Z. , Chauhan B. S. The critical period for weed control in

three corn (Zea mays L.) types. Crop Protection. Vol: 90, 59-65. Publisher: Elsevier, [Impact Factor: 1.652].

Stepanovic S., Datta A., Neilson B., Bruening C., Shapiro C. A., Gogos G., Knezevic S. Z. (2016). Effectiveness of flame weeding and cultivation for weed control in organic maize. Biological Agriculture & Horticulture. Vol: 32, 47-62. Publisher: Taylor & Francis, [Impact Factor: 0.765].

Cahyo A. N., Babel M. S., Datta A., Prasad K. C., Clemente R. (2016). Evaluation of land and water management options to enhance productivity of rubber plantation using WaNuLCAS model. Agrivita, Journal of Agricultural Science. Vol: 38, 93-102. Publisher: Faculty of Agriculture, University of Brawijaya, Indonesia, [SNIP = 0.084].

Bundit A., Datta A., Pornprom T. (2016). Effects of timing and soil moisture on the allelopathic activity of itchgrass (Rottboellia cochinchinensis) in soil. Biological Agriculture & Horticulture. Vol: 32, 269-276. Publisher: Taylor & Francis, [Impact Factor: 0.765]

Soni P. (2016). Agricultural Mechanization in Thailand : Current Status and Future Outlook. Agricultural Mechanization in Asia, Africa and Latin America (AMA). Vol: 47, 58-66.

Robertoes K. W., Soni P. (2016). Farmers Injuries, Discomfort and Its Use in Design of Agricultural Hand Tools: A Case Study from East Java, Indonesia. Agriculture and Agricultural Science Procedia Vol: 9, 323-327.

Mohammad B. M., Peeyush S., Sangam S., Nitin K. T. (2016). Changes in Climate Extremes Over North Thailand During 1960-2099. Journal of Climatology. Doi 10.1155/2016/4289454.

Peeyush S., May N. S. (2016). Energy Balance and Energy Economic Analyses of Rice Production System in Ayeyarwaddy Region of Myanmar. Energy Efficiency. Vol: 9, 223-237.

Asmat U., Sylvain R. P., Shabbir H. G., Peeyush S. (2016). Eco-efficiency of Cotton-Cropping Systems in Pakistan: An Integrated Approach of Life Cycle Assessment and Data Envelopment Analysis. Journal of Cleaner Production. Vol: 134, 623-632.

Hena I., Peeyush S. (2016). Value Chain Analysis of Guava: Producer, Retailer and Consumer Perspectives. International Journal of Management. Vol: 7, 17-42.

Papers in Conference Proceedings

Shrestha M., Shrestha S., Datta A. (2016). Climate change and water allocation to Moeyingyi wetland: Impact on flows and diversion of Bago Rive. International Conference on Wetlands Management: Science, Practice and Sustainable Development Pathw. 19-20 January 2016, Siem Reap, Cambodia.

Alam S., Sasaki N., Datta A., Rahman S. M., Mozid A. (2016). Impacts of waterlogging and adaptation measures in Khulna, Bangladesh. 6th International Conference on Building Resilience. 7-9 September 2016, Massey University and The University of Auckland, Auckland, New Zealand.

7. Doctoral Students' Dissertation

The Effects of Plant Growth Regulators and Natural Additives on Direct Shoot Regeneration and Plantlet Growth of Phalaenopsis Hybrid 'Pink'
By: Miss Meutia Zahara
Supervisor: Dr. Avishek Datta

8. Masters Students' Theses

Effect of Silicon-Based Fertilizer on the Growth and Yield of Rice in Vietnam
By: Mr. Tran Xuan Cuong
Supervisor: Dr. Avishek Datta

Farmer's Perception of Crop Insect Pests and Their Control Practices in Rice-Based Croppings Systems: A Case of Shwe Bo Township, Myanmar
By: Miss San San Htwe
Supervisor: Dr. Avishek Datta

Growth, Yield and Silicon Uptake of Rice (Oryza sativa L.) to Different Soil Moisture Regimes and Time of Silicon Application
By: Mr. Phung Duc Luc
Supervisor: Dr. Avishek Datta

Hydrothermal Treatment of Microalgae and its Performance Evaluation as Fuel in Agricultural Tractor
By: Mr. Babban Yadav
Supervisor: Dr. Avishek Datta

4.1.3: SERD – AQUACULTURE AND AQUATIC RESOURCES MANAGEMENT

1. Introduction

Aquaculture in AIT as a topic was started in 1976 and soon evolved into the present-day Aquaculture and Aquatic Resources Management (AARM) field of study in 1982. Since its inception AARM has maintained its prominent position in carrying out research on aquaculture and aquatic resources management globally. While the main emphasis of the research has been to address poverty, food and nutrition security, and creation of employment to the people especially living rural communities, of late AARM has gained research strength in more intensive aquaculture systems that can contribute to sustainable production and profits. AARM's current focus is mainly on generating new knowledge and developing more resource-efficient technologies. It also tests and transfers those innovative technologies through building the capacity of individuals and institutions around the globe.

2. New Research Focus

The research focus of AARM has been redefined to develop and promote cutting-edge technologies in aquaculture stock improvement and health management for sustainable production with a view to better place itself in the increasingly competitive higher-education and research environment in Asia and beyond.

3. Laboratories & Other Research Facilities

Aquaculture Laboratory has been renovated with advanced facilities for research on genetics, disease diagnostics, and nutrition, apart from all general analyses including water quality testing, proximate analysis of feed and feed ingredients, soil classification and their problems identification, etc. Some of its major laboratory equipment includes PCR machine; Electrophoresis units; Gel imaging system; centrifuges; Distillation Units; Extraction Units; Incubators; UV/Vis Spectrophotometer; Soxtec, Fibertec and Kjeltec systems; muffle furnace, microscope with camera, etc.

Other facilities include a well-functioning hatchery, a wetlab, over 100 outdoor tanks and earthen ponds of various sizes, water re-circulatory tank systems with biological and sand filters, biofloc farming systems, aquaponic units run by electric or solar power all of which are used for applied research. AARM also has fish feed producing units where sinking and floating types of pellets are produced for research and also for demonstration purposes using locally available ingredients.

The AARM has its own training and outreach building where Aqua-Centre is housed. There is a library, which has a special collection of latest volumes of aquaculture or fisheries magazines, student theses, videos, CDs, and a classroom.

AARM researchers and students also have access to other laboratories within AIT such as laboratories of biotechnology, environmental, food processing, energy, GIS, and so on. They also have access to facilities of AIT partners such as government research stations, universities, private farms or hatcheries, feed companies, processing factories and fish markets within Thailand and also overseas, thanks to a world-wide network of the highly acclaimed AARM Alumni and also collaborative research partners.

1. 4. Faculty & Research Staff

Emeritus Professor

PETER EDWARDS, BSc, University of Liverpool, UK; PhD, Univ. of Texas, USA.
(General aquaculture with emphasis on recycling organic wastes (human, animal, agro industrial); small-scale aquaculture; integrated farming; aquaculture for poverty alleviation; and systems approaches to education, research and development; curriculum development; project formulation, management and evaluation.

Full-time Faculty

KRISHNA R. SALIN, B.F.Sc. and M.F.Sc. (Aquaculture), Kerala Agricultural University, Kochi, India; PhD (Mariculture), Central Institute of Fisheries Education, Mumbai, India; Postdoc, Queensland University of Technology, Brisbane, Australia.

Assistant Professor *(Applied genetics for improved aquatic stocks, Hatchery management and intensive grow-out techniques for fish and shrimp, Climate change in fisheries and aquaculture; GIS for integrated coastal resources management).*

RAM C. BHUJEL, BSc, Agriculture and Foestry University (AFU), Chitwan, Nepal; MSc and PhD, AIT, Thailand; Post-doc, University of Stirling, Scotland, UK

Research Associate Professor, *(Biostatistics and Research Design, Curriculum Development, Women in Aquaculture, Broodstock Nutrition, Management and Fry Production, Technology Transfer/ Extension)*.

Adjunct Faculty

AMARARATNE YAKUPITIYAGE, BSc, Univ of Kelaniya, Sri Lanka; MSc, AIT, Thailand; PhD, Univ of Stirling, Scotland.

Visiting Associate Professor *(Aquaculture, Bioenergetics, Fish Nutrition, Statistics, Database Systems Development).*

5. Grants and Sponsored Research Completed in 2016

Aquaculture development through Training, outreach and consultancy
Duration: 01-Nov-2014 to 31- Dec-2016
Project Investigator: Dr. Ram C. Bhujel
Sponsors: Trainees, students Private and public companies. In 2015, a total of 143 participants joined the training under this program.
Total Contracted Amount
(THB): 5,800,000.00

Shrimp Biofloc Farming Technology
Project Investigator: Dr. K.R. Salin
Duration: 1-June-15 – 31-Dec-2016
Sponsor: Various international sources
Total Contracted Amount
(THB): 2,522,098.00

Establishment of an Advanced RAS and Aquaponics System
Project Investigator: Dr. K.R. Salin
Duration: 1-Nov-15 – 31-Dec- 2016
Sponsor: Various sources
Total Contracted Amount
(THB): 1,386,754.00

Capacity Building Program for Aqua-farmers in India
Project Investigator: Dr. K.R. Salin
Duration: 3-April-15 – 31-Mar- 2016
Sponsor: Uddaraju Ananda Raju Foundation, Ananda Group, AP, India
Total Contracted Amount
(THB): 239,400.00

Netherlands Initiative for capacity development in Higher Education (NICHE): Integrated management of crop fish water resources to enhance productivity towards sustainable food security in Bangladesh
Duration: 01-09-2013 to 22-08- 2016
Project Investigators: Dr Ram C Bhujel
Sponsor: NUFFIC via Wageningen University Netherlands
Total Contracted Amount
(THB): 5,207,816.00

6. On-going Grants and Sponsored Research

ERASMUS+,GeoServices-4-Sustainability (GeoS4S) (2015-2018)
Duration: Oct 2015 – Dec 2018
Project Co-Investigator: Dr. K.R. Salin
Sponsor: European Commission
Total Contracted Amount
(THB): 2,730,000.00

Biomin feed supplement testing:
Duration: 01-Mar-2015 to 31- Dec-2017
Project Investigator: Dr. Ram C. Bhujel
Sponsor: Biomin Holding, Austria.
Total Contracted Amount
(THB): 632,000.00

Testing of Aqua feed supplements
Duration: 01-Dec-2016–30-Nov-2017
Project Investigator(s): Dr Ram Bhujel
Sponsor: Biomin Holdings, Austria
Total Contracted Amount
(THB): 1,113,000.00

Tilapia Training
Duration: 01-Dec-2015 to 30- Nov-2017
Project Investigator: Dr. Ram C. Bhujel
Sponsor: Multi Donors
Total Contracted Amount
(THB): 3,165,400.00

Waking up a sleeping giant: An assessment of the technical capacity of aquaculture business in East Africa
Duration: 01-Nov-2016 to 31- Dec-2017
Project Investigator: Dr K.R.Salin
Sponsor: DFID, UK & Gatsby Foundation
Total Contracted Amount
(THB): 1,300,000.00

GIANT PRAWN 2017
Duration: 01-Feb-2017 to 31- Dec-2017
Project Investigator: Dr K.R.Salin
Sponsor: Various international donors
Total Contracted Amount
(THB): 2,013,179.00

Sustainable Asian Aquaculture Technology
Duration: 01-Apr-2016 to 30- Sep-2017
Project Investigator: Dr K.R.Salin
Sponsor: Various international donors
Total Contracted Amount
(THB): 1,350,000.00

AARM Lab Testing Services for the Aquaculture Industry
Duration: 01-Feb-2016 to 31- Dec-2017
Project Investigator: Dr K.R.Salin
Sponsor: Kemin Industries, South Asia
Total Contracted Amount
(THB): 195,186.00

Smart Aquaculture Systems for Thailand: Partnering with VerifiK8
Duration: 01-Oct-2016 to 31- Dec-2017
Project Investigator: Dr K.R.Salin
Sponsor: FairAgora Asia, Thailand
Total Contracted Amount
(THB): 180,000.00

7. Publications

Books and Monographs

Salin K.R. (2017). Giant Prawns: Emerg-

ing possibilities for Sustainability. Book of Abstracts of GIANT PRAWN 2017. Asian Institute of Technology. Bangkok, Thailand.

Book Chapters

Salin K.R, Gabriel A. A. (2017). Aquaculture and the environment: towards sustainability. In Visvanathan, C., Boopathy, R., and Hai, F. Sustainable Aquaculture. Publisher: Springer (In press).

Pongtippatee P, Salin K.R, Boonsirm W. (2016). Sustainable, commercial production of triploid Penaeus monodon: background and recent developments. In Visvanathan, C.,, Boopathy, R., and Hai, F. Sustainable Aquaculture. Publisher: Springer (In press)

Gabriel A. A., Manoj T. K., Salin K.R. (2017). Food Industry by-products as protein replacement in Aquaculture diets of Tilapia and Catfish. In Anil K. Anal. Food Additives. Publisher: John and Wiley Sons Ltd. (In press).

Salin K.R, Arun V.V, Nair C.M, James H Tidwell. (2017). Freedom from fish meal and fish oil: Hw far are we from a vegetarian fish. In Visvanathan, C., Boopathy, R., and Hai, F. Sustainable Aquaculture. Publisher: Springer (In press).

Papers in Refereed Journals

David E. Antwi, John K.M. Kuwornu, Edward E. Onumah, Ram C. Bhujel (2016). Productivity and constraints analysis of commercial tilapia farms in Ghana. Kasetsart Journal of Social Sciences. Vol: 0, 1 September. Published online but still hard copy in Press.

Ram C. Bhujel (2016). Aqua-Centre assists aquaculture development through technology transfer and leadership development. In ASEAN Fisheries and Aquaculture Conference and Exposition 2016 and 11th Asian Fisheries and Aquacult. Page 37. 3-7 August, BITEC, Thailand. Publisher: NACA/DoF, Thailand.

Ram C. Bhujel, Anusha Perera (2016). Adaptation to temperature in commercial breeding of Nile tilapia (Oreochromis niloticus). In Fisheries and Aquaculture Conference and Exposition 2016 and 11th Asian Fisheries and Aquaculture. Page 108. 3-7 August, BITEC, Thailand. Publisher: NACA/DoF, Thailand.

Ram C. Bhujel, Edoardo Pantanella, Giusepe E Colla, Chaw Cindy (2016). Empowering women entrepreneurs in running agribusinesses in Myanmar. In ASEAN Fisheries and Aquaculture Conference and Exposition 2016 and 11th Asian Fisheries and Aquacult. Page 226. 3-7 August, BITEC, Thailand. Publisher: NACA/DoF, Thailand.

Dilip K. JhA, Ram C. Bhujel, Anil K. Anal (2016). Carp brood stock management in private hatcheries of Nepal. In ASEAN Fisheries and Aquaculture Conference and Exposition 2016 and 11th Asian Fisheries and Aquacult. Page 310. 3-7 August, BITEC, Thailand. Publisher: NACA/DoF, Thailand.

Hyungtaek J., Byung H. Y., Woo J. K., Dong W. K., David A. H., Russell E. L., Salin K. R., Heui S. K., Ilseon B., Vincent C., Peter B. M. (2016). Optimizing Hybrid de Novo Transcriptome Assembly and Extending Genomic Resources for Giant Freshwater Prawns (Macrobrachium rosenbergii): The Identification of Genes and Markers Associated with Reprod. International Journal of Molecular Sciences. Vol: 17.
Doi: 10.3390/ijms17050690. (Journal Impact Factor: 3.257)

Arun V.V, Saharan N, Ramasubramanian V, Rani B., Salin K.R, Sontakke R, Haridas H, Pazhayamadom D.G. (2016). Multi-response optimization of Artemia hatching process using split-split-plot design based response surface methodology. Scientific Reports (Nature Publishing). Vol: 7.
Doi: 10.1038/srep40394 (Journal Impact Factor: 5.228)

Salin K.R, Hassan I. (2016). Freshwater prawn farming in Thailand: Striving for sustainability. Aquaculture Asia Pacific. Vol: 12, 38-42.

Papers in Conference Proceedings

Manoj T. K., Amararatne Y., Salin K.R. (2016). Effects of dietary Guava leaves extract on growth, feed utilization, biometric indices and intestina. 3rd International Conference on Fisheries and Aquaculture (ICFA 2016). IITKM, Nigombo, Sri Lanka. 24 - 25 August 2016.

Manoj T. K., Amararatne Y., Salin K.R. (2016). In vitro Efficacy of Star Gooseberry (Phyllanthus acidus) leaves extract against the pathogens Aerom. International Fisheries Symposium (IFS 2016). Can Tho University, Phu Quoc, Vietnam. 30 October to 3 November 2016.

Salin K.R, Gabriel A. A., Yann G., Emmanuelle B. (2016). Sailing through the sea of certification schemes for Asian shrimp farming Are we close to sustaina. 8th ASEAN Sustainable Aquaculture Workshop. National Taiwan Ocean University, Keelung, Taiwan, 27 November to 5 December 2016.

Salin K.R (2016). Exotic species changing the economies: the case of Litopenaeus (Penaeus) vannamei and Nile tilapia. Aquatic Exotics: Trends, Challenges and Policies. Kerala University, Thiruvanan thapuram, Kerala, India, 28 - 30 March 2016.

8. Doctoral Students' Dissertation

Integrated Multi Trophic Aquaculture of Red Tilapia (Oreochromis sp.) Fairy Shrimp (Streptocephalus sirindhonrnae) and Lettuce (Lactuca sativa) in Recirculating System
By: Miss Pakamas Sreejariya
Supervisor: Dr. Amararatne Yakupitiyage

9. Masters Students' Theses and Research Studies

Impact of the Closed Season on a Short Mackerel Fishery in the Inner Gulf of Thailand

By: Mr. Thitipon Cheumankong
Supervisor: Dr. Amararatne Yakupitiyage

4.1.4: SERD – FOOD ENGINEERING AND BIOPROCESS TECHNOLOGY

1. Introduction

Food Engineering and Bioprocess Technology (FEBT) Academic Program at the Department of Food, Agriculture and Bioresources is designed to train future professionals in the field of food and bioprocess technology. Our coursework and research aim at expanding students understanding of food and biological materials, their processing, conversion and utilizations in sustainable, safer and healthy products.

Food Process Engineering applies engineering principles to enhance the quality, safety and sustainable processing of foods. It includes, but is not limited to development of state of the art technologies, packaging, storage and quality assessment systems; food supply chain safety, handling and recycling of food wastes, energy conservation. FE focuses on the systems for handling, processing and storage of both durable and perishable food products. Emphasis is also placed on the determination of material properties; design and development of new processes and related equipments; computer modeling and simulation of postharvest and food processing operations.

Bioprocess Technology focuses on developments in biotechnology and its applications in agro/food, functional food, biopolymers, dairy and meat science, cosmetics and pharmaceuticals. Valorization of industrial food waste through extraction of different bioactive compounds, biomaterials and risk assessment of chemical residues to develop their biological control measures. The gastrointestinal targeted delivery of probiotics, immunoglobulins, peptides, enzymes, vitamins and antioxidants through the micro-/nano encapsulation technology, which helps to enhance the stability and bioavailability for better health. This program focuses on value addition of agro-industrial based commodities by the application of bioconversion in various sectors of industry and agriculture. This program also focuses on the exploitation and utilization of biological resources including agro-industrial residues, food-industry based waste/by-products, non-timber forestry products and microorganisms and enzymes to meet the demands of the developing countries of the region.

2. Faculty and Research Staff

Full-time Faculty

ANIL KUMAR ANAL, DVM, University of Agriculture, Faisalabad, Pakistan; MSc. and PhD, AIT, Thailand

Head, Department of Food, Agriculture and Bioresources

Associate Professor (Food Engineering & Bioprocess Technology *(Food and Pharmaceutical Biotechnology, Food safety and Risk Assessment; Dairy and Meat Process Technology, Food Colloids and Biopolymer, Functional Foods, Micro-/Nanoencapsulation, Bionanotechnology; Waste Valorization for High Value)*

LOC THAI NGUYEN, B.Sc., Food Technology, Can Tho University, Vietnam, M.Sc., Food Engineering and Bioprocess Technology, Asian Institute of Technology, Thailand, Ph.D, Food Science and Technology, The Ohio State University, USA.

Assistant Professor (Non-thermal food processing technologies, Mathematical simulation in food engineering Transport phenomena of food processes, Integrated electrochemistry-based biosensors, Novel sensing platforms based on nanomaterials)

ATHAPOL NOOMHORM, BSc, Kasetsart Univ, Thailand; MEng, Lamar Univ, Texas; PhD, Louisiana State Univ, USA.
Professor *(Agro-Industrial Development, Food Process Technology, Post Harvest Technology, Supply Chain; Waste Valorization.)*

Research & Lab. Supervisor

MELADA SUPAKIJNORASET, B.Sc. (First class honors) in Biotechnology, King Mongkut's Institute of Technology Ladkrabang, Thailand; M.eng. in food Engineering and Bioprocess Technology, AIT, Thailand.

Research Associate

DAMODAR DHAKAL, B. Dairy Tech, College of Applied Food and Dairy Technology, Nepal, M.Sc, Food Eng. & Bio-Process technology), SERD, AIT, Thailand

CHHAY CHANSEYHA, B.English, Norton University, Cambodia, Food Eng. & Bio-Process technology), SERD, AIT, Thailand
Research Associate

LAVARAJ DEVKOTA, B. Dairy Tech, College of Applied Food and Dairy Technology, Nepal, M.Sc, Food Eng. & BioProcess technology), SERD, AIT, Thailand

MANISHA SINGH, B.Tech, Tribhuvan University, M.Sc, Food Eng. & Bio-Process technology), SERD, AIT, Thailand
Research Associate

3. Grants and Sponsored Research Completed in 2016

Health Food Traditions of Asia (HFTA)
Duration: 1 Jan 2015 – Feb 2016
Project Investigators Dr Anil K. Anal
Sponsor: Minstry of Environment, Japan
Total Contracted Amount
(THB): 128,000.00

4. On-going Grants and Sponsored Research

Exploration of Bioactive Value Added Compounds from Dammar and Seedlac.
Duration: 1 May 2015 – 31 Dec 2017
Project Investigators Dr Anil K. Anal
Sponsor: Thevaraya Co.Ltd, Thailand
Total Contracted Amount
(THB): 700,000.00

Development of Anti-fungal Acrylic Fibre for Novel Applications. (Thai Acrylic)
Duration: 20 Jan 2009 – 31 Dec 2016
Project Investigators: Dr. Anil K. Anal
Sponsor: Various
Total Contracted Amount
(THB): 5,373,433.00

Internship and training at FEBT
Duration: 01-May-2014 to 31-May-2018
Project Investigators Dr Anil Kumar Anal
Sponsor: Various
Total Contracted Amount
(THB): 71,823.65

Sustain and Enhance Cooperation on Sustainable Development Research for Local Resource Utilization and Efficiency.
Duration: 1-Jul -13 – 31 March 17
Project Investigator(s): Dr. Anil K. Anal
Sponsor: SUSTAIN EU-ASEAN
Total Contracted Amount
(THB): 2,469,810.00

EU-ASEAN Science and Technology Cooperation to Jointly Tackle Societal Challenges (SEA-EU-NET2)
Duration: 1-Nov-2012 to 31- July 2017
Project Investigator(s): Anil Kumar Anal, P. Abdul Salam, Sangam Shrestha
Sponsor; European Union FP7
Total Contracted Amount
(THB): 8,779,888.00

Internet of Thing (IoT) based Intelligent Quality Traceability and Control Technologies for Aquatic Products Supply Chain. (TICA)
Duration: 1 Nov 2015 – 31 Dec 2017
Project Investigators: Prof. Athapol Noomhorm
Sponsor: Thailand International Development Cooperation Agency (TICA)
Total Contracted Amount
(THB): 138,500.00

ASIFOODS: University as Key Partners for the New Challenges Regarding Food Safety and Food Quality in South East Asian Institute of Technology
Duration: Oct 2015-Sep 2018
Project Investigators Dr Anil Kumar Anal
Sponsor: European Union
Total Contracted Amount
(THB): 4,000,000.00

Food Waste and Loss at AIT (Save Food).
Duration: 1 July 2015-January 2017
Project Investigators Dr. Anil Kumar Anal as PI, Dr. Prabhat Mishra (Co-PI), Dr. Abha Mishra (Co-PI) and Dr. Avishek Datta (Co-PI)
Sponsor: FAO
Total Contracted Amount
(THB): 990,000.00

5. Publications

Book Chapters

Sung H. P., Loc T. N., Stephen M., Balasubramaniam V.M., Sudhir S. (2016). In Situ Thermal, Volumetric and Electrical Properties of Food Matrices Under Elevated Pressure. In V.M. Balasubramaniam, Gustavo V. Barbosa-C. novas, Huub L.M. Lelieveld. (2016). High Pressure Processing of Food. New York, USA. Publisher: Springer.

Papers in Refereed Journal

Hiranrangsee L., Kumaree K. K., Sadiq M. B., Anil K A. (2016). Extraction of anthocyanins from pericarp and lipids from seeds of mangosteen (Garcinia mangostana L.) by Ultrasound-assisted extraction (UAE) and evaluation of pericarp extract enriched functional ice. Journal of Food Science and Technology. Vol: 53, 3806 – 3813.

Akbar A., Ali I, Anil K A. (2016). Industrial

Perspectives of Lactic Acid Bacteria for Bio Preservation and Food Safety. Journal of Animal and Plant Sciences. Vol: 26.

Mishra S., Kumar M. S., Anil K. A. (2016). Modulation of Digestive Enzymes and Lipoprotein Metabolism by Alpha Mangosteen Extracted from Mangosteen (Garcinia Mangostana) Fruit Peels. The Journal of Microbiology, Biotechnology and Food Sciences. Vol: 6, 717.

Ferdous J., Avishek D., Anil K. A., Anwar M., Khan A. M.R. (2016). Development of home garden model for year round production and consumption for improving resource-poor household food security in Bangladesh. NJAS-Wageningen Journal of Life Sciences.

Son C. K., Jun L. W., Tien P. Q., Thuy N. T., Phong L. Q., Van L., Man V., Nguyen L., Anil K A., Sarter S. (2016). Exploration de la biodiversit vgtaleet microbienne pour la qualitet la suret des aliments. Journal of Biotechnology.

Jain S., Anil K A. (2016). Optimization of extraction of functional protein hydrolysates from chicken egg shell membrane (ESM) by ultrasonic assisted extraction (UAE) and enzymatic hydrolysis. LWT-Food Science and Technology. Vol: 69, 295-302.

Zein Y. M., Anil K A., Prasetyoko D., Qoniah I. (2016). Biodiesel Production from Waste Palm Oil Catalyzed by Hierarchical ZSM-5 Supported Calcium Oxide. Indonesian Journal of Chemistry. Vol: 16, 98-104.

Anil K A. (2016). Interactions of Biomacromolecules During Processing of Instant Asian Noodles. Journal of Food Science and Technology. Vol: 9. Doi:10.3126/jfstn.v9i0.16197.

Anh V. N., Trung V. H., Tien Q. B., Hai B. Nguyen, Hong H. C., Nguyen H. L., Nguyen L. T., Thu T. V., Dai L. T. (2016).Development of a PMMA Electrochemical Microfluidic Device for Carcinoembryonic Antigen Detection. Journal of Electronic Materials. Vol: 45, 2455 – 2462.

Hai B. N., Binh T. N., Hanh V. V., Chuc V. N., Dzung T. N., Nguyen L. T., Thu T. V., Dai L. T. (2016). Development of label-free electrochemical lactose biosensor based on graphene/poly (1, 5-diaminonaphthalene) film. Current Applied Physics. Vol: 16, 135 – 140.

Papers in Conference Proceedings

Amol I., Muhammad S., Loc T. N. (2016). Optimization of Extraction Conditions and Assessment of Antioxidant, Glucosidase Inhibitory. International Scientific Conference Sustainable Agriculture and Environment. HCMC, Vietnam, 13-14 December 2016.

Jakaphan R., Loc T. N., Lavaraj D., Pratiksha S. (2016). Effects of Selected Metal Ions on Stability of Anthocyanins from Red Cabbage upon Heating and Encaps. Food Innovation Asia 2016. Bangkok, Thailand, 16-18 June 2016.

6. Doctoral Students' Dissertation

Assessment of Antimicrobial Resistance of Food-borne Enteric Pathogens and Evaluation of Antioxidant, Antibacterial and Antimalarial Potentials of Acacia nilotica Extracts
By: Mr. Muhammad Bilal Sadiq
Supervisor: Dr. Anil Kumar Anal

Green Technology Based Extraction of Protein Hydrolysates from Chicken Eggshell Membrane, Characterization of their Bioactive Properties and Formation of Stable Food Emulsions
By: Miss Surangna Jain
Supervisor: Dr. Anil Kumar Anal

7. Masters Students' Theses and Research Studies

Qualitative Analysis of Tetracycline Residues and Evaluation of Antibiogram of Salmonella and Vibrio Isolates from White Leg Shrimp
By: Miss Thazin Oo
Supervisor: Dr. Anil Kumar Anal

Synergistic Antifungal Effects of Essential Oils and Lactobacillus plantarum Cell-free Supernatant against Penicillium spp. and in situ Effects in Rice
By Mr. Suphamid Sriwattanachai
Supervisor: Dr. Anil Kumar Anal

Effects of Freezing Rates and Handling Methods on the Quality of Nile Tilapia (Oreochromis niloticus) Fillets with Traceability in the Status of Tilapia Supply Chain in Thailand
By: Mr. Pisuth Suvannasankha
Supervisor: Prof. Athapol Noomhorm

Gum Arabic and Chitosan Based Edible Packaging to Enhance Shelf Life of Fresh Cut Dragon Fruit (Hylocereus undatus L.)
By: Mr. Hendri
Supervisor: Dr. Anil Kumar Anal

Development of Probiotic Nata De Coco Using Acetobacter xylinum Starter Culture and Lactobacillus plantarum
By: Mr. Fahroji
Supervisor: Dr. Loc Thai Nguyen

Assessment of Bioactive Components in Dammar Extracts and Exploration of Composite Film Based on Dammar
By: Miss Manisha Singh
Supervisor: Dr. Anil Kumar Anal

Evaluation of Encapsulated Lactobacillus bulgaricus for their Viability in Feed Pellets and Simulated Gastrointestinal Conditions of Poultry
By: Mr. Mirza Rajiv Azad
Supervisor: Dr. Anil Kumar Anal

Development of an Electrochemical Sensor for Detection of Tetracycline Using Molecularly Imprinted Overoxidized Polypyrrole and Gold Nanoparticles
By: Mr. Lavaraj Devkota
Supervisor: Dr. Loc Thai Nguyen

Bioactive Extract from Xanthium strumarium L. Fruit and in Vitro Evaluation of Biological Activities and Their Relation with Redox Properties
By: Mr. Amol Subhash Ingawale
Supervisor: Dr. Loc Thai Nguyen

Prevalence and Identification of Antibiotic Resistant Genes in Escherichia

coli and Salmonella Isolates from Green Leaf Lettuce in Thailand and Cambodia
By: Mr. Chhay Chanseyha
Supervisor: Dr. Anil Kumar Anal

Formulation of Gluten-Free Bread and Frozen Dough from Riceberry Flour
By: Miss Nareerut Pangjun
Supervisor: Prof. Athapol Noomhorm

Enhanced Functional Value of Banana Juice with Moringa oleifera Leaves Extract and Its Characterization
By: Mrs. Atiqa Anwar
Supervisor: Dr. Anil Kumar Anal

4.2: SERD – DEPARTMENTS OF ENERGY, ENVIRONMENT AND CLIMATE CHANGE

Background and Mission

Department of Energy, Environment and Climate Change aims to fulfill AIT's vision of sustainable Asia as Asia is rapidly rising economically, socially and technologically. The efficient utilization and clean energy resources, leapfrogging environmental technolo-gies and management, preserving local and global environment and conducive consumption and behavioral changes, among others are crucial points that the region must pay attentions to. In these realms, we strive to generate new knowledge and options, support their diffusion and implementation. The Missions of the Department are:

- To develop next-generation leaders who are able to address societal needs of clean energy, utilization of environmental technolgies and management and address the burgeoning issue of climate change.
- To serve the society by creating and delivering new solutionoriented knowledge and practices for better energy transitions, challenges to air, water and wastewater related environmental problems and the climate change in rapidly changing Asia through research and outreach

Academic Programs

Multidisciplinarity is at the very core of the department's teaching, research and outreach activities. Our academic activities focus on problem-solving and creating work-ready graduates who are able to take real-life chal - lenges once graduated. The students come from multiple Disciplines-Engineering, Science, Eco - nomics, Management and Humanities.

Department of Energy, Environment and Climate Change are:

1. Energy
2. Environmental Engineering and Management
3. Climate Change and Sustainable Development
4. MBA in Energy Business (SERD and SOM)

4.2.1: SERD – ENERGY FIELD

1. Introduction

Energy related academic program at AIT was established in 1979. So far, over 1,134 students have graduated in the Energy studies. As of September 2012, about one hundred students are enrolled in Energy Field of Study. About thirty percent of the current students are at doctoral level. Apart from teaching and student research, faculty at Energy FoS is involved in a number of research projects. Some of the current research focuses of Energy FoS are Energy, environment and climate change, Energy for sustainable development, Renewable Energy and Energy efficiency, Electric power system management, and Energy economics and planning.

Student admitted to Energy Field of Study can specialize in one of the three areas.

- Electric Power System Management (EPSM)
- Energy Technology (ET)
- Energy Economics and Planning (EEP)

Details regarding Energy field of study activities are available at www.serd.ait.ac.th/energy

2. Research Facilities and Laboratories

Energy Laboratory serves as a facility for conducting experimental studies for courses, carrying out students and sponsored research, and testing of energy equipments as well as providing hands-on training. Laboratory functions are focused mainly on solar thermal energy, photovoltaics, biomass energy, energy management, thermodynamics and heat transfer, and electrical measurement and analysis. The laboratory facilities include two indoor laboratories, an energy park and a meteorological station. The indoor laboratories are equipped with experiment setups, testing apparatus and measuring equipment for thermal and electrical management studies, thermodynamics, fluid mechanics and heat transfer, and electrical power supply management. Energy Park covers 3980-m^2 outdoor research and demonstration facility equipped with photovoltaic systems, solar thermal (air and water) systems, biomass research and daylighting setups. The meteorological station records solar radiation and other meteorological data. Energy laboratory continues to carry out testing services such as fuel quality tests, gas composition tests, tests for heating value of fuels, solar thermal collector performance tests, solar water heater system performance tests and stove efficiency tests.

Among its major equipment include a Gas Analyzer; Campbell data logger; Ultrasonic flow-meter; Bomb colorimeter; and a Gas chromatography.

The SERD Computer Lab IV in the Energy Building has a large number of computers modeling software for energy planning and policy analysis. These include Model for Analysis of Energy Demand and Environmental Impacts (MAED, MEDEE-S/ENV, LEAP), Electricity System Planning (WASP-III Plus, ENPEP, DECPAC), Energy-Environmental Flow Optimization Model (EFOM-ENV), Wood Energy Planning Models, Energy-Environmental Models for estimation of impacts of energy externalities, air pollution emission and dispersion and climate change (CO2 DB, RAINS, TEMIC, ECOSENS, ISC) and Energy-Environmental Database Management Software (DBAVOID). An energy-environment database for Asia is maintained in this computer lab.

3. Faculty and Research Staff

Emeritus Professor

RAM M. SHRESTHA, B.E., MSU, Baroda; B.L., Tribhuvan; M.Eng., D.Eng, AIT

Visiting Faculty [*Energy and Environmental Policy, Energy and Electricity Economics, Energy-economic Modeling]*

Full-time Faculty

SIVANAPPAN KUMAR, BE, Univ of Madras, India; MEng, AIT, Thailand; PhD, InstNatlPolytechnique, Toulouse, France.

Professor *[Renewable energy resources and technologies: Climate change and green house gas mitigation: energy and sustainable development]*

WEERAKORN ONGSAKUL, B.Eng, Chulalongkorn Univ, Thailand; MS, PhD, Texas A&M Univ, USA.

Associate Professor and Former Dean, School of Environment, Resources and Develop-ment *(Artificial Intelligence Applications to Power Systems; Parallel Processing Applications; Power System Operation & Control; Power System Deregulation & Restructuring)*

ABDUL SALAM PAKKEERTHAMBY, BSc.Eng (Hons.) University of Peradeniya, Sri Lanka; M.Eng., D.Eng., AIT

Assistant Professor *(Bioenergy, Renewable energy; Energy conservation and efficiency); climate change mitigation)*

JAI GOVIND SINGH, Ph.D. in Electrical Engineering, Indian Institute of Technology, Kanpur, India

Assistant Professor *(Power system planning; Operation and control; FACTS controllers; Re-structuring of Electric Industry, Demand side management; Grid integration of renewable energy resources; Power distribution systems)*

SHOBHAKAR DHAKAL, B.E., NIT, Surat; M.E., AIT, P.HD. Tokyo.

Associate Professor *and* Head of Department *(Modeling of Energy and carbon Emission, Scenarios Policy Analyses)*

Visiting Faculty

AUMNAD PHDUNSILP, B.Ind Tech, Sirpatum University, M.Sc., Tekn.Lic in Energy Technology, PhD. in Industrial Engineering

Visiting Faculty *[Energy Statistics and Energy Demand Forecasting]*

BRAHMANAND MOHANTY, BSc, SAICE, India; MSc, AIT, Thailand; PhD, Institut National Polytechnique of Toulouse, France

Visiting Faculty *[Demand-side management, Energy auditing and management, Energy Efficiency policies; and Rational use of technology]*

Research Staff

Ms. Neriza Cabahug, Research Assistant GNESD

Ms. Watcharathorn Chantinmathorn, Secretary (GMSARN Project)

Ms. Maria Kathrina Gratuito, Research Associate (RERIC)

Ms. Ashish Shrestha, Research Associate, APN Project

Ms. Shamima Akhter, Program Officer, PMEBM, UNIDO

Mr. Sheikh Aminur Rahman, Research Associate, RS Co-benefits and Renewable Energy UNIDO Phase II

Mr. Melinda Yasaranji Matara Achchige, Resear Associate, Development of a Decision Making Paper on Mitigation Options in Thailand's Waste Sector

4. Grants and Sponsored Research Completed in 2016

Energy Efficiency Initiatives in Asia and Action Plan to Support Countries (EESA-SEE4ALL)
Duration: June 2014 – Aug 2016
Investigator: Prof. S. Kumar, Dr. P. A. Salam and Dr. S. Dhakal
Sponsor: UNEP-Risoe, Denmark
Total contracted amount:
(THB) 1,149,155.75

Energy-Environmental Data Analysis for Low Carbon Society (EEDA)
Duration: 1 Dec. 2009 – 31 Dec. 2016
Investigator: Prof. R. M. Shrestha and Prof. S. Kumar
Sponsor: MHIR (Mizhou), Japan
Total contracted amount:
(THB) 740,000.00

International training on design and testing of improved cookstoves
Duration: 01-09-2015 to 30-04-2016
Project Investigators: Dr Abdul Salam
Sponsor: Department of Renewable Enrgy, Bhutan
Total Contracted Amount
(THB): 210,000.00

Murdoch – Research (Myanmar)
Duration: July 2014-July 2016
Investigator: Prof. S. Kumar and Prof. K. Kusakabe
Sponsor: Murdoch University, Australia
Total Contracted Amount
(THB): 75,000.00

Murdoch – Workshop (Myanmar)
Duration: July 2014-July 2016
Investigator: Prof. S. Kumar and Prof. K. Kusakabe
Sponsor: Murdoch University Australia
Total contracted amount:
(THB) 161,691.25

The Greater Mekong Sub Region Academic and Research Network (GMSARN)
Duration: 30 Jun 2012 - 31 Sep 2016
Investigator: Dr.Weerakorn Ongsakul
Sponsor: Registration Revenues/Sponsorships/Grants
Total contracted amount:
(THB) 1,400,000.00

Understanding Decentralized Energy Interventions and Its Success Conditions in Select Countries of Asia Pacific Region
Duration: Jan 2015 – Dec 2016
Investigator: Dr. Shobhakar Dhakal
Sponsor: TERI University, India
Total contracted amount:
(THB) 345,600.00 (USD 10,800)

Urban Energy Access in Myanmar: Knowledge and Outreach (UPEA-Myanmar)
Duration: Nov. 2013 – Dec. 2016
Investigator: Prof. S. Kumar and Dr. P. A. Salam
Sponsor: Global Network on Energy For Sustainable Development (GNESD), Denmark
Total contracted amount:
(THB) 900,000.00

GHG Mitigation in Thai Waste Sector
Duration: 1 Mar 2015-28 Feb 2016
Investigator: Dr. P. Abdul Salam
Sponsor: GIZ, Thailand
Total contracted amount:
(THB) 1,923,340.78

Low Carbon Technology Facilitation in Asia in the context of the Climate Technology Center and Networks
Duration: 12 Nov 2015 – 30 Apr 2016
Investigator: Dr. Shobhakar Dhakal
Sponsor: Mitsubishi Research Institute, Japan
Total Contract amount:
(THB) 2,445,870.00

Promotion of Sustainability in Postgraduate and Research Network (ProSPER. Net) Joint Research Project-Climate Compatible Development in Asian Cities
Duration: 1 Sept 2015 – 31 Oct 2016
Investigator: Dr. Shobhakar Dhakal
Sponsor: UNU-IAS
Total Contracted amount:
(THB) 1,207,000.00

Provision of technical services in the area of Renewable Energy
Duration: 01-Mar-2014 to 28-Feb-2015
Project Investigators Dr P Abdul Salam
Sponsor: UNIDO-Australia
Total Contracted Amount:
(THB) 1,395,000.00

Provision of Technical Services in the Area of Renewable Energy Phase-II
Duration: 1 Mar 2015 -31 Oct2016
Investigator: Dr. P. Abdul Salam
Sponsor: UNIDO, Austria
Total contracted amount:
(THB) 1,440,000.00

Renewable Energy Technologies for Integrated Community Farming Systems
Duration: 1 Apr. 2015 – 31 Mar. 2016
Investigator: Prof. S. Kumar, Dr. K. Kusakabe and Dr. A. Datta
Sponsor: Wisions of Sustainability, Germany
Total contracted amount:
(THB) 455,000.00

Technology Needs Assessment Phase II Global Workshop
Duration: 8 May 2015 – Dec. 2015
Investigator: Prof. S. Kumar, Prof. R. Shrestha and Dr. P. A. Salam
Sponsor: UNEP-DTU Partnership, Denmark
Total contracted amount:
(THB) 1,427,000

IEEE Innovative Smart Grid Technologies 2015, International conference
Duration: 01-Oct-2014 to 31-Jan-2016
Project Investigators Dr Weerakorn Ongsakul
Sponsor: Registration revenues/sponsorship/grants
Total Contracted Amount:
(THB) 797,851.00

Turning rice straw into cooking fuel for air quality and climate co-benifits in selected GMS countries
Duration: 15-12-2014 to 31-08-2016
Project Investigators: Prof. Nguyen Thi Kim Oanh, Dr P Abdul Salam
Sponsor: Stockhome environment institute Asia center

Total Contracted Amount
(THB): 178,107

Promotion of sustainability in post graduate and research network (Prosper.net) join research project- climate compatible development in Asian cities
Duration: 01-09-2015 to 31-07-2016
Project Investigators: Dr Shobhakar Dhakal, Prof S. Kumar
Sponsor: UNU-IAS
Total Contracted Amount
(THB): 1,122,000

Development on Decision making paper on GHG mitigation options in Thai waste sector
Duration: 01-03-2015 to 28-02-2016
Project Investigators: Dr Abdul Salam, Dr. Shobhakar Dhakal, Prof. C. Visvanathan, Dr.Thammarat Koottatep
Sponsor: GIZ Thailand
Total Contracted Amount
(THB): 1,923,341

CTCN request incubator program in Bangladesh
Duration: 01-12-2015 to 30-04-2016
Project Investigators: Dr Abdul Salam
Sponsor: CTCN-PCA
Total Contracted Amount
(THB): 420,000

5. On-going Grants and Sponsored Research

Energy Publications Project
Duration: 01-01-2013 to 31-12-2017
Project Investigators: Dr. P. Abdul Salam, Prof. S. Kumar, Dr.Weerakorn Ongsakul, Dr. Jai Govind Singh, Dr.Charles O.P. Marpaung and Dr. Shobhakar Dhakal
Sponsor: AIT
Total Contracted Amount
(THB): 4,185,824

Technology Needs Assessment (Phase II) for Asia and CIS Region - Technical
Duration: 8 Jan. 2015 – 28 Feb. 2018
Investigator: Prof. S. Kumar, Prof. R. Shrestha and Dr. P. A. Salam
Sponsor: UNEP-DTU Partnership, Denmark
Total contracted amount:
(THB) 2,514,000.00

Technology Needs Assessment (Phase II) for Asia and CIS Region - Missions
Duration: 8 Jan. 2015 – 28 Feb. 2018
Investigator: Prof. S. Kumar, Prof. R. Shrestha and Dr. P. A. Salam
Sponsor: UNEP-DTU Partnership, Denmark
Total contracted amount:
(THB) 320,000.00

Technology Needs Assessment (Phase II) for Asia and CIS Region - Workshop
Duration: 8 Jan. 2015 – 28 Feb. 2018
Investigator: Prof. S. Kumar, Prof. R. Shrestha and Dr. P. A. Salam
Sponsor: UNEP-DTU Partnership, Denmark
Total contracted amount:
(THB) 1,744,000.00

Technology needs assessment in Asia for climate change mitigation and adaptation Phase II Workshop
Duration: Jan 2015-Mar 2017
Project Investigators: Prof. S. Kumar, Dr. A. Salam and Prof. R.P. Shrestha
Sponsor: UNEP DTU Partnership, Denmark
Total Contracted Amount
(THB): 1,462,000.00

CTCN Technical Assistance Response plan for Nepal
Duration: 01-Nov-2016 to 30-Apr-2017
Project Investigators: Dr P. Salam, Dr Shobhakar Dhakal
Sponsor: CTCN UNEP/UNIDO
Total Contracted Amount
(THB): 207,000.00

Research on Globalization of Low Carbon technologies and intended Nationally determined contributions
Duration: 01-May-2016 to 31-Dec-2016
Project Investigators: Prof Sivanappan Kumar
Sponsor: CTCN UNEP/UNIDO
Total Contracted Amount
(THB): 350,000.00

ICUE 2016 Cogeneration Small Power Plants and District Energy International Conference
Duration: 01-Feb-2016 to 30-Jun-2017
Project Investigators: Dr P Abdul Salam, Dr Shobhakar Dhakal, Dr Weerakorn Ongsakul, Prof S.Kumar, Dr Jai Govind Singh
Sponsor: Multi Donors
Total Contracted Amount
(THB):1,670,000.00

PEA - AIT Scholarship Program
Duration: 15-Feb-2016 to 14-Feb-2020
Project Investigators: Dr Weerakorn Ongsakul
Sponsor: Provincial Electricity Authority (PEA)
Total Contracted Amount
(THB):20,212,000.00

Efficiency Improvement of Bangchak Solar Panels
Duration: 29-Feb-2016 to 31-Aug-2016
Project Investigators: Dr Weerakorn Ongsakul, Dr Jai Govind Singh
Sponsor: Bangchak Solar Energy Co Ltd
Total Contracted Amount
(THB):130,625.00

6. Publications

Books and Monographs

Kumar S., Kyoko K., Pujan S., Nguyen K. L., Trinnawat S. (2016) Sustainable urban tourism through low-carbon initiatives: Experiences from Hue and Chiang Mai. Climate and Development Knowledge Network. 14 page.

Weerakorn O., Vo N. D. (2016). Artificial Intelligence in Power System Optimization (in Chinese). China.

Book Chapters

Shobhakar D., Ashish S. (2016). BANGKOK, THAILAND. In Sheridan Bartlett and David Satterthwaite. Cities on a Finite Planet: Towards Transformative Responses to Climate Change. Earthscan, London and New York.

Kumar S. (2016). Low Carbon Energy Systems and Indicator Framework for Cambodia, Lao PDR and Myanmar. In Venkatachalam Anbumozhi, Kaliappa Kalirajan, Fukunari Kimura and Xianbin Yao. Investing in low carbon energy systems -Implications for regional economic cooperation. Singapore. Publisher: Springer Science - Book

Media.

Jirawadee P., Weerakorn O., Vo N. D. (2016). Improved Pseudo-Gradient Search Particle Swarm Optimization for Optimal Power Flow Problem. In Pandian Vasant and Nikolai I. Voropai. Sustaining Power Resources through Energy Optimization and Engineering. Hershey, PA, USA. Publisher: IGI.

Papers in Refereed Journals

Rotchana I., Salam P. A. (2016). Valorization of MSW to Energy in Thailand: Status, Challenges and Prospects. Journal of Waste and Biomass Valorization, Vol. 7, 31 – 57.

Anuman C., Shobhakar D., Juthathip J. (2016). Supply and demand of biofuels in the fuel market of Thailand: Two stage least square and three least square approaches. Energy. Vol: 114, 431-443.

Arkarlat K., Shobhakar D. (2016). Household energy requirements in two medium-sized Thai cities with different population densities. Environment and Urbanization. First Published September 20, 2016 Volume no is yet to be assigned Already available at: http://journals.sagepub.com/doi/abs/10.1177/0956247816659804 Journal with ISI 1.5 impact factor

Anuman C., Shobhakar D. (2016). Stakeholders' perceptions on challenges and opportunities for biodiesel and bioethanol policy development in Thailand. Energy Policy. Vol: 91, 189 – 206.

Anuman C., Shobhakar D. (2016). Liquid biofuels development in southeast asian countries: an analysis of market, policies and challenges. Waste and Biomass Valorization. Vol: 7, 157-173.

Felix C., Peter A., Jan C. M., Josep G. C., Robbie M. A., Corinne L. Q., Glen P. P., Ayyoob S., Yoshiki Y., Shobhakar D. (2016). Urban infrastructure choices structure climate solutions. Nature Climate Change. Vol: 6, 1054-1056.

Nikhil S., Jai G. S. (2016). A Resilient DC Community Grid with Real Time Ancillary Services Management. Sustainable Cities and Society. Thomson Reuters IF=1.044.

Vivek M., Jai G. S., Weerakorn O. (2016). Sortino Ratio Based Portfolio Optimization Considering PHEVs and Renewable Energy in Microgrid Power Market. IEEE Transactions on Sustainable Energy. Thomson Reuters IF=3.727.

Subas R. T., Jai G. S., Weerakorn O. (2016). Multi-Objective Approach for Distribution Network Reconfiguration with Optimal DG Power Factor using NSPSO. IET Generation, Transmission & Distribution. Vol: 10, 2842 – 2851. Thomson Reuters IF=1.353.

Jai G. S., Hassan W. Q., Mehrdad G. (2016). Load Curtailment Minimization by Optimal Placement of Unified Power Flow Controller. International Transactions on Electrical Energy Systems. Vol: 26, 2272 – 2284. Thomson Reuters IF= 1.084.

Vivek M., Jai G. S., Weerakorn O., Reshma S. M. P. (2016). Economic and Network Feasible Online Power Management for Renewable Energy Integrated Smart Microgrid with Improved DER Dynamics. Sustainable Energy, Grids and Networks. Vol: 7, 13 – 24.

Vivek M., Jai G. S., Weerakorn O., Reshma S. M. P. (2016). Performance Enhancement of Online Energy Scheduling in a Radial Utility Distribution Microgrid. International Journal of Electric Power and Energy Systems. Vol: 79, 98 – 107. Thomson Reuters IF=2.587.

Nimal M. M., Nikhil S., Jai G. S. (2016). A Droop Control Based DC Equivalent Power Flow Method for Low and Medium Voltage Distribution Systems. Electric Power System Research. Vol: 134, 56 – 65. Thomson Reuters IF=1.809.

Nikhil S., Jai G. S. (2016). A Novel Single Stage Single Phase Reconfigurable Inverter Topology for a Solar Powered Hybrid AC/DC Home in Smart Grid. IEEE Transactions on Industrial Electronics. Thomson Reuters IF=6.498.

Molla S. H. L., Kumar S. (2016). Energy poverty and access to modern energy of urban poor: a case of Dhaka, Bangladesh. International Journal of Energy Technology and Policy. Vol: 12, 270 – 294.

Shazib M. U., Kumar S. (2016). Energy and Environmental Analysis of Domestic Solar Hot Water System in Asian Developing Country Context Thailand. Environmental Progress & Sustainable Energy. Vol: 35, 271 – 283. (AIChE). Impact factor: 1.631.

Vivek M., Jai G. S., Weerakorn O. (2016). Performance Enhancement of Online Energy Scheduling in a Radial Utility Distribution Microgrid. International of Journal of Electrical Power & Energy Systems. Vol: 79, 98 – 107.

Vivek M., Jai G. S., Reshma S., Weerakorn O. (2016), Economic and Network Feasible Online Power Management for Renewable Energy Integrated Smart Microgrid, Sustainable Energy. Grids and Networks, Vol: 7 13-24.

Subas T., Jai G. S., Weerakorn O. (2016). Multi-Objective Approach for Distribution Network Reconfiguration with Optimal DG Power Factor Using NSPSO. IET Generation, Transmission & Distribution. Vol: 10, 2842 – 2851.

Sajjad G., Anand M. P., Weerakorn O., Athula R. (2016). Incorporating Short-Term Topological Variations in Optimal Energy Management of MGs Considering Ancillary Services by Electric Vehicles. Energy. Vol: 112, 241 – 253.

Sittichoke P., Weerakorn O. (2016). Design of Optimal Wind Farm Configuration Using a Binary Particle Swarm Optimization at Huasai District, Southern Thailand. Energy Conversion and Management. Vol: 108, 160 – 180.

Papers in Conference Proceedings

Tanja Radu, Rachard Blanchart, Andrew Wheatley, P Abdul Salam, C Visvanathan (2016). Community Scale Decentralized Anaerobic Digestion for Energy and

Resource Recovery. International Conference on Cogeneration Small Power Plants and District Energy, 14-16 September 2016, Bangkok.

K Das, P Abdul Salam, S Nonhebel (2016). Biofuel from Microalgae: Mapping the Developments in Industry. 11th Conference on Sustainable Development of Energy, Water and Environmental Systems, Lisbon.

Sachin Muralee Krishna, P Abdul Salam (2016). Computational Investigations on Producing Diesel-Biodiesel-Ethanol Optimal Fuel Blends. Global Conference on Engineering and Technology, 1-2 June, Kuala lumpur.

Sachin Muralee Krishna, P Abdul Salam (2016). Economic Analysis on Implementing DBE Blends as Diesel Fuel Substitute in Thailand. International Conference on Recent Trends in Engineering and Material Science, 17-19 March, Jaipur, India.

Sachin Muralee Krishna, P Abdul Salam, Nimal M Madhu (2016). Optimal Sizing and Operational Strategies for Diesel Engine Driven CCHP System. International Conference on Cogeneration Small Power Plants and District Energy, 14-16 September 2016, Bangkok.

Happy A., Jai G. S., Ontoseno P., Soeprijanto A. (2016). Optimal Placement of Capacitor on Three Phase Radial Distribution System Using Direct Search Algorit. IEEE Region 10 Humanitarian Technology Conference. Agra, India, 21-23 December 2016.

Singh J. G., Singh S. N., Srivastava S. C. (2016). Congestion Management by using FACTS Controller in Power System. IEEE Region 10 Humanitarian Technology Conference. Agra, India, 21-23 December 2016.

Pornchai C., Singh J. G, Weerakorn O., Anurag K. S. (2016) Economic and Environmental Impact Assessment with Network Reconfiguration in Microgrid by using Arti. International Conference and Utility Exhibition on Green Energy for Sustainable Development. Bangkok, Thailand, 14-16 September 2016.

Mostafa S. M. G., Singh J. G., Masrur H., Shahid M. U. (2016). A Prospective Model of Bangladesh Electricity Market. International Conference on Innovations in Science, Engineering and Technology. Chittagong, Bangladesh, 28-29 October 2016.

Tristan G. M. J., Singh J. G., Watcharakorn P. (2016). Small Signal Stability and Transient Stability Analysis on the Philippine-Sabah Power Interconnectio. International Conference and Utility Exhibition on Green Energy for Sustainable Development. IEEE. Bangkok, Thailand, 14-16 September 2016.

Watcharakorn P., Singh J. G., Tristan G. M. J. (2016). Modeling and Performance Assessment of the Thai National Power Grid Considering Wind Farms Integrati. International Conference and Utility Exhibition on Green Energy for Sustainable Development. IEEE. Bangkok, Thailand, 14-16 September 2016.

Nimal M. M., Vivek M., Jai G. S., Reshma Suresh M. P., Sreehari G. N. (2016). Interval effects of different load models on microgrid optimization. International Conference on Recent Trends in Engineering and Material Sciences. Elsevier Perspective in Science. Jaipur, India, 17-19 March 2016.

Vivek M., Nimal M. M., Jai G. S., Reshma S. M. P., Arjun C. U. (2016). Optimal prioritization of reactive power ancillary service utilizing electric vehicles in an autonom. International Conference on Recent Trends in Engineering and Material Sciences. Elsevier Perspective in Science. Jaipur, India, 17-19 March 2016.

Watcharakorn P., Jai G. S., Tristan G. M. J. (2016). Assessment of Fault Ride-Through Capability in Thailand Power Grid Interconnection. International Conference on Recent Trends in Engineering and Material Sciences. Elsevier Perspective in Science. Jaipur, India, 17-19 March 2016.

Tristan G. M. J., Jai G. S., Watcharakorn P. (2016). Power Flow and Small Signal Stability Analysis on the Interconnected Three Isolated Philippine Power. International Conference on Recent Trends in Engineering and Material Sciences. Elsevier Perspective in Science. Jaipur, India, 17-19 March 2016.

Nachapol W., Jai G. S., Bharat S. R. (2016). Load Curtailment Minimization in Intentional Islanded Networks and its Restoration Strategy Consider. PEA Conference. Thailand, 19-20 December 2016.

Kumar S., Thaw T. P. T. (2016). Sustainable Energy and Technology Conference. Bangkok, 23-25 March 2016.

Kumar S., Pallavi D. (2016). Japan ASEAN Science and Technology Innovation Platform (JASTIP) Kick-off Workshop. Bangkok, 29 Faburary 2016.

Pornchai C.h, Jai G. S., Weerakorn O., Anurag S. (2016). Economic Dispatch and Network Reconfiguration of Microgrid Using Artificial Bee Colony Algorithm. International Conference on Congeneration, Small power Plants and District Energy. RERIC/Energy. Bangkok, 14-16 September 2016.

Amrit P., Wannakorn S., Weerakorn O. (2016). Optimal Reconfiguration of Distribution Network with Electric Vehicles Using Particle Swarm. International Conference on Congeneration, Small power Plants and District Energy. RERIC/Energy. Bangkok, 14-16 September 2016.

Amrit P., Wannakorn S., Weerakorn O. (2016). Distribution Network Reconfiguration to Support Electric Vehicles Integration. International Conference on Congeneration, Small power Plants and District Energy. RERIC/Energy. Bangkok, 14-16 Septe-mber 2016.

Arjun C. U., Junghare A. S., Vivek M., Weerakorn O. (2016). PID, Fuzzy and LQR Controllers for Magnetic Levitation System. International Conference on Congeneration, Small power Plants and

District Energy. RERIC/Energy. Bangkok, 14-16 September 2016.

Wannakorn S., Amrit A., Weerakorn O. (2016). Optimal Power Dispatch Considering Wind and Battery Energy Storage Cost Functions Using Stochastic. International Conference on Congeneration, Small power Plants and District Energy. RERIC/Energy. Bangkok, 14-16 September 2016.

7. Doctoral Students' Dissertation

Climate Change Policy Analysis in Southeast Asian Countries: A Dynamic General Equilibrium Approach
By: Mr. Kawin Ruamsuke
Supervisor: Dr. Shobhakar Dhakal

Biofuel in Thailand in the Context of ASEAN Economic Community: Analysis of Stakeholders' Perception, Market and Economic Impact
By: Mr. Anuman Chanthawong
Supervisor: Dr. Shobhakar Dhakal

Stochastic Optimal Energy, Reserve and Risk Management in Microgrid
By: Mr. Vivek Mohan
Supervisor: Dr. Jai Govind Singh

Renewable Powered Hybrid AC/DC Home Community Grid
By: Mr. Nikhil Sasidharan
Supervisor: Dr. Jai Govind Singh

Power Flow Analysis and ATC Estimation in Transmission and Microgrid Systems
By: Mr. Nimal Madhu M
Supervisor: Dr. Jai Govind Singh

8. Masters Students' Theses and Research Studies

Energy Access in Myanmar: From Vicious to Virtuous Cycle of Development
By: Miss Thaw Thaw Phyu Htoon
Supervisor: Prof. Sivanappan Kumar

Residential Sector Energy Use in Urban Mandalay
By: Miss May Thida Maung
Supervisor: Prof. Sivanappan Kumar (Chairperson), Dr. P. Abdul Salam (Co-chairperson)

Economic and Performance Evaluation of Optimal Diesel-Biodiesel-Ethanol Blends
By: Mr. Sachin Muralee Krishna
Supervisor: Dr. P. Abdul Salam

An Assessment of Sustainable Energy Access in Rural Households: A Case of Kavrepalanchowk District, Nepal
By: Mrs. Pragya Niraula
Supervisor: Dr. Shobhakar Dhakal

Thermal Storage for a Solar Biomas Hybrid Drying System
By: Mr. Vu Hoang Nghia
Supervisor: Dr. P. Abdul Salam

Cost and Reliability Analysis for Off-Grid PV Electrification Options
By: Miss Pallavi Das
Supervisor: Prof. Sivanappan Kumar

Municipal Solid Waste to Energy: A Case Study of Jaffna District, Sri Lanka
By: Mr. Nithianantham Arunprakash
Supervisor: Dr. P. Abdul Salam

A Study on the Reduction of Electricity Consumption and Cost in Some Buildings at AIT
By: Mr. Nutthapong Sivapraphagorn
Supervisor: Prof. Sivanappan Kumar

Eco-District in Thailand: Concept, Guidelines and Design Principles
By: Miss Pokchat Wetchapinant
Supervisor: Prof. Sivanappan Kumar

Maximizing Energy Generation from Photovoltaic Arrays Through Shading Analysis from Restricted Urban Roof Areas
By: Mr. Abhishek Pathak
Supervisor: Prof. Sivanappan Kumar

Optimal Power Dispatch Considering Dispatchable Solar and Wind Generation Using Particle Swarm Optimization
By: Mr. Wannakorn Supingklad
Supervisor: Dr. Weerakorn Ongsakul

Modeling and Stability Analysis of Thailand Power Grid Interconnection
By: Mr. Watcharakorn Pinthurat
Supervisor: Dr. Jai Govind Singh

Optimal Scheduling of Active Distribution Network Considering DG Placement, Network Reconfiguration and Electric Vehicles
By: Mr. Amrit Paudel
Supervisor: Dr. Weerakorn Ongsakul

Production and Combustion Behavior of Rice Straw Pellets
By: Mr. Dao Ngoc Cuong
Supervisor: Dr. P. Abdul Salam

Modelling and Dynamic Performance Analysis of the Philippine-Sabah Power Grid Systems
By: Mr. Tristan Guzman Magallones, Jr.
Supervisor: Dr. Jai Govind Singh

Energy Poverty Assessment of Rural Households: A Case Study in Zalun Township, in Ayeyarwaddy Division in Myanmar
By: Mrs. Yin Min Aye
Supervisor: Dr. Shobhakar Dhakal

4.2.2: SERD – ENVIRONMENTAL ENGINEERING AND MANAGEMENT

1. Introduction

Environmental Engineering at AIT began in 1964 with the need for sanitary engineering to address the problems of providing adequate water supplies and sanitation facilities. This pioneering environmental engineering program has grown into a range of fields needed to tackle the environmental issues facing Asia today.

Environmental Engineering and Management Field of Study is part of the School of Environment, Resources and Development. The overall program looks for solutions to environmental problems, water supply and sanitation, wastewater treatment and disposal systems, air pollution, solid and hazardous wastes, waste minimization, and life cycle assessment, environmental impact assessment and management and environmental toxicology. The three major focal areas are Environmental Technology and Management, Environmental Toxicology, Technology and Management, and Water and Wastewater Engineering.

2. Research Facilities and Laboratories

The Environmental Engineering (EE) Laboratory is housed with facilities to handle a wide range of knowledge and skills in problem solving for industrial needs and analytical works for physical, chemical, microbiological, and environmental parameters such as water and wastewater quality, air pollutants and noise level, and solid waste. For teaching, training and research purposes, the EE laboratory is categorized into three sub-laboratories namely, research, ambient, and environmental research station. For lab and pilot scale testing purposes, the ambient laboratory has furnished with facility to conduct experiments for treating sludge, sewage, air toxics and industrial wastes. It is also housed with advanced water and wastewater treatment units such different membrane bioreactors, and high rate anaerobic treatment processes with methane gas recovery. The Environmental Research Station consists of pilot scale aerobic and anaerobic biological wastewater treatment units, constructed wetlands, waste stabilization ponds, a lysimeters for solid waste treatment, a hazardous wastewater treatment plant and ambient air monitoring station.

Among its major equipment include Gas Chromatograph; High Performance Liquid Chromatograph; Atomic Absorption Spectrometer; Total Organic Carbon Analyzer; Ion Chromatograph, Induced Couple Plasma, UV Spectrophotometer; Supercritical Fluid Extractor; Microwave Digestion System; Primus Thermal Cyclers; Universal Mutation Detection System; Microscope; Microbalance; Micro centrifuge.

3. Faculty and Research Staff

Emeritus Professor

CHONGRAK POLPRASERT, BEng, Chulalongkorn Univ, Thailand; MEng, AIT, Thailand; PhD, Univ of Washington, USA.

Emeritus Professor and Adjunct Faculty *(Hazardous Waste Engineering; Resources Recovery; Sanitation)*

Full-time Faculty

AJIT P ANNACHHATRE, BTech, IIT Kanpur, India; PhD, IIT Bombay, India.

Professor *(Anaerobic Wastewater Treatment; Biofilm Processes; Environmental Biotechnology; Environmental Impact Assessment; Mathematical Modeling)*

CHETTIYAPPAN VISVANATHAN, BTech, IIT, Madras, India; MEng, AIT, Thailand; PhD, Institut National Polytechnique, Toulouse, France.

Professor *(Cleaner Production; Industrial Environment Management; Membrane Technology for Water and Wastewater Treatment; Solid Waste Management)*

NGUYEN THI KIM OANH, Dipl Eng, Odessa Hydrometeorology Institute, Ukraine; MEng, DEng, AIT, Thailand.
Professor *(Air Pollution Engineering and Management; Transboundary Pollution; Air Pollution and Climate Interaction; Environmental Monitoring and Modelling; Exposure Assessment; Integrated Industrial Environment Management; Meteorology and Climate Science)*

OLEG V SHIPIN, PhD, Inst of Biochemistry and Physiology of Microorganisms, Moscow, Russia.

Associate Professor *(Ecological Engineering for Climate Change Adaptation; Environmental Impact Assessment; Microbial Biotechnology and Nanotechnology; Natural Systems (ponds and wetlands) as Wastewater Treatment Systems; Microbial Aspects of Environmental Engineering; Health and Ecological Risk assessment)*

THAMMARAT KOOTATEP, BEng, Chiangmai Univ, Thailand; MEng, DEng, AIT, Thailand.

Associate Professor *(Decentralized Waste and Wastewater Treatment Systems; Eco-engineering Technology for Waste and Wastewater Treatment and Management; Environmental Health and Sanitation)*

Visiting, Adjunct and Affiliated Faculty

- ***Visiting and Adjunct Faculty***

ANGELES MENDOZA SAMMET, BSc, MSc, UNAM, Mexico; PhD, Calgary Univ, Canada

Visiting Faculty *(Corporate social responsibility, Natural resource development & community conflict, Multi-level governance, Stakeholder analysis, Environmental management systems, Ecosystem-based management, and Evaluation of management effectiveness).*

ATITAYA PANUVATVANICH, BEng, Rangsit Univ, Thailand; MEng, D.Eng, AIT, Thailand

Affiliated Faculty *(Environmental Toxicology, Technology and Management)*

ELDON R. RENE, BEng, Annamalai Univ, India; MTech, NIT Karnataka, India; PhD, IIT-Madras, India.

Adjunct Faculty *(Resource Recovery; Chemical Engineering; Pollution Prevention and Control Technologies; Environmental Biotechnology)*

DIDIN AGUSTIAN PERMADI, BEng, ITB, Indonesia; MEng, DEng, AIT, Thailand

Affiliated Faculty *(Emission Inventory of Primary Aerosols and Ozone Precursors; Photochemical Smog 3D Modelling for Urban and Regional Scale; Environmental Impact Assessment (EIA) Study: Document Arrangement and Environmental Monitoring Plan)*

JOHAN J.A. VAN BRUGGEN, MSc, Free University, Amsterdam; PhD, Catholic Univ of Nijmegen, The Netherlands

Visiting Faculty (M*icrobiology, Wastewater treatment, Biofilm in wetlands, and Environmental issues in general)*

KARE HELGE KARSTENSEN, BS, MS, Univ of Oslo; MBA, Heriott Watt Univ, UK; MLaw, Univ of Oslo; DrSc, Norwegian Univ of Science and Technology, Trondheim, Norway.

Visiting Faculty *(Sustainable Management of Industrial and Hazardous Wastes; Management of Hazardous Chemicals, POPs and Obsolete Pesticides; Sustainable Production of Cement and Co-Processing of Alternative Fuel and Raw Materials and Hazardous Wastes; Control and Minimization of Unintentionally Produced POPs (dioxins, furans, PCBs and HCB) and Application of Best Available Technologies & Best Environmental Practices (BAT/BEP)*

KIMBERLY NEIL IRVINE, BSc, Toronto Univ, Canada; MSc, PhD, McMaster Univ, Canada.

Visiting Faculty *(Hydrology and Water Resource Management, with specific emphasis on evaluating water quality in urban-impacted water bodies)*

PIET LENS, BEng, MEng and PhD, Univ Gent, Belgium.

Visiting Professor *(Environmental Biotechnology; Biofilms; Sulfur Biotechnology; Metal Speciation; Bioavailability and Removal; Natural Treatment Systems; Anaerobic Wastewater and Waste Gas Treatment for Resource Recovery and Reuse)*

SAROJ KUMAR CHAPAGAIN,BSc, Tribhuvan Univ, Nepal; MSc, Ghent Univ, Belgium; PhD, Yamanashi Univ, Japan

Affiliated Faculty *(Innovative Onsite Sanitation Technology, Decentralized Wastewater Treatment, Nutrient Recovery from Wastewater, Groundwater Contamination and Source Identification).*

SHINICHI OKAMOTO, BEng, MEng, DEng, Waseda Univ, Japan.

Visiting Professor *(Statistics and Environmental Management Systems).*

SURESH SUNDARAMURTHY, BTech, Pondicherry Uni, India; ME, Annamalai Univ, India; PhD, IIT, Roorkee, India.

Visiting Faculty (*Separation process; Catalysis & reactor design; Wastewater treatment; Waste-to-energy conversion; Waste utilization; Climate change; Process safety, and Disaster management).*

TAIKI MORI, BE, Nagasaki Inst of Applied Science; PhD, Nagasaki Univ, Japan.

Adjunct Faculty *(Environment chemistry and Environment risk research).*

- ***Research Staff***

ACHARA TAWEESAN, PhD
Research Specialist *(Manages research projects; assists in project coordination, prepares project reports, prepares project budgets and manages project finances; assist team leader in training activities)*

ANANSIT PHITHAYAPHONGSAKORN, MBA
Research Associate *(Manages research projects, prepares technical reports and presentations)*

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Research Associate *(Manages research projects, prepares technical reports and presentations)*

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Research Associate *(Manages research projects, prepares technical reports and presentations)*

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Research Specialist *(Manages research projects; assists in project coordination, prepares project reports, prepares project budgets and manages project finances; assist team leader in training activities)*

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Research Assistant *(Laboratory operating and sample analysis, prepares technical reports and presentations, collaborating with research partners)*

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SU SU MYAT, MSc
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SUPATCHAI RUJAKOM, MS
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technical reports and presentations, collaborating with research partners)

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WITCHUDA TASSANASUWAN, MSc
Research Associate *(Manages research projects, prepares technical reports and presentations)*

WUTYI NAING, MSc
Research Associate *(Manages research projects, prepares technical reports and presentations)*

4. Grants and Sponsored Research Completed in 2016

1st Specialist Conference on Municipal Water Management and Sanitation in Developing Countries: From Toilet to Source-Accelerating Uptake of Sustainable and Integrated Wastewater Management Solutions
Duration: 1-Mar-14 to 31-Dec-16
Project Investigator(s): Dr. Thammarat Koottatep
Sponsors: International Water Association, Japan Sanitation Consortium, Wastewater Management Authority (Thailand), Faculty of Engineering (Prince of Songkhla University, Thailand) and Participants
Total Contracted Amount (THB): 1,434,745.00

Application of Membrane Bio Reactor (MBR) and Membrane Distillation (MD) Technologies in Water Treatment
Duration: 1-Jun-15 to 30-Nov-16
Project Investigator(s): Prof C. Visvanathan
Sponsor: Sumitomo Electric Industries Ltd., Japan
Total Contracted Amount (THB): 301,800.00

Assessment of Impacts of the Emission Reduction Measures of Short-lived Climate Forcers on Air Quality and Climate in Southeast Asia
Duration: 1-Jun-12 to 31-Aug-16
Project Investigator(s): Prof. Nguyen Thi Kim Oanh
Sponsors: United States Agency for International Development (USAID) / National Academy of Sciences (NAS)
Total Contracted Amount (THB): 6,914,459.00

Developing a Background Paper On "3RS for Water security in Asia and the Pacific
Duration: 15-May-15 to 15-May-16
Project Investigator(s): Prof C. Visvanathan
Sponsor: United Nations Development of Economic and Social Affairs (UNDESA)
Total Contracted Amount (THB): 293,000.00

Development of Innovative Technology and Integrate Management Systems for Sustainable Sanitation in ASEAN
Duration: 10-Dec-13 to 30-Jun-16
Project Investigator(s): Dr. Thammarat Koottatep
Sponsor: Korea Institute of Science and Technology (KIST)
Total Contracted Amount (THB): 2,420,000.00

Evaluation of Two Technologies for Heavy Metals Removal under Tropical Condition
Duration: 1-Oct-12 to 31-Oct-16
Project Investigator(s): Prof. Ajit P. Annachhatre
Sponsor: UNESCO-IHE Partnership Research Fund (UPaRF), The Netherlands
Total Contracted Amount (THB): 497,050.00

Identifying Current Situation on Multi-pollutants and Multi-effect (MPME) in Thailand and Indonesia
Duration: 20-Dec-15 to 31-May-16
Project Investigator(s): Prof. Nguyen Thi Kim Oanh
Sponsor: International Business Institute Co., Ltd.
Total Contracted Amount (THB): 94,613.00

Professional Masters in Environmental Engineering and Management Batch III
Duration: 01-May-14 to 31-Dec-16
Project Investigator(s): Prof. Nguyen Thi Kim Oanh
Sponsor: Environmental Government and PVT Companies, Vietnam
Total Contracted Amount (THB): 2,169,000.00

Reports on Drinking Water Services and Technologies in Asian Countries
Duration: 1-Apr-15 to 30-Sep-16
Project Investigator(s): Prof. C. Visvanathan

Sponsor: Japan water research Centre (JWRC)
Total Contracted Amount (THB): 280,575.00

Strengthening Capacity of Policymakers in South-East Asia (SEA) to Promote Policies and Developing Plans for Improved Wastewater Treatment and Reuse in Urban and Peril-Urban Areas
Duration: 1-Dec-14 to 30-Jun-16
Project Investigator(s): Dr. Thammarat Koottatep
Sponsor: United Nations Economic and Social Commission for Asia and the Pacific (ESCAP)
Total Contracted Amount (THB): 1,159,309.00

The National Centre of Competence in Research (NCCR) North-South
Duration: 2002 to 31-Dec-16
Project Investigator(s): Dr. Thammarat Koottatep
Sponsor: NCCR North-South Center for Development and Environment, Switzerland
Total Contracted Amount (THB): 40,817,025.00

5. On-going Grants and Sponsored Research

3R and Resource Efficiency Toward Resilient Cities and Societies Implication toward SDG
Duration: 1-Sep-16 to 1-Nov-17
Project Investigator(s): Prof. C. Visvanathan
Sponsor: The United Nations Centre for Regional Development (UNCRD)
Total Contracted Amount (THB): 325,000.00

A Study on Urban Air Pollution Improvement in Asia
Duration: 31-Mar-15 to 31-Dec-17
Project Investigator(s): Prof. Nguyen Thi Kim Oanh
Sponsor: Japan International Cooperation Agency (JICA) Thailand Office
Total Contracted Amount (THB): 3,044,338.00

Community Scale, Decentralized Anaerobic Digestion for Energy and Resource Recovery
Duration: 1-May-16 to 31-Oct-18
Project Investigator(s): Prof. C. Visvanathan, Dr. P. Abdul Salam
Sponsor: The British Council
Total Contracted Amount (THB): 12,430,000.00

CTCN Response Plan: Feasibility Study for Setting up a Watch Observatory for Health and Environment Risks in Pointe Noire, Republic of the Congo (Brazzaville)
Duration: 10-Jun-2016 to 10-Sep-2016
Project Investigators: Dr. Oleg Shipin
Sponsor: UNEP CTCN Copenhagen
Total Contracted Amount (THB): 280,000.00

Development and Dissemination of Fecal Sludge Management Toolkit for Investors, Planners and Consultants
Duration: 1-Oct-14 to 30-Nov-17
Project Investigator(s): Dr. Thammarat Koottatep
Sponsor: Bill & Melinda Gates Foundation
Total Contracted Amount (THB):23,592,320.00

Development of the Co-Benefit Action Plan for Bandung City
Duration: 1-Jul-15 to 30-Sep-17
Project Investigator(s): Prof. Nguyen Thi Kim Oanh
Sponsor: Institute for Global Environmental Strategies (IGES)
Total Contracted Amount (THB): 1,143,090.00

Turning Rice Straw into Cooking Fuel for Air Quality and Climate Co-benefit in Selected GMS Countries
Duration: 15-Dec-14 to 31-Mar-17
Project Investigator(s): Prof. Nguyen Thi Kim Oanh
Sponsor: Stockholm Environment Institute (SEI) Asia Center
Total Contracted Amount (THB): 1,989,500.00

Development of Water Treatment Equipment for High-rate Sedimentation Filtration System Suitable for Thailand Water Quality Characteristics
Duration: 1-Jun-15 to 30-Nov-17
Project Investigator(s): Prof. C. Visvanathan
Sponsor: NoxKorea, Co., Korea
Total Contracted Amount (THB): 990,000.00

Innovative Toilet City: From Reinventing to Realization at Scale
Duration: 1-Sep-16 to 28-Feb-19
Project Investigator(s): Dr. Thammarat Koottatep
Sponsor: The Thailand Research Fund (TRF)
Total Contracted Amount (THB): 5,044,150.00

Reports on Drinking Water Services and Technologies in Asian Countries - Phase II
Duration: 1-Apr-16 to 30-Sep-17
Project Investigator(s): Prof. C. Visvanathan
Sponsor: Japan Water Research Center (JWRC)
Total Contracted Amount (THB): 273,000.00

South-South Technical Assistance Response Plan for Development of the National Low Carbon Strategy, Technology Needs Assessment, Climate Finance in Central African Republic (C.A.R.)
Duration: 20-Dec-16 to 19-Dec-17
Project Investigator(s): Dr. Oleg Shipin
Sponsor: CTCN-PCA, UNEP
Total Contracted Amount (THB): 210,000.00

Stimulating Local Innovation on Sanitation for the Urban Poor in Sub-Saharan and Southeast Asia
Duration: 8-Feb-12 to 31-Dec-17
Project Investigator(s): Dr. Thammarat Koottatep
Sponsor: Bill & Melinda Gates Foundation
Total Contracted Amount (THB): 26,124,360.00

Sustainability Issues due to Coal Ash from Coal fired Power Plants
Duration: 1-Sep-10 to 31-Aug-18
Project Investigator(s): Prof. Ajit P. Annachhatre
Sponsor: SDCC/AIT France Network
Total Contracted Amount

(THB): 1,440,000.00

Sustainable Decentralized Wastewater Management in Developing Countries
Duration: 15-Oct-11 to 31-Mar-18
Project Investigator(s): Dr. Thammarat Koottatep
Sponsor: Bill & Melinda Gates Foundation
Total Contracted Amount (THB): 149,991,660

Towards an Open Resources upon Services: Cloud Computing of Environmental Data TORUS
Duration: 15-Oct-15 to 14-Oct-18
Project Investigator(s): Prof. Nguyen Thi Kim Oanh
Sponsor: Erasmus+ Capacity Building
Total Contracted Amount (THB): 1,814,296.00

Turning Rice Straw into Cooking Fuel for Air Quality and Climate Co-benefit in Selected GMS Countries
Duration: 15-Dec-14 to 31-Mar-17
Project Investigator(s): Prof. Nguyen Thi Kim Oanh
Sponsor: Stockholm Environment Institute (SEI) Asia Center
Total Contracted Amount (THB): 1,989,500.00

6. Publications

Book and Monographs

Asokbunyarat V., Piet N.L. Lens, Ajit P. (2016). Annachhatre Environm-ental Chemistry for a Sustainable World. In Heavy Metal Removal from Groundwater by Permeable Reactive Barrier, Springer publication.

Book Chapters

Asokbunyarat V., Piet N.L. Lens, Ajit P. Annachhatre(in printing). Heavy Metal Removal from Groundwater by Permeable Reactive Barrier. In Eldon R. Rene, Erkan Sahinkaya, Alison Lewis and Piet N. L. Lens. Sustainable Heavy Metal Remediation: Principles and Processes, Vol: 8, Springer publication.

Visvanathan C,, Prakriti K. (2016). Public Engagement for Implementation of Waste Reduction and Recycling Policies. In J. W. C. Wong. Sustainable Solid Waste Management. American Society of Civil Engineers, USA. ISBN 978-0-7844-1410-1.

Papers in Refereed Journal

Sumprasit N., Wagle N., Glanpracha N., Annachhatre A. P. (2016). Biodiesel and biogas recovery from Spirulina platensis. International Bio deterioration and Biodegradation, Vol. 0, 0-0.

Orakwue E. O., V. Asokbunyarat, E. R. Rene, P. N.L. Lens, A. P. Annachhatre (2016). Adsorption of Iron(II) from Acid Mine Drainage Contaminated Groundwater Using Coal Fly Ash, Coal Bottom Ash, and Bentonite Clay. Water, Air, and Soil Pollution, Vol: 227, 74-85. DOI: 10.1007/s11270-016-2772-8.

Sen R., S. Wiwatpanyaporn, A. P. Annachhatre (2016). Influence of binders on physical properties of fuel briquettes produced from cassava rhizome waste. International Journal of Environment and Waste Management, Vol: 17, 158 - 175.

Sen R., T. Chairassamee, A. P. Annachhatre (2016). Influence of air flow rates and C/N ratios on bio drying of cassava peel waste. Environmental Engineering and Management Journal. Vol: 0.

Glanpracha N., Ajit P. Annachhatre (2016). Anaerobic co-digestion of cyanide containing cassava pulp with pig manure. *Bioresource Technology*, Vol: 214, 112 - 121.

Neelima A. M., Ghaffar A., Kabirul A. M., Waranya W., Oleg S., Pongrama R., Husna P. N.. (2016). Migration, Health and Socio-Environmental Safety Net among Children of Dhaka, Bangladesh. Archives of Environmental & Occupational Health. D
Doi: 10.1080/19338244.2016.1254081.

Asami T., Katayama H., Torrey J.R., Visvanathan C., Furumai H. (2016). Evaluation of Virus Removal Efficiency of Coagulation-Sedimentation and Rapid Sand Filtration Processes in a Drinking Water Treatment Plant in Bangkok, Thailand. Water Research. Vol: 101, 84-94.

Park D. H., Visvanathan C. (2016). Technology Development Trajectory for Drinking Water Treatment: A Comparative Study between South Korea, Thailand, and Lao PDR. Journal of Water Supply: Research and Technology AQUA. Vol: 66, 417 – 430.

Park D.H., Kashyap P., Visvanathan C. (2016). Comparative Assessment of Green Supply Chain Management (GSCM) in Drinking Water Service Industry in Lao PDR, Thailand, and South Korea. Desalination and Water Treatment. Page: 28684 – 28697.

Duyen P. M., Paul J., Rattanaoudom R. R., Visvanathan C. (2016). Feasibility of Sweeping Gas Membrane Distillation on Concentrating Triethylene Glycol from waste streams. Journal of Chemical Engineering & Processing: Process Intensification. Vol: 110, 225 – 2340.

Heydarifard S., Nazhad M., Huining X., Shipin O., Olson J. (2016). Water resistant cellulosic filter for aerosol entrapment and water purification. Part I - Production of water resistant cellulosic filter. Journal of Environmental Technology. Vol: 37, 1716-1734. Doi: 10.1080/09593330.2015.1130174.

Papers in Conference Proceedings

Shipin O. (2016). "Edible" and less "palatable" conservation problems of gloablly important Mekong wetlands. The Wetlands Alliance International Conference. Siem Reap, Cambodia, 19-21 January 2016. Publisher: SIDA.

Gudivada P., Shipin O. (2016). Assessment of Community Based Environmental Management in Xuan Thuy National Park, Nam Dinh province. The Wetlands Alliance International Conference. Siem Reap, Cambodia, 21 January 2016. Publisher: SIDA.

Peddada H., Shipin O. (2016). Environmental Impacts of Community

Interventions in the ecologically important Mekong island, Kratie. The Wetlands Alliance International Conference. Siem Reap, Cambodia, 21 January 2016. Publisher: SIDA.

Tangkan S., Shipin O. (2016). Most Significant Livelihood and Ecological Changes due to Community Interventions in the Thu Bon V. The Wetlands Alliance International Conference. International Confer-ence. Siem Reap, Cambodia, 21 January 2016. Publisher: SIDA.

Dorji G., Shipin O. (2016). Community-based Solid Waste Management in a sensitive Mekong River Ecosystem: A case of Koh Rongnieu. The Wetlands Alliance International Conference. Siem Reap, Cambodia, 21 January 2016. Publisher: SIDA.

Shipin O., Shinde V., Phanthuwongpakdee J. Community-based monitoring of ecological health of Lower Songkhram River Basin, NE Thailand. Gr.Mekong Forum on Water, Food, Energy. Bangkok, 9-11 November 2016. Publisher: CGIAR.

Park D.H., Visvanathan C. (2016). Comparative Assessment of Green Supply Chain Management (GCSM) in Drinking Water Service Industry. The 12th International Symposium on Southeast Asian Water Environment (SEAWE12). 28-30 November, 2016.

Milintawisamai P., Sanguanpak S., Chiemchaisri C., Chiemchaisri W., Visvanathan C. (2016). Application of Direct Contact Membrane Distillation to the Treatment of Raw and Biologically Treated. The 12th International Symposium on Southeast Asian Water Environment (SEAWE12). Hanoi, Vietnam, 28-30 November, 2016.

Lu L., Siwaporn S., Visvanathan C. (2016). Performance evaluation of attached growth membrane bioreactor for treating polluted surface water. 9th CESE conference (CESE 2016). Kaohsiung, Taiwan, 6-10 November, 2016.

Visvanathan C., Bhari B. (2016). 3R and Resource Efficiency Towards Resilient Cities: Implications Towards SDG. 7th Regional 3R Forum in Asia and the Pacific. Adelaide, Australia. 2-4 November, 2016.

Visvanathan C. (2016). Sustainable Consumption and Production Main streaming SCP in Education. SACEP Forum Sustainable Consumption and Production. Chilaw, Sri Lanka, 20-22 October 2016.

Visvanathan C., Kashyap P. (2016). Waste Management Business Opportunities for (Informal and Formal) Private Sector. Euroasia 2016 Waste Management Symposium. 2-4 May 2016.

Visvanathan C. (2016). 3R Technology Transfer in Waste Management Sector. Creation and Diffusion of Technology. IIT Mumbai, India, 18 March 2016.

Visvanathan C. (2016). How Sustainable Consumption and Production can contribute to Climate Change Mitigation and Adaptation. SWITCH-Asia Regional roundtable and networking conference on The role of SCP in Climate Change. Colombo, Sri Lanka, 18 October 2016. (Papers in Workshop).

Visvanathan C. (2016). Membrane Based Surface Water Treatment Systems: Microfiltration to MBR. International Workshop on Resources Recovery from Membrane Biological Reactors (MBRs) from Laboratory. Islamabad, Pakistan, 31 March - 1 April, 2016.

Visvanathan C., Anbumozhi V. (2016). Global Economic Transitions and Next Evolutionary Acts: Progress of Circular Economy in ASEAN. Public Private Dialogue on - Industry 4.0: Empowering ASEAN for Circular Economy. Bangkok, Thailand, 5-6 June, 2016.

Visvanathan C. (2016). Moving Towards Zero Liquid Discharge: Concerns, Opportunities and Issues in Textile Industry through. Australia India Joint Workshop on Advancing Research Cooperation on Water Scarcity and Ways. Organized by RMIT University, Melbourne, Australia, 9-10 June, 2016.

Visvanathan C. (2016). Membrane Technology for Surface Water Treatment: From Microfiltration to Membrane Bioreactor. 9th CESE conference (CESE 2016). Kaohsiung, Taiwan. 6-10 November 2016.

Visvanathan C. (2016). Waste, Climate and Sustainable Development Convergence: AITs Contribution Toward Sustainable Waste. International Forum on Sustainable Future in Asia: Converting Aspirations to Actions. AIT, Bangkok, Thailand, 27-28 January, 2016.

Visvanathan C. (2016). Co-benefits of 3R in the Context of Urban Solid Waste Management. third international workshop on Energy, Environment and Ecosystem (3E) Nexus Initiative for Sustainability. Da Nang, Vietnam, 14-15 January 2016.

Bhari B., Shommachack P. , Visvanathan C. (2016). Development of Water Safety Plan for Vientiane City, Lao PDR. International Symposium on Southeast Asian Water Environment (SEAWE12). Hanoi, Vietnam, 28-30 November 2016.

Bhari B., Phommachack S. , Visvanathan C. (2016). Development of Water Safety Plan for Vientiane City, Lao PDR. International Symposium on Southeast Asian Water Environment (SEAWE12). Hanoi, Vietnam, 28-30 November 2016.

Pimluck Kijjanapanich, Ajit P. Annachhtre, Giovanni Esposito, Piet N L. Lens (2016). Sulfate reduction for remediation of gypsiferous soils and solid wastes. Proceedings of CONTAMINATED SEDIMENTS – Characterization and Remediation, 23-27 May 2016, Delft, Netherlands.

7. Doctoral Students' Dissertation

Analysis of Sustainability Aspects of Sanitation Planning Approaches in Urban/Peri-urban Areas of Nepal
By: Mr. Mingma Gyalzen Sherpa
Supervisor: Dr. Thammarat Koottatep

Assessment of Factors Affecting the Performance of Environmental
By: Miss Achara Taweesan
Supervisor: Dr. Thammarat Koottatep

Development of Integrated Management Approach to Reduce Risk of Exposure to Dust Storms in Northeast Edge of Taklimakan Desert, Xinjiang, China
Mr. Aishajiang Aili
Supervisor: Prof. Nguyen Thi Kim Oanh

Evaluation of Hydrothermal Carbonization Reactions for Faecal Sludge Treatment and Hydrochar Production
By: Mr. Krailak Fakkaew
Supervisor: Dr. Thammarat Koottatep

Evaluation of Performance Efficiency and Technological Advancement in the Drinking Water Sector: A Comparative Study of South Korea, Thailand and Lao PDR
By: Mr. Dong Hak Park
Supervisor: Prof. Chettiyappan Visvanathan

8. Masters Students' Theses

Assessment of Human Exposure to Toxic Air Pollutants Released from Traffic in Urban Area of Hanoi, Vietnam
By: Miss Pham Minh Hang
Supervisor: Prof. Nguyen Thi Kim Oanh

Utilization of Hydrochar Produced from Hydrothermal Carbonization of Faecal Sludge for Use as an Anode in Lithium-ion Battery
By: Miss Sopida Khamyai
Supervisor: Dr. Thammarat Koottatep

Treatment of Solar Septic Tank Effluent by Lateritic Soil-Based Constructed Wetlands
By: Mr. Suphatchai Rujakom
Supervisor: Dr. Thammarat Koottatep

Treatment Performance of the Double Ring Cess-To-Fit Technology, Evaluated Using Computational Fluid Dynamic Analysis
By: Miss Tippawan Singhopon
Supervisor: Dr. Thammarat Koottatep

Strategies for Sustainable Phosphorus Management and Struvite Recovery from Digested Sludge
By: Miss Prashalini Kalimuthu
Supervisor: Prof. Ajit P. Annachhatre

Characterization of Emission from Cookstoves Using Rice Straw Derived Fuel for Quantification of Air Quality and Climate Co-Benefits
By: Miss Donnapa Jittadejchaiyapath
Supervisor: Prof. Nguyen Thi Kim Oanh

Removal of Arsenic (As+3) from Aqueous Solution by Uncoated and Iron Coated Sand
By: Mr. Parunyoo Rattanaburee
Supervisor: Prof. Ajit P. Annachhatre

Greening Supply Chain Management of the Drinking Water Sector in Thailand
By: Miss Wipawee Kerdsawang
Supervisor: Prof. Chettiyappan Visvanathan

Determination of Emission Factors and Compositions of Particulate Matter Emitted from Field Burning of Maize Crop Residue in Thailand
By: Miss Phitsucha Deeharing
Supervisor: Prof. Nguyen Thi Kim Oanh

Evaluation of Photobioreactor Coupled in Cess-To-Fit Model for Treating Blackwater
By: Mr. Chawalit Chaiwong
Supervisor: Dr. Thammarat Koottatep

Biosorption of Arsenic (III) from Aqueous Solution by Blue-Green Algae Spirulina Platensis
By: Miss Jittima Suttipotipong
Supervisor: Prof. Ajit P. Annachhatre

Monitoring and Source Apportionment by Receptor Modeling of Particulate Matters in Bangkok Metropolitan Region
By: Miss Atitaya Saensud
Supervisor: Prof. Nguyen Thi Kim Oanh

Characterization of Gaseous Emission from Field Burning of Maize Crop Residues for Estimation of Annual Emission Load in Thailand
By: Mr. Athiwat Yongstar
Supervisor: Prof. Nguyen Thi Kim Oanh

Simultaneous Measurements of Ionic Composition of Rain Water and Ambient Concentration of Acid Gases to Assess Acid Deposition in Bangkok Metropolitan Region
By: Miss Malulee Leamlaem
Supervisor: Prof. Nguyen Thi Kim Oanh

Investigating the Potential of Concentrating Dyes from Textile Waste-water Using Membrane Distillation Process
By: Miss Diu Do Thi
Supervisor: Prof. Chettiyappan Visvanathan

Assessment of Sustainability of the Proposed Eco-City of Kigamboni, Dar es Salaam (Tanzania) with a Focus on Wastewater Management
By: Mr. Michael D. Malabeja
Supervisor: Dr. Oleg Shipin (Chairperson), Dr. Wim J.A.M. Douven (Co-chairperson)

Fluoride Removal from Groundwater Using Low Cost Bio-Adsorbents
By: Miss Berhane Desta Gebrewold
Supervisor: Prof. Ajit P. Annachhatre (Chairperson), Dr. Eldon Raj Rene (Co-chairperson)

Analysis of Community-Based Solid Waste Management in Rural Island Communities: A Case Study of Mekong River Island, North-East Cambodia
By: Mr. Gyem Dorji
Supervisor: Dr. Oleg Shipin (Chairperson), Dr. Wim J.A.M. Douven (Co-chairperson)

Enhanced Biogas Production from Spirulina Plantensis: Pretreatment and Co-Digestion with Cassava Pulp
By: Miss Nisha Wagle
Supervisor: Prof. Ajit P. Annachhatre

Material Flow Analysis of Absorbent Hygiene Products Waste in Thailand
By: Mr. Thet Ko Win
Supervisor: Prof. Chettiyappan Visvanathan

Assessment of Environmental Impacts of Small-Holding Agroforestry Projects in Central and North Eastern Thailand
By: Miss Piracha Toonsakul
Supervisor: Dr. Oleg Shipin

Development of a Water Safety Plan, Vientiane City, Lao PDR
By: Mr. Sinbandid Phommachack
Supervisor: Prof. Chettiyappan Visvanathan

Performance Assessment of Selected Wireless Sensors for Biomass Smoke Air Quality Monitoring
By: Mr. Huynh Tan Loi
Supervisor: Prof. Nguyen Thi Kim Oanh

Biokinetics and Performance Studies on Attached Growth Membrane Bioreactor for Polluted Surface Water Treatment
By: Miss Siwaporn Suwanate
Supervisor: Prof. Chettiyappan Visvanathan

Biodiesel Production from Spirulina Platensis: Selection of Cell Disruption Technique, Organic Solvent and Transesterification Catalyst
By: Mr. Nattapon Sumprasit
Supervisor: Prof. Ajit P. Annachhatre

Applied Computational Fluid Dynamics Analysis in Optimizing Solid-Liquid Separators
By: Mr. Thananun Plangarom
Supervisor: Dr. Thammarat Koottatep

Performance of UV LED and LP UV Disinfection Systems on Bacteriophage MS2 Inactivation for Domestic Wastewater
By: Miss Poonyanooch Suwan
Supervisor: Dr. Thammarat Koottatep

Key Determinants of Fecal Sludge Management Planning in Myanmar and Thailand: Case Studies in Yangon City and Nonthaburi Municipality
By: Miss Ei Thet Mon
Supervisor: Dr. Thammarat Koottatep

Key Determinants of Fecal Sludge Management Planning in Myanmar and Thailand: Case Studies in Mandalay City and Nonthaburi Municipality
By: Miss Wutyi Naing
Supervisor: Dr. Thammarat Koottatep

Environmental Impact Assessment of Development Interventions in Mangrove Areas: A Case of Thu Bon Estuary, Quang Nam Province, Central of Vietnam
By: Mr. Somkid Tangkan
Supervisor: Dr. Oleg Shipin

Mapping Noise Pollution for a Ring Road in Hanoi, Vietnam
By: Mr. Nguyen Van Chien
Supervisor: Prof. Nguyen Thi Kim Oanh

Ecological Engineering for a Sustainable AIT Eco-campus: Water Quality-Biodiversity-Food Nexus in Ponds and Canals
By: Mr. Armaan Jain
Supervisor: Dr. Oleg Shipin

Development of a Novel and Environmentally Friendly Conversion of Sugarcane Bagasse into Nanocellulose
By: Mr. Balavenkat Karthik Nagabhyru
Supervisor: Dr. Oleg Shipin

Biogas Generation from Sugar Industry Press-Mud: A Case Study of India
By: Mr. Meesala Hari Prabhu
Supervisor: Prof. Ajit P. Annachhatre

Efficient Management and Recycling of Used Lead Acid Batteries
By: Mr. Rishyankh Das Alladi
Supervisor: Prof. Ajit P. Annachhatre

Assessment of Environment Impacts of Community Waste Management Interventions: A Case of Xuan Thuy National Park, Northern Vietnam
By: Mr. Gudivada Sai Praneeth
Supervisor: Dr. Oleg Shipin

Recycling Potential of Construction and Demolition Waste: A Case Study of Thailand
By: Mr. Syed Sajid Sohail
Supervisor: Prof. Chettiyappan Visvanathan

Development of Hierarchical Micro-Nanostructured Superhydrophobic Surfaces for Anti-Biofouling Applications in Marine Environments
By: Mr. Ravula Surya Venkata Durga Anvesh
Supervisor: Dr. Oleg Shipin (Chairperson), Prof. Gabriel Louis Hornyak (Co-chairperson)

Cost-Benefit Analysis of Bio-Diesel Production from Algae
By: Mr. Bobbili Krishna Chaitanya
Supervisor: Prof. Ajit P. Annachhatre

Life Cycle Assessment of Biodiesel from Algae
By: Mr. Kovvuri Krishna Swaroop Reddy
Supervisor: Prof. Ajit P. Annachhatre

Life Cycle Assessment of Electricity Generation from Sugarcane Bagasse and Molasses
By: Mr. Lohit Penumatsa
Supervisor: Prof. Ajit P. Annachhatre

Environmental Impacts of Community Interventions in the Ecologically Important Mekong Island in Kratie Province, Cambodia
By: Mr. Sai Hareeshwar Peddada
Supervisor: Dr. Oleg Shipin

Emission Inventory for Rice Straw Field Open Burning in Guntur (District), Andhra Pradesh, India
By: Mr. Vanama Sai Revanth
Supervisor: Prof. Nguyen Thi Kim Oanh

Plastic Disclosure Project in AIT Campus
By: Mr. Sathi Ayyappa Reddy
Supervisor: Prof. Chettiyappan Visvanathan

Socio-Economic and Environmental Assessment of Wind Energy Projects
By: Mr. Srikar Bajoji
Supervisor: Prof. Chettiyappan Visvanathan

Performance of Vermifiltration for Faecal Sludge Treatment using Suitable Bedding Material
By: Miss Sumavalli Kalahasty
Supervisor: Dr. Thammarat Koottatep

Start-up Potential of Eco-Engineered Vertical Vegetation (Green Walls) for Nutrient Recycling, Food Production, Energy Conservation and Landscape Improvement on AIT Eco-Campus
By: Mr. Chinnam Trinadh Reddy
Supervisor: Dr. Oleg Shipin (Chairperson), Dr. Vilas Nitivattananon (Co-chairperson)

Application of Satellite Data for Monitoring of Particulate Matter in New Delhi, India
By: Miss Bonthala Sohini
Supervisor: Prof. Nguyen Thi Kim Oanh

AIT Campus Pollution Mitigation by Eco-Engineered Green Walls Connected to Wetlands: Water, Food, Energy Nexus
By: Mr. Ranjith Krishna Yerramsetti
Supervisor: Dr. Oleg Shipin

Potential for Eco-Engineered Green Walls and Green Roofs on AIT Eco-campus with regard to Water, Energy, Food Nexus
By: Mr. Nelapatla Sairam
Supervisor: Dr. Oleg Shipin

Eco-Engineering Wetlands for Pollution Mitigation on AIT Eco-Campus: Water Quality-Food-Biodiversity Nexus
By: Mr. Buddharaju Lakshman Kumar Varma
Supervisor: Dr. Oleg Shipin

4.2.3: SERD – CLIMATE CHANGE AND SUSTAINABLE DEVELOPMENT

1. Introduction

. Climate change is the most important international agenda kept at the forefront of everybody that requires mitigation and adaptive solutions for coping with current and changing scenario of the future. The associated issues and concerns are many from local to global level that raises a common question of sustaining our living planet. The issues are primarily linked with carbon emissions leading to global warming, extreme weather events, increasing trend and intensities of natural hazards and disasters, melting of glaciers, loss of biodiversity, threatened ecosystems, uncertainty of water and food security, etc. CCSD program focuses on climate change mitigation, impacts and adaptation at the cross-cutting issues.

2. What should graduates expect?

- Work with sectorial experts in the areas of CCSD with critical thinking
- Carry out climate change induced impact assessment, scenario building and identification of potential impacts,
- Initiate climate change induced impact assessment and adaptive measures,
- Undertake policy analysis and development (integration, application and mainstreaming),
- Negotiate and communicate effectively,
- Acquire methods, tools and techniques for analysis, understanding and dissemination, and
- Conduct technology assessment and adopting climate friendly technology for mitigation and adaptation

3. Research Areas:

- Technologies and policies for greenhouse gas emission mitigation energy and sustainable development
- Biomass and Bioenergy for climate change mitigation, Clean Coal Technologies, Carbon Capture and Storage
- Participatory scenario design
- Energy and climate policies, economics of climate change, cities and climate change
- International development, NGOs, adaptation to climate change
- Climate change and water resources, climate change impact and adaptation assessment

4. Preferred Background for:

MASTER'S PROGRAM

Undergraduate degree in geography, agriculture, economics, architecture, sociology, engineering, anthropology, planning, political science, development studies, humanities, biosciences, environmental sciences, energy and forestry.

DOCTORAL PROGRAM

Master's degree in one of the above fields and detailed dissertation research outline must be submitted with application.

For more information, please contact:

Climate Change and Sustainable Development

+66 (0)2 524 6165

+66(0)2 524 6431

EECC-HoD@ait.asia

EECC-secretary@ait.asia

5. Masters Students' Theses

Effect of Silicon Application on Growth and Yield of Rice Under Water Stress

By: Miss Anita Gautam

Supervisor: Dr. Avishek Datta

Effect of Salinity on Growth, Nutrient Contents and Biochemical Parameters of Seedlings of Four Citrus Rootstocks

By: Mr. Ashraful Alam

Supervisor: Dr. Avishek Datta

An Assessment of the Impact of Climate Change on the Inland Capture Fisheries of Hilsa (Tenualosa ilisha): A Case Study in Meghna River, Bangladesh

By: Mr. Shanur Jahedul Hasan

Supervisor: Dr. K. R. Salin

4.2.4: SERD – ENERGY BUSINESS MANAGEMENT

1. Introduction

Given rapidly rising energy demand and supply infrastructure in Asia and beyond, there is a need for a new breed of highly trained specialized professionals who are capable of managing public and private energy utilities as well as operating in the changing energy market environment. Our Energy Business Program is designed to create such human capital. The main focus of the program is to provide students in-depth exposure to modern management approaches, tools and skills needed to face the challenge of changing energy business paradigms and energy markets.

2. Graduates from this Program can:

• Demonstrate a clear and in-depth understanding of the contemporary settings within which energy business has to be managed, i.e. national economic development, competition, patterns of technological and market change, and the structure and development of internal enterprise capabilities are included in the curriculum

• Demonstrate the ability to analyze which technologies to invest in, how to structure those investments and how to anticipate and respond to the behavior of the competitors, suppliers and customers

• Demonstrate the ability to understand the issues involved in the process of energy technology acquisition and the interrelationships between technology transfer and research and development management

• Demonstrate the ability to use various methods, tools and techniques for evaluation of various options related to energy business, including regulation, pricing, market assessments and forecasting

3. What should graduates expect?

Our program is a new program, we expect our graduate to assume a leadership position in energy business companies and utilities and consulting firms. Our graduates are already working with public utilities, private consulting firms, energy investment financiers and international organization.

4. Research Areas:

• Deregulation, competition, emerging market structure in electricity sector

• Market assessment of renewable energy sector and specific low carbon technologies

• Incentives and regulation and its market implications

• Barrier and opportunities for clean energy financing; climate financing as a tool for clean energy financing

5. Preferred Background for Masters' and Doctoral

Programs Candidates seeking admission should have at least a Bachelor in engineering or social science backgrounds; economics, management, business, public administration or equivalent. Masters' degree admission requires sound undergraduate degree, three or four-year program, while doctoral degree admission requires a sound master degree in relevant areas.

Curriculum Structure

The courses offered are existing courses in SOM and Energy and some course are jointly developed.

REQUIRED COURSES

• Energy Resources and Technologies
• Development and Evaluation of Energy Projects
• Energy Management System
• Development and evaluation of Energy project
• Energy business communication
• Choice and Transfer of Energy Technologies
• Organizational Behavior and Structure
• Strategic Management of a Firm

ELECTIVE COURSES

• Innovation and Techno Entrepreneurship
• Strategic Supply Chain Management
• Innovation Marketing and New Product Development
• Management Information Systems
• Corporate Social Responsibility and Ethics
• Project Finance and Rick management • Energy Statistics and Energy Demand Forecasting
• Design and Management of Energy systems
• Rational use of Energy in Buildings
• Rational use of Energy in Industry
• Electricity Economics and Planning
• Energy, Environment and Climate Changes: Issues and Strategies
• Biomass Conversion
• Power Sector Management under Deregulation
• Rural Electrification and Distributed Generation
• Design of solar systems for thermal and electricity generation applications
• Smart Grid for Sustainable Development
• Solar Energy
• Energy Risk Management

For more information, please contact:
Energy Business Management
+66 (0)2 524 5440,
+66 (0)2 524 5407
+66 (0)2 524 5439
epcoord@ait.asia
EECC-secretary@ait.asia
http://energy.ait.asia

5. Masters Students' Theses

Analysis of Challenges and Opportunities for Green Energy Financing in Bangladesh
By: Miss Syeda Ismoth Iqbal
Supervisor: Dr. Shobhakar Dhakal

Supply and Demand Analysis of Biofuel Markets in Thailand and the Philippines
By: Mr. Kiddakron Thavong
Supervisor: Dr. Shobhakar Dhakal

Analysis of Determinants and Barriers to the Adoption of Solar Energy Based Technologies for the Hotel Industry in Nepal
By: Mr. Ayush Dhungel
Supervisor: Dr. Yuosre Badir

4.3: SERD – DEPARTMENT OF DEVELOPMENT & SUSTAINABILITY

Background and Mission

Department of Development and Sustainability aims to respond to emerging challenges to sustainable development in Asia. Asia is changing rapidly economically, socially, politically as well as culturally. In order to effectively address emerging issues in the region, we need to have critical and deep analysis of contexts under a multiplicity of identities - be it by gender, religion, ethnicity, class, age, geographical location, livelihood, nation, etc. The region urgently needs people who are able to organize a multi-disciplinary approach to problem solving, with in-depth understanding and responsiveness to the various needs of local women and men. We strive to generate research and knowledge to meet these needs.

The Missions of the Department are:

• To develop next-generation-leaders able to address emerging and rapidly changing development needs involving various resources – be it natural, human, social, economical, and political, who are equipped with knowledge and attitudes that can contribute to problem solving in practice.

• To serve the society by producing analysis and grounded knowledge that would contribute to improved practices for sustainable development.

Academic Programs

Multidisciplinarity is at the very core of department's teaching, research & outreach activities. Our academic activities focus on problem-solving and creating work-ready graduates who are able to take real-life challenges once graduated. The students come from multiple disciplines economics, geography, anthropology, sociology, architecture, agriculture, forestry, science, political sciences, management, and humanities. Those with professional development experience are preferred candidates, and hence the programs have experienced students and peer learning is also an important part of our learning.

Department of Development and Sustainability are:

1. Gender and Development Studies
2. Natural Resources Management
3. Pulp & Paper Technology Field of Study
4. Regional & Rural Development Planning
5. Urban Environmental Management
6. Disaster Preparedness, Mitigation and Management

4.3.1: SERD – GENDER AND DEVELOPMENT STUDIES

1. Introduction

A small project, Women in Development was initiated in the Human Settlements Development Division at AIT in the late 1980s. This grew into the Gender and Development Studies (GDS) as an academic unit in 1991, with financial support from CIDA, NORAD, the Dutch Development Cooperation and the Japanese Government.

Gender and Development Studies (GDS) is a center for graduate studies, research and outreach in the School of Environment, Resources and Development. Within the overall gender specific framework, GDS highlights both the need for specialized academic degree awarding studies in gender and development, and the integration of gender analysis and a gender relations perspective in AIT's other fields of study.

2. Faculty and Research Staff

Full-time Faculty

KYOKO KUSAKABE, BA, Sophia University, Tokyo, Japan; MSc, PhD, AIT, Thailand.

Professor and Head of Departmenet *(Women's employment in informal*

economy; Labor migration, Cross-border trade; Gender and development policy and planning; Gender issues in fisheries/aquaculture.)

PHILIPPE DONEYS, BA., University of Toronto, Canada; MA, University of London, UK; PhD, Institut d'Etudes Politiques, France.

Associate Professor *(New Technologies, Industrialization and Gender HIV/AIDS; Gender Politics, Civil Society and Human Rights; Gender, Migration and Trafficking in Asia)*

JOYEE S. CHATTERJEE, BA. (Hons), Lady Shri Ram College, Delhi University; M.A. Tata Institute of Social Sciences, India; M.A. University of Southern California, U.S.A.; PhD. University of Southern California, U.S.A

Assistant Professor *(Gender and Development Communication; Global Health Communication; Gender, Culture and Social Issues in South Asia.*

JULAIKHA BENTE HOSSAIN, MSc in University of Dhaka, Bangladesh; MSc. and PhD in Asian Institute of Technology, Thailand

Senior Research Specialist and **Affiliated Faculty** (*Gender and Development with emphasis on the policies and programmes for gender equality and women's empowerment; Gender, Employment and Organization; Gender and ICT for Development; Gender and Human Rights; Gender, Development and Public Policy; Gender Mainstreaming; Gender and Natural Resource Management*)

Research Staff

DONNA L. DOANE

Research Specialist, Do Policy Makers Understand the Economic and Social Issues Affecting Low Income Women in Four Mekong Countries? - AUSAID

MANRAJ GREWAL

Managing Editor, *of Gender, Technology and Development Journal*

JHOZINE DAMASO

Program Officer, *Adapting to Climate change in Peri-Urban Southeast Asia*

PARICHART KHAMMEERAK

Research Assistant, *Migration and Collectives/networks as Pathways out of Poverty: Gendered Vulnerabilities and Capabilities of Fishing Comminutues in Asia*

Administrative Staff

AGNES PARDILLA, Program Officer

3. Grants and Sponsored Research Completed in 2016

Renewable energy technologies for integrated community farming systems
Duration: 2015-2016
Principal Investigator: Prof. Kyoko Kusakabe, Prof. S. Kumar and Dr. Avishek Datta
Sponsor: Wisions of sustainability
Total Contracted Amount (THB): 455,000

Organize training workshop for the students from Ochanomizu University
Duration: 1 Dec 2015- 31 Dec 2016
Principal Investigator: Prof. Kyoko Kusakabe
Sponsor: Ochanomizu University
Total Contracted Amount (THB): 124,270.63

Consortium of Development Studies in Southeast Asia (CDSSEA) - 2
Duration: Aug-2013 to 1-Jun-2016
Project Investigator(s): Dr. Philippe Doneys
Sponsor: International Development Research Centre (IDRC)
Total Contracted Amount (THB): 4,628,792.00

Gender Technology and Development (GTD) Journal
Duration: Aug-2012 to July-2016
Project Investigator(s): Dr. Julaikha B. Hossain
Sponsor: Rockefeller Foundation
Total Contracted Amount (THB): 2,250,000

Gender and development-capacity building, research, publications and networking project
Duration: 01-08-2015 to 31-07-2016
Project Investigators: Dr. Julaikha B. Hossain
Sponsor: Development Design Consultants Ltd
Total Contracted Amount (THB): 503,400

4. On-going Grants and Sponsored Research

Study on the utilization of Geographical indication in Asia
Duration: 15-Oct-2016 to 15-Feb-2017
Project Investigator(s): Prof. Kyoko Kusakabe
Sponsor: Food marketing research and Information Center
Total Contracted Amount (THB): 412,080.00

Migration and Collectives/Networks as Pathways out of Poverty: Gendered Vulnerabilities and Capabilities of Fishing Communities in Asia
Duration: 01-Mar-2016 to 28-Feb-2019
Project Investigator(s): Prof. Kyoko Kusakabe
Sponsor: The Research Council of Norway
Total Contracted Amount (THB): 7,118,648.00

Jobs at the Borders: What policies can promote Gender and Inequality and growth in ASEAN economic zones?
Duration: 01-Jan-2016 to 31-Dec-2018
Project Investigator(s): Prof. Kyoko Kusakabe
Sponsor: International Development Research Center (IDRC)
Total Contracted Amount (THB): 9,779,256.00

Crafting Gender Transformative Characters
Duration: 1 Dec 2015 – 31 Jul 17
Project Investigator(s): Dr. Joyee S. Chatterjee
Sponsor: AIT Research Institution Grant
Total Contacted Amount (THB): 60,000.00

SBMG Process Evaluation
Duration: 01-Mar-2016 to 28 Feb 17
Project Investigator(s): Dr. Joyee S. Chatterjee
Sponsor: BBC Media Action India
Total Contracted Amount
(THB): 132,574..00

Gender and Development Capacity Building Research Publication & Networking Project (Phase II)
Duration: 01-Aug-2016 to 30-Jul-2017
Project Investigator(s): Dr. Julaikha B. Hossain
Sponsor: Development Design Consultants Ltd (DDCL)
Total Contracted Amount
(THB): 1,044,300.00

Cross-border women migrant worker's housing rights: A comparative case study of Cambodia and Thailand
Duration: 08- Mar- 2016 to 08-Mar-2017
Project Investigator: Prof. Kyoko Kusakabe
Sponsor: Pannasastra University of Cambodia (PUC)
Total Contracted Amount
(THB) 240,000

Integration of migrants and social policy issues: Reflections from Japan, Korea and Thailand towards creation of inclusive society
Duration: 1 Oct 2015- 31 Dec 2016
Principal Investigator: Prof. Kyoko Kusakabe
Sponsor: The Toyota Foundation
Total Contracted Amount (THB): 2,141,300.00

Gendered impact of cross-border agricultural investment: Case of rubber plantations in Northern Laos, Myanmar, and Cambodia Supported by Sustainable Mekong Research Network (SUMERNET) Phase 3,
Duration: 15 Oct 2014 – 15 Sep 2017
Principal Investigator: Prof. Kyoko Kusakabe
Sponsor: SEI Project no. 11125
Total Contracted Amount
(THB): 1,472,913.00

Escaping the middle income country trap: Targeted and pragmatic policies for Technological upgrading and workerrs inclusive industrial strategies as drawn from firm-level analysis of the Philippines and Thailand
Duration: 1-Aug-2011 to 30-May- 2017
Project Investigator(s): Prof. Kyoko Kusakabe
Sponsor: WOTRO
Total Contracted Amount
(THB): 2,934,069.53

Do policy makers understand the economic and social issues affecting low income women in four Mekong countries? - AUSAID
Duration: Mar -2013 to 30 Jun-2017
Project Investigator(s): Dr. Philippe Doneys
Sponsor: AUSAID Australia
Total Contracted Amount
(THB): 22,550,639.81

Japanese Government Grant
Duration: Renewed every year
Project Investigator(s): Prof. Kyoko Kusakabe
Sponsor: Japanese Government
Total Contracted Amount (THB): 37,397.51

5. Publications

Book Chapters

Kyoko K., Ruth P. (2016). Childcare arrangements of Burmese migrant workers in Thailand. In Nicola Ansell, Natascha Klocker and Tracey Skelton. Geographies of global issues: changes and threat, Geographies of children and young people. Singapore. pp.103-126. Publisher: Springer.

Papers in Refereed Journal

Phuong P., Philippe D., Donna L. D. (2016). Changing Livelihoods, Gender Roles and Gender Hierarchies: the Impact of Climate, Regulatory and Social Changes on Women and Men in a Community in Vietnam. Women Studies International Forum. Vol: 54, 48-56.

Duanghathai B., Philippe D., Kyoko Ku., Donna L. D. (2016). Expansion of Womens Political Participation through Social Movements: The Case of the Red and Yellow Shirts in Thailand. Journal of Asian and African Studies. 15 January 2016. Doi: 10.1177/0021909616654508.

Aurangzaib Al., Philippe D., Donna L. D. (2016). Impact of Gender Binarism on Hijras Life Course and Their Access to Fundamental Human Rights in Pakistan. Journal of Homosexuality. 27 January 2016.
Doi:10.1080/00918369.2016.1242337

Shinobu S., Kyoko K., Philippe D. (2016). Exploring human (in-)security from a gender perspective: A case study of subcontracted workers in Thailand. International Journal of Sociology and Social Policy. Vol: 36, 304 – 318.

Kyoko K., Ruth P. (2016). Working through exceptional space: the case of women migrant workers in Mae Sot, Thailand. International sociology. Vol: 31, 268 – 285.

Kyoko K. (2016). Women fish processors in Cambodia: Challenges for collective business. Asian Fisheries Science. Vol: 29, 93-110.

Ragnhild L., Kyoko K., Smita M., Yunxian W. (2016). Building knowledge across transnational boundaries: Collaboration and friendship in research. Emotion, Space and Society. Vol: 20, 18 – 24.

Duanghathai B., Philippe D., Kyoko K., Donna D. (2016). Expansion of womens political participation through social movements: The case of red and yellow shirts in Thailand. Journal of Asian and African Studies. (Accepted, forth coming).

Shinobu S., Kyoko K., Philippe D. (2016). Exploring human (in-)security from a gender perspective: A case study of subcontracted workers in Thailand. International journal of sociology and social policy. Vol: 36: 304-318.

6. Doctoral Student's Dissertation

Changing Livelihoods, Gender Roles and Gender Hierarchies: The Impact of

Climate Regulatory and Socio-Economic Changes on Women and Men in a Co Tu Community in Vietnam
By: Mrs. Pham Thi Ha Phuong
Supervisor: Dr. Philippe Doneys

Exploring Gender Dimension of Human Security: A Case Study from Female Subcontracted Workers in Thailand
By: Miss Shinobu Sasaki
Supervisor: Dr. Kyoko Kusakabe (Chairperson), Dr. Philippe Doneys (Co-chairperson)

Women's New Political Space in Thailand: A Case Study of the Red and Yellow Shirts Movements
By: Mrs. Duanghathai Buranajaroenkij
Supervisor: Dr. Philippe Doneys (Chairperson), Dr. Kyoko Kusakabe (Co-chairperson)

7. Masters Students' Theses and Research Studies

Women's Political Representation in a Democratizing Myanmar
By: Ms. Yin Yin Min
Supervisor: Dr. Philippe Doneys

Expectations and Migration: A Case on Vietnamese Women Migrant Care Workers under the Japan-Vietnam Economic Partnership Agreements (JVEPA)
By: Miss Luckhana Sanbungko
Supervisor: Dr. Kyoko Kusakabe

Gender, Conflict-induced Displacement and Livelihoods Among Internally Displaced Persons (IDPs): A Case Study of Lana Zupja Camp, Kachin State Republic of the Union of Myanmar
By: Miss Ying Lwin
Supervisor: Dr. Philippe Doneys

Gender and Involuntary Resettlement in the Context of an Ethnic Minority Group: A Case Study in Song Bung 4 Hydropower Project in Quang Nam Province, Vietnam
By: Miss Phan Thi Ngoc Thuy
Supervisor: Dr. Philippe Doneys

Women's Participation in Community Forest Management: A Case Study of Sundari Community Forest Nepal
By: Miss Nikita Shakya
Supervisor: Dr. Kyoko Kusakabe

Challenges Faced by Female Afghan Students in Engineering Graduate Education: A Case Study of the Asian Institute of Technology in Thailand
By: Miss Hosna Lodin
Supervisor: Prof. Kyoko Kusakabe

Reproductive Health Issues Among Young Female Factory Workers: A Case Study of Female Garment Workers in Phnom Penh, Cambodia
By: Miss Veu Kanitha
Supervisor: Dr. Joyee S. Chatterjee

The Impact of Household Gender Relations on Access to and Use of Maternal Health Care Services: A Case of Halde Kalika VDC (Nuwakot District) in Nepal
By: Miss Shreya Bajracharya
Supervisor: Dr. Joyee S. Chatterjee

Women's Participation in Achieving "Open Defecation Free" (ODF) Community Goal: A Case Study of Jhaukhel VDC in Bhaktapur District, Nepal
By: Miss Deepa Khanal
Supervisor: Dr. Joyee S. Chatterjee

Gender Impacts of Rubber Plantation in Lashio District, Northern Shan State, Republic of the Union of Myanmar
By: Miss Aye Chan Myae
Supervisor: Dr. Kyoko Kusakabe

4.3.2: SERD – NATURAL RESOURCES MANAGEMENT

1. Introduction

This field of study emphasizes natural resources, including land, forest and wild animal and environmental conservation concerns. It addresses the problems of deforestation, land and coastal ecosystem degradation, biodiversity depletion, diminishing water supply, and other environmental pressures and threats on local, national, regional and global ecosystems.

2. Faculty and Research Staff

Full-time Faculty

RAJENDRA PRASAD SHRESTHA, BSc, Haryana Agri. Univ, India; MSc, DTechSc, AIT, Thailand.

Professor (Sustainable Land Management; Natural Resources Degradation and Environmental indicators; Landuse-climate, Geoinformatics)

NOPHEA SASAKI, BSc., Royal Univ. of Agriculture, Cambodia; MSc., Shinshu Univ., Japan; PhD, Gifu Univ., Japan

Associate Professor (Sustainable Forest Management; REDD+; Forest Carbon monitoring and Modeling, Carbon and Biodiversity Offsetting, Ecosystem Modeling, Applied Informatics)

Visiting Faculty

DAMIEN JOURDAIN, BEng, MSc, Ecole Nationale Superieure Agronomique de Montpellier, France; PhD, University of Montpellier I, France.

Visiting Assistant Professor (Water Management and Economics, Natural Resources Economics and Valuation, Farm Household Economics)

NICOLAS FAYSSE, BEng, MSc, Ecole Polytechnique, Paris; PhD, University of Paris 10, France.

Visiting Assistant Professor (Governance of Natural Resources, Water Resources Management, Rural Development and Agricultural Policies)

Adjunct Faculty

DIETRICH SCHMIDT-VOGT, BSc, Freiburg University, Germany; MSc, University of Saskatoon, Canada; PhD, Heidelberg University, Germany.

Adjunct Faculty (Landscape Ecology; Integrated Land Use Systems; Sustainable Forest Management; and Human Impact on Vegetation)

ROLAND COCHARD, BSc (Hons in Environmental Science), James Cook University of North Queensland; DSc, Institute of Geobotany, Swiss Federal Institute of Technology ETH, Switzerland.

Assistant Professor (Savanna ecosystem dynamics, landscape ecology, biodiversity, mangrove, risk management)

CLEMENS GRUNBUHEL, MA, PhD, University of Vienna, Austria/

Assistant Professor (Ecological Anthropology, Resource Use Indicators, Smallholder Agriculture, Integrated Land Use Management)

GANESH P SHIVAKOTI, BS, MS, Udaipur Univ, India; PhD, Michigan State Univ, USA.

Professor (Natural Resources Economics; Common Property

Resources; NRM Policy Analysis; and Watershed Management)

MA HWAN-OK, BA, Korea University, Korea; MS & PhD, Univ. of Washington, USA;

Adjunct Faculty (REDD and Afforestation/Reforestation; Biodiversity conservation in tropical forest; Community-based forest management; Payment for environmental services of tropical forests & sustainable management guidelines).

Research Staff

Soe Soe Htway, B.Ag.Sc., Soil & Water Management, Yezin Agricultural University; M.Sc., Natural Resources Management, Asian Institute of Technology,

Research Associate, Strengthening institutional capacity, extension services and rural livelihood in the Central Dry Zone and Ayeyarwaddy Delta regions of Myanmar.

Aye Sandar Phyo, B.Ag.Sc, Yezin Agricultural University, Myanmar, M.Sc., Regional & Rural Development Planning, Asian Institute of Technology.

Research Associate, Strengthening institutional capacity, extension services and rural livelihood in the Central Dry Zone and Ayeyarwaddy Delta regions of Myanmar.

Eaindra Theint Theint Thu, B.Ag.Sc., Yezin Agricultural University, Myanmar, M.Sc., Natural Resources Management, Asian Institute of Technology.

3. Grants and Sponsored Research Completed in 2016

Collaboration in Integrated Natural Resources Management in Indonesia

CNH: When Strengths Can Become Weaknesses: Emerging Vulnerabilities in Coupled Natural Human Systems under Globalization and Climate Change
Duration: 16-Oct-2011 to 1-Dec-2016
Project Investigator(s): Prof. Ganesh Shivakoti
Sponsor: National Science Foundation (NSF)-Arizona State University (ASU)
Total Contracted Amount (THB): 4,405,959.03

Collaboration in Integrated Natural Resources Management in Indonesia "Decentralization, Local People, Gender and Resources"
Duration: 1-Aug-05 to 31-Dec-16
Project Investigator(s): Ganesh P. Shivakoti
Sponsor: The Ford Foundation
Total Contracted Amount (THB): 984,000

Technology needs assessment in Asia for climate change mitigation and adaptation Phase II Global Workshop,
Duration: May – April 2016;
Project Investigator(s): S. Kumar, R.P. Shrestha, A. Salam
Sponsor: UNEP DTU Partnership, Denmark
Total Contract amount (THB): 1,427,000

REDD + Training series
Duration: 27-Nov-2016 to 04-Dec- 2016
Project Investigator: Dr Nophea Sasaki
Sponsor: Multi Donor
Total Contracted Amount (THB): 340,750.00

Evaluation of Forest Ecosystem Services and Total Willingness to Pay: A case study at the AIT Campus
Duration: 01-May-2016 to 01-Oct- 2016
Project Investigator: Dr Nophea Sasaki
Sponsor: AIT Research Initiation Grant
Total Contracted Amount (THB): 50,000.00

4. On-going Grants and Sponsored Research

Collaboration on Capacity Building of Hanoi Agricultural University and Hue University of Agriculture and Forestry in Initiating INRM and Poverty Alleviation
Duration: 1-Jul-08 to 31-Aug-17
Project Investigator(s): Ganesh P. Shivakoti
Sponsor: The Ford Foundation, Hanoi, Vietnam
Total Contracted Amount (THB): 6,536,600

The Collaborative Graduate program in Integrated Natural Resources Management between Hanoi University of Agriculture and Hue University of Agriculture and Forestry
Duration: 15-Jul-09 to 31-Aug-17
Project Investigator(s): Ganesh Shivakoti
Sponsor: Ford Foundation Hanoi
Total Contracted Amount (THB): 12,184,992

Strengthening institutional capacity, extension services and rural livelihood in the Central Dry Zone and Ayeyar daddy Delta regions of Myanmar
Duration: 1-Jun-2013 to 31-Dec-2017
Project Investigator: Dr. Clemens Grunbuhel
Sponsor: ACIAR
Total Contracted Amount (THB): 16,449,382

Technology needs assessment in Asia for climate change mitigation and adaptation Phase II,
Duration: Jan 2015 – Dec 2017.
Project Investigator(s): S. Kumar, R.P. Shrestha, A. Salam
Sponsor: UNEP DTU Partnership, Denmark
Total Contract amount (THB): 2,514,000

Technology needs assessment in Asia

for climate change mitigation and adaptation Phase II Workshop,
Duration: Jan 2015 – Mar 2017.
Project Investigator(s): S. Kumar, R.P. Shrestha, A. Salam
Sponsor: UNEP DTU Partnership, Denmark
Sponsor: UNEP DTU Partnership, Denmark
Total Contract amount (THB): 1,744,000

Technology needs assessment in Asia for climate change mitigation and adaptation Phase II Travel,
Duration: Jan 2015 – Mar 2017.
Project Investigator(s): S. Kumar, R.P. Shrestha, A. Salam
Sponsor: UNEP DTU Partnership, Denmark
Sponsor: UNEP DTU Partnership, Denmark
Total Contract amount (THB): 320,000

5. Publications

Books and Monographs

Qasim S., Shrestha R. P., Qasim M. (2016). A National Review of Land Degradation in Pakistan. Advances in Environmental Research. New York, USA. Publisher: Nova science.

Book Chapters

Marcel K., Nicolas F., Ali H., Tarik H., Serge M., Maha H. (2016). Liberation or anarchy? The Janus nature of groundwater use on North Africas new irrigation frontier. In Jackman,Barreteau, Hunt, Rinaudo, Ross. Integrated Groundwater Management. Publish: Springer.

Papers in Refereed Journal

Nicolas F., Louisanne T. (2016). Getting Technical: Farmers' New Strategies to Exercise Agency in Negotiating Development Projects in Morocco. Journal of Development Studies. Vol: 43, 229-249.

Tamara C., Nicolas F., Sylvain B., Bryan A. (2016). Effects at Farm and Community Level of the Adoption of Sprinkler Irrigation in the Ecuadorian Andes. Irrigation and Drainage. Vol: 65, 559-567.

Audrey R. F., Nicolas F., Zhour B., Raju M., Jean D. R. (2016). The DIALAQ project on sustainable groundwater management: a transdisciplinary and transcultural approach to participatory foresight. Current Opinion in Environmental Sustainability. Vol: 20, 56-60.

Nicolas F., Philippe B., Eric S. (2016). Les politiques dappuil agriculture familiale au Brsil et au Maroc: quelquesl ments de comparaison. Confin, 29 page.

Cheng Q., Nophea S.i, Damien J., Sohee M. K., Ganesh P. S. (2016). Local livelihood under different governances of tourism development in China A case study of Huangshan mountain. Tourism Management. Vol: 61, 221 – 233.

Andrew J. L., Eleanor E. D., Matthew J. B., Bernd D., Shelley G., Darren T., Caitlin C., Anto R., Alex W., Yafang Y., Nophea S. (2016). Opportunities for Improved Transparency in the Timber Trade through Scientific Verification. BioScience. Vol: 66, 990 – 998.

Cheng Q., Nophea S., Ganesh S., Yuanjie Z. (2016). Effective governance in tourism development an analysis of local perception in the Huangshan mountain area. Tourism Management Perspectives. Vol: 0, 112 – 123.

Nophea S., Gregory P. ., Yude P., Wolfgang K. (2016). Sustainable Management of Tropical Forests Can Reduce Carbon Emissions and Stabilize Timber Production. Frontiers in Environmental Science. Vol: 4. 1 January 2016.

Nophea S., Kimsun C., Nobuya M., Issei A., Andrew J. L. (2016). Forest reference emission level and carbon sequestration in Cambodia. Global Ecology and Conservation. Vol: 7, 82 – 96.

Kimsun C., Nophea S., Nobuya M., Saret K., Dana K., Andrew J. L. (2016). Assessment of carbon stocks of semi-evergreen forests in Cambodia. Global Ecology and Conservation. Vol: 5, 34 – 47.

Shariful M. A., Nophea S., Avishek D. (2016). Waterlogging, crop damage and adaptation interventions in the coastal region of Bangladesh: A perception analysis of local people. Environmental Development.
Doi: 10.1016/j.envdev.2017.02.009.

Losiri C., Nagai M., Ninsawat S., Shrestha R. P. (2016). Modeling Urban Expansion in Bangkok Metropolitan Region using Demographic-Economic Data through Cellular Automata-Markov Chain and Multi-Layer Perceptron-Markov Chain Models. Sustainability. Vol: 8, 686 – 708.

Kheereemangkla Y., Shrestha R. P., Shrestha S., Jourdain D. (2016). Modeling Hydrologic Responses to Land Management Scenarios for the Chi Sub-Basin II, Northeast Thailand. Environmental Earth Science. Vol: 75.

Qasim S., Qasim M., Shrestha R. P., Khan A., Tun K., Ashraf M. (2016). Community resilience to flood hazards in Khyber Pukhthunkhwa province of Pakistan. International Journal of Disaster Risk Reduction. Vol: 18, 100 – 106.

Arunyawat S., Shrestha R. P. (2016). Assessing land use change and its impact on ecosystem services in Northern Thailand. Sustainability. Vol: 8, 788 – 809.

Qasim S., Khan A. N., Shrestha R. P., Ahmad I., Qasim M. (2016). Analysis of Farmers, Perceptions of Land Management: Technologies to Combat Land Degradation and Desertification in Balochistan, Pakistan. Journal of Applied and Emerging Sciences. Vol: 5, 20 – 25.

Shrestha R. P., Nepal N. (2016). Food Security of Subsistence Farmers in the Context of Climate Change in Makwanpur, Nepal. Food Security: The Science, Sociology and Economics of Food Production and Access to Food. Vol: 8, 415 – 425.

Sakayarote K., Shrestha R. P. (2016). Policy-driven rubber plantation and its driving factors: A case of smallholders in Northeast Thailand. International Journal of Sustainable Development and World Ecology. Vol: 24: 15 – 26.

Wali E., Datta A., Shrestha R. P. (2016). Development of a land suitability model for saffron (Crocus sativus L.) in Khost Province of Afghanistan using GIS and AHP technique. Archives of Agronomy and Soil Science. Vol: 62, 921 – 934.

Shrestha R. P. (2016). Assessing land use change and its impact on ecosystem services in Northern Thailand. Sustainability. Vol: 8, 768 – 789.

Papers in Conference Proceedings

Nophea S. (2016). Contribution of the REDD+ scheme to carbon emission reductions and biodiversity conservation in Sout. International Forum on Sustainable Future in Asia: 1st NIES International Forum Converting Aspirati. Asian Institute of Technology, 27-28 January 2016.

Nophea S. (2016). Modular course on forest carbon accounting and REDD Training course: Accounting for Carbon Emission Reductions and Removals through REDD+ Activiti. Asian Institute of Technology, 27 November - 4 December 2016.

Nophea S. (2016). Balancing land development and biodiversity conservation through biodiversity offsetting program. Regional Conference on Biodiversity Conservation in Tropical Forests of the Greater Mekong Sub-reg. Siem Reap, Cambodia, 23-25 March 2016.

Arunyawat S., Shrestha R. P. (2016). Assessing land use change and its impact on ecosystem services in Northern Thailand. International Soil Conference 2015 Sustainable Uses of Soil in Harmony with Food Security. Cha-am, Thailand, 27-29 June 2016.

6. Doctoral Students' Dissertation

Carbon Stock Assessment using Remote Sensing and Forest Inventory Data in Savannakhet, Lao PDR
By: Miss Phutchard Vicharnakorn
Supervisor: Prof. Rajendra Prasad Shrestha

Social Preference and Economic Value of Ecosystem Services of Rice Irrigated Agriculture: A Case Study in Northeast Thailand
By: Mr. Somsak Vivithkeyoonvong
Supervisor: Dr. Damien Jourdain

Impact of Land Degradation on Crop Production in the Dry Zone of Myanmar
By: Mrs. Kyawt Kay Khaing Tun
Supervisor: Prof. Rajendra Prasad Shrestha

Follow-Up to Environmental and Social Impact Assessment in Cambodia: Towards New Approaches and Strategies
By: Mr. Sam Chanthy
Supervisor: Dr. Clemens Grunbuhel

Effect of Land Use Change on Ecosystem Services in Wang Thong Watershed, Northern Thailand
By: Miss Sunsanee Arunyawat
Supervisor: Prof. Rajendra Prasad Shrestha

7. Masters Students' Theses and Research Studies

Assessment of Land Tenure Security and its Impact on Rural Farmers: A Case Study in Phyapon Township, Ayeyarwady Region of Myanmar
By: Mrs. Naw Dora
Supervisor: Dr. Clemens Grunbuhel

Assessment of Soil Fertility Management Practices in Central Dry Zone of Myanmar
By: Miss Aye Aye Thinn
Supervisor: Prof. Rajendra Prasad Shrestha

Assessment of Soil Salinity Using Remote Sensing and Field-based Data in Meiktila District, Myanmar
By: Mr. Zaw Min Oo
Supervisor: Prof. Rajendra Prasad Shrestha

Palm Oil for Biofuel Production and its Impact on Food Security: Local and National Level Analysis in Thailand
By: Miss Neha Thapa
Supervisor: Dr. Damien Jourdain

Stream Discharge Response to Climate Change and Land Use Change in Tamor Basin, Nepal
By: Miss Sumitra K C
Supervisor: Prof. Rajendra Prasad Shrestha

Assessment of Constraints in Agriculture Production in the Dry Zone of Myanmar
By: Miss Hnin Ei Win
Supervisor: Prof. Rajendra Prasad Shrestha

Assessment of the Role of Mangrove Conservation in Local Livelihood: A Case of Trapeang Sengke Community, Cambodia
By: Miss Ing Mala
Supervisor: Prof. Rajendra Prasad Shrestha

Factors Affecting Decision-Making of Farmers on Rice Farm Investment Under Changed Land Tenure Policy: A Case Study of Pyapon Township, Ayeyar waddy Delta of Myanmar
By: Miss Katika Punbuatoom
Supervisor: Dr. Clemens Grunbuhel

Analysis of Rice Farmers' Time Utilization on Farming and Non-Farming Activities in Pyapon Township, Ayeyawaddy Region in Myanmar
By: Mr. Nay Min Maung
Supervisor: Dr. Clemens Grunbuhel

Effectiveness of Private Sector in Agricultural Extension among the Mung Bean Growers of Pwintbyu Township in Magway Region, Myanmar
By: Mr. Thet Ko Ko Latt
Supervisor: Dr. Clemens Grunbuhel

Impact Assessment of Wetland Alliance Program Alternative Livelihood Programs on Livelihood of Beneficiary Households in Xuan Thuy National Park, Vietnam
By: Mr. Pradeep Baral
Supervisor: Dr. Damien Jourdain

Assessment of Postharvest Drying Methods for Paddy in Maubin Township, MyanmarBy: Mrs. Yin Min Hmwe
Supervisor: Dr. Clemens Grunbuhel (Chairperson), Dr. Damien Jourdain (Co-chairperson)

4.3.4: SERD – REGIONAL AND RURAL DEVELOPMENT PLANNING

1. Introduction

This field of study focuses on rural poverty, improvement of the quality of life, and social and economic development of rural areas. Practice oriented rural regional planning is carried out regularly at district and sub-district levels following a participatory and integrated approach, and attention is paid to management of development Institutions, infrastructure and physical resources. Sectoral and spatial planning is equally emphasized along with the management of rural development programs and local development projects to strengthen rural communities for sustainable development.

2. Faculty and Research Staff

Full-time Faculty

MOKBUL MORSHED AHMAD, BSc, MSc, Dhaka University, Bangladesh; MSc, AIT, Thailand; PhD, University of Durham, UK.

Associate Professor *(Economic geography; regional and rural development planning; community development; Non-Governmental Organizations (NGOs); civil society; and globalization; etc)*

SOPARTH PONGQUAN, BSc, Chiang Mai University; MSc, AIT, Thailand; DSc, University of Wageningen, The Netherlands.

Associate Professor *(Capacity Building; Community Development and Monitoring and Evaluation of Development Projects; Decentralized Local Government; People's and Community Participation; Rural Development)*

JAYANT K ROUTRAY, BSc (Hons), MSc, PhD, Utkal University; MRP, Indian Institute of Technology, Kharagpur, India.

Professor (Regional and Rural Development Planning; Rural-Urban Relations; Regional Planning Methods and Techniques; Disaster Risk Reduction and Management; Climate Change Induced Adaptation; and GIS Applications)

GOPAL BAHADUR THAPA, BSc, Tribhuvan University, Nepal; MSc, DTechSc, AIT, Thailand.

Professor (Natural Resources Management; Sustainable Agricultural Development and Planning; and Watershed Management)

Professional Staff
VITOON NIL-UBOL, MSc, AIT, Thailand

Field Lab Supervisor, Regional and Rural Development Planning

3. Grants and Sponsored Research Completed in 2016

Enhancing Productivity and Market Linkages – Improving the Livelihoods and Food Security of Smallholders in Asia
Duration: 23-May-2013 to 22-May- 2016
Project Investigator: Prof. Gopal B Thapa
Sponsor: USAID/RDMA
Total Contracted Amount
(THB): 26,908,104

4. On-going Grants and Sponsored Research

Individual Behaviour Climate Change and Sustainabil
Duration: 01-Mar-2016 to 28-Feb- 2018
Project Investigator: Dr. Mokbul Morshed Ahmad
Sponsor: MOFAID France/RFCC Funding
Total Contracted Amount
(THB): 1,350,000.00

5. Publications

Books

Morshed A. M. (2016). Urban and Peri-Urban Agriculture in Asia. Bangkok, AIT,

Thailand.

Book Chapters

Morshed A. M. (2016). Civil Society Organizations and Climate Change Policy Formulation in Bangladesh. In Mallick, B. and Etzold, B. Environment, Migration and Adaptation Evidence and Politics of Climate Change in Bangladesh. Dhaka, Bangladesh. Publisher: AHDPH.

Papers in Refereed Journals

Morshed A. M. (2016). Perception of Local Experts about Accessibility to International Climate Funds: Case of Bangladesh. The Journal of Developing Areas. Vol: 50, 53-68.

Rahman S.M., Morshed A. M. (2016). From strategy to execution: the case of local climate fund in Bangladesh. International Journal of. Environmental Policy and Decision Making. Vol: 2, 18 January 2016.

Morshed A. M. (2016). Landholding size and farmers access to credit and its utilisation in Pakistan. Development in Practice. Vol: 26, 1060 – 1071.

Pathak S., Morshed A. M. (2016). Flood recovery capacities of the manufacturing SMEs from floods: A case study in Pathumthani province, Thailand. International Journal of Disaster Risk Reduction. Vol: 18, 197 – 205.

Morshed A. M. (2016). An empirical assessment of farmers' risk attitudes in flood-prone areas of Pakistan. International Journal of Disaster Risk Reduction. Vol: 18, 107 – 114.

6. Doctoral Students' Dissertation

Sustainability of Smallholder Livestock Farmers' Livelihood in Northeast Region of Thailand
By: Miss Tararat Mulika
Supervisor: Prof. Jayant Kumar Routray

Border Economic Zones and Development Dynamics in Thailand: A Comparative Study of Bordering Countries
By: Mr. Choen Krainara
Supervisor: Prof. Jayant Kumar Routray

Adoption and Performance of "Better Cotton" Management Practices in Pakistan
By: Mr. Farhad Zulfiqar
Supervisor: Prof. Gopal Bahadur Thapa

Farmers' Adaptation to Rainfall Variability and Salinity in Embankment and Non-Embankment Areas of the Lower Ayeyarwady Delta, Myanmar
By: Miss Seinn Seinn Mu
Supervisor: Dr. Mokbul Morshed Ahmad

7. Masters Students' Theses and Research Studies

Performance Assessment of the Middle School Teachers in the Rural Areas of Ayeyarwaddy Region, Myanmar
By: Ms. Naw Ke Blute Htoo
Supervisor: Dr. Mokbul Morshed Ahmad

Primary Education Among the Internally-Displaced Children in Myanmar: A Case Study in Kachin State
By: Ms. May Kyi Phyu Kyaw
Supervisor: Dr. Mokbul Morshed Ahmad

Access and Utilization of Maternal Health Services in Rural Myanmar
By: Mr. Myo Yar Zar
Supervisor: Dr. Soparth Pongquan

Factors Influencing Decision for Rural Out-Migration and Associated Impacts on Rural Households in the Ayeyarwady Region, Myanmar
By: Mr. Sa Si Thu Htike San
Supervisor: Prof. Jayant Kumar Routray

An Assessment of the Quality of Higher Education in Myanmar: A Case Study of History Department of Kalay University
By: Mr. Nang Sian Thawn
Supervisor: Dr. Mokbul Morshed Ahmad

Primary Education in Rural Myanmar: A Case Study on Quality and Access in Northern Shan State
By: Ms. Naw April Hpaw
Supervisor: Dr. Mokbul Morshed Ahmad

Assessment of Road Network Development and Its Influence on Cereal and Cash Crop Production in Okhaldhunga District of Nepal
By: Mr. Rajesh Sharma
Supervisor: Prof. Jayant Kumar Routray

Factors Influencing Maternal Nutrition Practices in Rural Nepal
By: Miss Kalpana B C
Supervisor: Dr. Soparth Pongquan

Small-Farmer Vegetable Marketing in Banke District of Nepal
By: Miss Subira Shahi
Supervisor: Prof. Gopal Bahadur Thapa

Impacts of Adolescent Pregnancy in Rural Thailand
By: Mr. Nantawat Rujiratpichathorn
Supervisor: Dr. Soparth Pongquan

Farmers' Perceptions and Use of Coconut Scale Insect Control Measures in Southern Luzon, Philippines
By: Mr. Dwight Jason Magro Ronan
Supervisor: Prof. Gopal Bahadur Thapa

Analysis of Family Network for Woodcarving Handicraft Entrepreneurship in Vietnam
By: Miss Tran Thi Nhu Ngoc
Supervisor: Prof. Jayant Kumar Routray

Accessibility to Healthcare for the Aged in Bangladesh: An Assessment
By: Mr. JM Abdullah
Supervisor: Dr. Mokbul Morshed Ahmad

Impacts of Agricultural Credit on Use of Inputs and Production of Cassava in Battambang Province, Cambodia
By: Miss Kun Keoranda
Supervisor: Prof. Gopal Bahadur Thapa

4.3.5: SERD – URBAN ENVIRONMENTAL MANAGEMENT

1. Introduction

Urban Environmental Management (UEM) is an area of academic discourse and professional practice in which urban planning and urban management issues are studied and practiced from an environmental management perspective.

As an academic program, UEM provides opportunities of graduate level education and research at master (M.Sc.) and doctoral (PhD) level. It also provides certificate and diploma programs, as well as post-doctoral research opportunities. It draws on and integrates theories and perspectives in established disciplines of urban planning, urban and regional development, urban economics, sustainable development, and urban policy and management studies into a distinctive framework of problems, issues and questions concerning the urban environment. It enables students to identify problems; apply appropriate analytic methodologies; design, plan and implement programs and projects; and monitor impacts and challenges within the context of sustainable development in developing societies.

The Field of Study prepares students for professional careers in the public and private sectors as well as international development agencies and civil society organizations engaged in urban development and environmental management.

2. Research Facilities and Laboratories

In this Field of Study, any researcher gets modern computer lab and other facilities for communication. There is also a workshop room for students which can accommodate about 24 students in four clusters at a time. The workshop room also has audio-visual facilities for presentation. A new Regional Urban Resource Center (R-URC) has been established for compiling and disseminating knowledge related to urban development and environmental management issues.

3. Faculty and Research Staff

Full-time Faculty

VILAS NITIVATTANANON, BEng, Chulalongkorn Univ; MA, Thammasat University; Meng, AIT, Thailand
PhD, University of Pittsburgh, USA.

Associate Professor *(Management of Infrastructure and Services, Waste Recycling and Systems Management, Urban Environmental Management, Water Engineering and Management, Economic and Environmental Assessment, Climate Change Risk Assessment and Adaptation)*

SOHEE MINSUN KIM, B.A., Tama Art University, Japan; MEng, University of Tokyo, Japan; PhD, University of Tokyo, Japan.

Assistant Professor *(Urban Planning, Risk-Sensitive Planning, Urban-Rural Land Use Management Policy, Environmental and Social Considerations in Planning)*

Visiting Faculty

GAURAV MANIK, B.Tech, Kanpur University, Kanpur; M.Tech, IIT-Kanpur; PhD, IIT-Bombay

(R&D Initiatives, New Projects/Setups, Chemical Engineering fundamentals, Product Development/ Validation, Polymer Sci. fundamentals, Intellectual Property (IP) Generation, Mentoring, Coaching)

THOMAS BRUDERMANN, Eco. Psychology, Malik Management Center; MSc, Dr. rer. nat., University of Klagenfurt
(Interfaces of systems sciences, sustainability and innovation research in regional and corporate contexts)

Research Associate
YIN MON NAING

Administrative Staff
PRAKAYDAO KRISSADEE

4. Grants and Sponsored Research Completed in 2016

Professional Master's Program (PM-

UM3) AITVN
Duration: June 15 to Dec-16
Project Investigator(s): Dr. Vilas Nitivattananon
Sponsor: Government Officials, private individuals
Total Contracted Amount
(USD): 139,700

Regional collaboration on eco labelling
Duration: 1-Sep-15 to 31-Aug-16
Project Investigators: Dr Vilas Nitivattananon
Sponsor: UNEP
Total Contracted Amount
(THB): 2,477,343

Evaluation of Pilot Implementation Program for Promoting Low Carbon Tourism Development in Regional Level (Pilot LCT)
Duration: 30-Sep-15 to 31-Mar-16
Project Investigators: Dr Vilas Nitivattananon
Sponsor: SIIT/DASTA
Total Contracted Amount
(THB): 500,000

One-year professional master's program in urban management
Duration: 01-Jun-15 to 31-Dec-16
Project Investigators: Dr Vilas Nitivattananon
Sponsor: Multi donors
Total Contracted Amount
(THB): 4,749,800

Regional collaboration on eco labelling
Duration: 01-Sep-2015 to 31-Aug-2016
Project Investigators: Dr Vilas Nitivattananon
Sponsor: UNEP
Total Contracted Amount
(THB): 2,477,343

Joint Research on Built Environment Curricula in the Asia-Pacific Region
Duration: 01-Mar-2016 to 31-Nov-2016
Project Investigators: Dr Sohee M. Kim
Sponsor: ProSPER.Net & RMIT
Total Contracted Amount
(AUD): 3,000

5. On-going Grants and Sponsored Research

Coastal Areas governance in the context of rapid tourism urbanization and climate change in the South East Asia
Duration: 01-May-2016 to 31-Dec- 2018
Project Investigator: Dr Vilas Nitivattananon
Sponsor: RFCC / MOFAID France
Total Contracted Amount
(THB): 1,350,000.00

6. Publications

Book Chapters

Vilas N., Dollachet K., Visnu C., Yin M. N. (2016). Underground Aqueduct and Water Tunneling Development in Thailand. In Angelakis, A. N., Chiotis, E., Eslamian, S. and Weingartner, H. Underground Aqueducts Handbook. Publisher: CRC Press, Taylor & Francis.

Papers in Refereed Journal

Srichuea S., Nitivattananon V., Perera R. (2016). Aging society in Bangkok and the factors affecting mobility of elderly in urban public spaces and transportation facilities. IATSS Research. Vol: 40, 26 – 34.

Kurniati A. C., Nitivattananon V. (2016). Factors influencing urban heat island in Surabaya, Indonesia, Sustainable Cities and Society. Sustainable cities and society. Vol: 27, 99 – 105.

Bhati S. S., Tripathi N. K., Nagai M., Nitivattananon V. (2016). Spatial interrelationships of quality of life with land use/land cover, demography and urbanization. Social Indicators Research. 24 January 2016.

Hazarika N., Nitivattananon V. (2016). Strategic assessment of groundwater resource exploitation using DPSIR framework in Guwahati city, India. Habitat International. Vol: 51, 79 – 89.

Noi L. V. T., Vilas N. (2016). Assessment of vulnerabilities to climate change for urban water and wastewater infrastructure management: Case study in Dong Nai river basin, Vietnam. Environmental Development. Vol: 16, 119 – 137.

Papers in Conference Proceedings

Machima T., Rachnarin N., Pavarat K., Chadchawan M., Nalikatibhag S., Vilas N. (2016). Assessment of impacts from implementing a low carbon tourism program: Case of Sukhothai City, Thailand. International Association for Tourism Policy. Maples, 29 June - 2 July 2016. (Peer-reviewed proceedings).

7. Doctoral Students' Dissertation

Integrated Risk Assessment of Climate Change Impacts on Urban Water and Wastewater Infrastructure
By: Miss Lam Vu Thanh Noi
Supervisor: Dr. Vilas Nitivattananon

The Mobility to Public Spaces Towards Supporting Aging Society: An Assessment of Elderly People, Urban Service Centers and Transportation Related System in Bangkok
By: Miss Sariya Srichuae
Supervisor: Dr. Vilas Nitivattananon (Chairperson), Dr. L .A. S. Ranjith Perera (Co-chairperson)

8. Masters Students' Theses

An Analysis on New Town Development and Its Impact on Urban Flood Inundation: A Case Study of Camko City, Phnom Penh, Cambodia
By: Mr. Muniroth Nou
Supervisor: Dr. Sohee Minsun Kim

Assessing Urban Resilience to Water-Related Disasters in Vung Tau City, Vietnam
By: Mr. Nguyen Cong Hoang
Supervisor: Dr. Vilas Nitivattananon

Study on Land-Use Change and Stakeholder Perception for Buffer Zone Management in the Peri-Urban Area of Chittagong, Bangladesh
By: Mr. Md. Mustiafiz Al Mamun
Supervisor: Dr. Sohee Minsun Kim

Multi-stakeholders and Multi-benefits Approach for Enhanced Utilization of Public Open Space in Mandalay City
By: Miss Aye Thandar Phyo Wai
Supervisor: Dr. Vilas Nitivattananon (Chairperson), Dr. Sohee Minsun Kim (Co-chairperson)

Challenges and Opportunities in Adopting Green Procurement towards Sustainable Tourism: A Case of Siem Reap City, Cambodia
By: Miss Min Sovannroth
Supervisor: Dr. Vilas Nitivattananon

Integrated Economic and Environ-mental Assessment of Special Economic Zones Using Eco-efficiency in Myanmar
By: Miss Thinn Lei Yee Wine
Supervisor: Dr. Vilas Nitivattananon

Impact Assessment of Tourism Activities on River Water Quality: Case Study of Vinh Loc District, Vietnam
By: Miss Vo Thanh Loan
Supervisor: Dr. Sohee Minsun Kim (Chairperson), Dr. Vilas Nitivattananon (Co-chairperson)

Potential Surface Analysis on Land Use Suitability for Future Urban Expansion in Phutthamonthon District, Nakhon Pathom Province, Thailand
By: Miss Arada Aromchuen
Supervisor: Dr. Sohee Minsun Kim

4.3.6: DISASTER PREPAREDNESS, MITIGATION AND MANAGEMENT

1. Introduction

The world in the recent past has witnessed over 35 major conflicts and some 2,500 disasters. Approximately, it impacted two billion people, and millions have lost their lives. That is not all; the most destructive disasters that could occur are still to happen yet. Rapid escalation and intensity in the incidence of severe disaster events have become a huge threat to the global community.

Asia-Pacific, on the other hand, with 85% of all the people affected by disaster in the world, is in the center stage of all disasters. The highest amount of displacement in the world in 2011 owing to disaster also happened in this region. Due to rapid rate of population growth, urbanization, poverty, climate change and geographical location, most of the Asian countries have become highly susceptible to natural disasters; some of them, per se: flood, cyclone, drought, earthquake, landslide, extreme temperature, heavy rain, epidemics, etc. It has been felt that there is limited capacity at global, regional and national levels in terms of knowledge base, skills training, long-term planning, emergency preparedness and policy development to respond to such severe disaster events. Consequently, to address these issues in innovative ways, it gave way to a program on Disaster Preparedness, Mitigation and Management (DPMM) at Asian Institute of Technology (AIT) in August 2008. AIT being located at the center of this region provides a strategic insight into the happenings in the world of disasters and development.

DPMM program uses interdisciplinary capacities (engineering, medicine, natural and social science, as well as management) to manage and minimize the effects of disasters in people on the front lines of disaster response and preparedness. It provides professional education and short term training for the capacity building of the Asia-Pacific as well as neighboring regions.

The courses at DPMM are designed and developed by AIT Faculties and experts from partner institutions having more than a decade of experience in this particular field. The program is being successfully run with students from Bangladesh, Canada, China, France, India, Indonesia, Iran, Maldives, Myanmar, Pakistan, Philippines, Singapore, South Africa, Sudan, Thailand, Tibet and Vietnam. Till date DPMM has had 79 students.

DPMM works closely with its partners for sharing knowledge and expertise. DPMM Faculties, Staff and Students get special invitation to attend workshops, seminars, symposiums, conferences, etc. They also get involved with the partners as volunteers, interns and consultants.

Currently, DPMM is working closely with the following partners.

- Asian Disaster Preparedness Center (ADPC)
- Department of Disaster Prevention and Mitigation (DDPM), Thailand
- HelpAge International
- Integrated Research on Disaster Risk (IRDR)
- International Federation of Red Cross and Red Crescent Societies (IFRC)
- Télécoms Sans Frontières (TSF)
- The Regional Integrated Multi-Hazard Early Warning System for Africa and Asia (RIMES)
- UN Regional Agencies based in Thailand such as, UN International Strategy for Disaster Reduction for Asia & the Pacific (UNISDR-AP); UN World Food Programme (WFP), United Nations Economic and Social Commission for Asia and the Pacific (ESCAP); United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA)
- World Society for the Protection of Animals (WSPA)

DPMM is now planning to work further at the national, regional and global level along with its future partners that may include:

- Action Aid
- Agreement on Disaster Management and Emergency Response (AADMER)
- ASEAN Coordinating Centre for Humanitarian Assistance on Disaster Management (AHA Center)
- Asia Foundation
- AusAid
- Care
- Oxfam
- Plan
- Save The Children
- USAID
- World Vision

Networks

Asian University Network of Environment and Disaster Management (AUEDM)

To enhance the objectives of the HFA, and to contribute to higher education and research process, Kyoto University in partnership with 19 other universities and organizations from 13 Asian countries has agreed to form the Asian University Network for Environment and Disaster Management (AUEDM) in a meeting in July 2008 in Kyoto, Japan.

The objectives of the network are:

- To share and work together (bilaterally or multilaterally) in promoting environment and disaster management in higher education (focusing on, but not restricted to, post-graduate education)

- To seek possibilities of mutual collaboration on field-based action research

- To broaden the scope of education and learning in the environment and disaster management field through collaboration with other stakeholders like NGOs and local governments.

International Program on Resilient Society Development under Changing Climate (RSDC)

In order to sustain resilient social development that is capable of adapting to climate change, bidirectional international education programs will be implemented targeting students ranging from undergraduates to master's and doctoral degree students. These programs will be implemented based on the tradition & Performance of Kyoto University's Asia-/Field-orientated Fieldwork Education/Research and the foundation established by a previous project, the "Consortium for International Human Resource Development for Disaster-Resilient Countries."

INATE (International Network for Advancing Transdisciplinary Education)

The INATE concept evolved through the discussions at the 8th International conference and strategic planning meeting of the University Network for Climate and Ecosystems Change Adaptation Research (UNCECAR) held in Malacca, Malaysia from 30 May to 1 June, 2014 and the workshop on Transdisciplinary Education for Disaster Risk Reduction (TeDrr) organized at the United Nations University in October, 2014. The concept note prepared by UNU-IAS based on these discussions was reviewed, commented and approved by the UNCECAR members and associate universities. In addition, individual UNCECAR advisors are gratefully acknowledged for their insightful comments.

Disaster Resilience Education Capacity Building in South-East Asia

DPMM is now a part of Disaster Resilience Education Capacity Building in South-East Asia project under Australia-ASEAN Council (AAC) Grant. The partner universities are:

1. University of Newcastle (Australia)
2. University Sains Malaysia (USM)
3. Asian Institute of Technology (AIT, Thailand)
4. University of the Philippines (UP)
5. National University of Civil Engineering (NUCE, Vietnam)

The Australia-ASEAN Council (AAC) launched on September 2015, will generate opportunities for Australian business, education, science and innovation and the arts to work with partners in South-East Asia. The Council's mission is to increase knowledge and promote Australia's interests in South-East Asia by initiating and supporting activities designed to enhance awareness, understanding and links between people and institutions in Australia and ten South-East Asian countries: Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Burma, Philippines, Singapore, Thailand and Vietnam.

2. Faculty and Research Staff

Full-time Faculty

JAYANT K ROUTRAY, B.Sc. (Hons), M.Sc., PhD, Utkal University; MRP, Indian Institute of Technology, India.

Professor *[Regional and Rural Development Planning, Rural-Urban Relations, Regional Planning Methods and Techniques, Disaster Risk Reduction and Management, Climate Change Induced Adaptation, and GIS Applications]*

PENNUNG WARNITCHAI, B.Eng. (Hon), Chulalongkorn University, Thailand; D.Eng., M.Eng., University of Tokyo, Japan.

Professor *[structural dynamics, earthquake engineering, wind effects of structures, bridge engineering and control of structural vibration]*

INDRAJIT PAL, B.Sc (Hons.), M.Sc, Jadavpur University, Kolkata, India; PhD, Vidyasagar University, Midnapore, India.

Assistant Professor *[Managing Disasters, Disaster Governance, Policy and Risk Management, Community Based Disaster Risk Reduction and Management, Climate Change Adaptation and Disaster Risk]*

MOKBUL MORSHED AHMAD, B.Sc., M.Sc., Dhaka University, Bangladesh; M.Sc., AIT, Thailand; PhD, University of Durham, UK.

Associate Professor *[NGO Management, Community and Rural Development]*

Visiting Faculty

TAKASHI ODA, B.Ed., Miyagi University of Education, Japan; M.Sc, PhD, Tohoku University, Japan

[Multi-stakeholder Engagement for Disaster Risk Reduction]

MASAHIKO NAGAI, D. Eng., University of Tokyo, Japan

[Spatial Information Engineering, Remote Sensing, GIS, Image Processing, Mobile Mapping Ontology, Data Interoperability, Environmental Information Science]

HIROYUKI MIYAZAKI, Ph.D., The University of Tokyo, Japan.

[GIS, Satellite Remote Sensing, Positioning Technology, Mobile Phone Technology, Energy, Environment, Disaster Management, Urban Infrastructure, Public Health]

MUKAND S BABEL, B.Eng., Rajasthan Agricultural University, India; M.Eng., D.Eng., AIT, Thailand.

Professor *[Drought Forecasting and Management]*

TAWATCHAI TINGSANCHALI B.Eng. (Hon) Chulalongkorn University, Thailand; M.Eng., Asian Institute of Technology, Thailand; D.Eng., Asian Institute of Technology, Thailand.

Chair Professor of Water Resources Engineering, Nakhon Pathom Rajabhat University *[Floods and Droughts]*

Program Officer
VINEETA THAPA

3. Grants and Sponsored Research Completed in 2016

-

4. On-going Grants and Sponsored Research

-

5. Publications

Papers in Refereed Journal

Tingneyuc S., Sujoy K. J., Indrajit P., Dilip K. P. (2016). Earthquake hazard assessment in the Momase region of Papua New Guinea. Spatial Information Research, Springer. Vol: 24, 617 – 637. Doi: 10.1007/s41324-016-0058-2.

Tingneyuc S., Sujoy K. J., Indrajit P., Dilip K. P. (2016). GIS Based Evaluation in Earthquake Hazard Micro-Zonation - A Case Study of Madang and Morobe Province, Papua New Guinea. International Journal of Advanced Engineering Research and Science. Vol: 3, 95-104.

Tingneyuc S., Sujoy K. J., Indrajit P., Dilip K. P. (2016). A GIS Based Approach into Delineating Liquefaction Susceptible Zones Through Assessment of Site-Soil-Geology-A Case Study of Madang and Morobe Province in Papua New Guinea (PNG). International Journal of Innovative Research in Science, Engineering and Technology. Vol: 5, 6616 – 6629. Doi:10.15680/IJIRSET. 2016.0505003.

6. Doctoral Students' Dissertation

Erosion and Flood Mitigation in Jiadhal Basin Using Remote Sensing and an Ecosystem Based Disaster Risk Reduction Approach
By: Mr. Arnob Bormudoi
Supervisor: Dr. Masahiko Nagai (Chairperson)

7. Masters Students' Theses and Research Studies

Earthquake Awareness, Preparedness and Readiness of Schools in Bago Township, Myanmar
By: Miss Chong Su Feng Elaine
Supervisor: Prof. Pennung Warnitchai (Chairperson)

Assessing Coordination of the Relief Operation in Earthquake Emergency of Kathmandu District, Nepal
By: Miss Serena Amatya
Supervisor: Prof. Jayant Kumar Routray (Chairperson)

Influence of Parental Involvement on Disaster Risk Reduction's Learning Outcomes of Early Childhood Children in Bangkok, Thailand
By: Miss Kullanan Sukwanchai
Supervisor: Prof. Pennung Warnitchai (Chairperson)

Risk Assessment and Reduction Measures in Landslide and Flash Flood Prone Areas: A Case of the Thepparat Community, Nakhon Si Thammarat Province, Thailand
By: Mr. Pongpaiboon Tularug
Supervisor: Dr. Indrajit Pal (Chairperson)

Chapter 5: SCHOOL OF MANAGEMENT

5.1 Introduction

AIT School of Management (SOM) was established in October 1987 to meet the growing needs in Asia for graduate management education. In line with AIT's mission, SOM's objective is to make a difference in the quality of management education and practices in the Asia-Pacific region leading to sustainable development, technological leadership, entrepreneurial spirit, wealth creation and pride. SOM believes in the development of corporate leaders not just for the present but also for the future to face the challenges posed by the dramatic social, economic, political and technological changes in Asia. The programs at SOM offer a unique competitive advantage to managers and future leaders in the region.

Currently SOM has students from over 40 countries and various academic backgrounds enrolled in its programs. In every case study, group work and assignment the students work in groups with students from 3 or more different nations. The bonds formed by the students during their stay in SOM have proved as important as the knowledge and skills they gain. At SOM we stress on ethics and moral values as much as the need to produce managers who can drive their organizations to profitability and prosperity.

5.2 Mission

Mission

To develop socially responsible global leaders who will enhance organizational performance for the growth and sustainable development of economies "and societies in Asia in particular and the world in general.

Vision

"To become the leading creator and disseminator of Asian management knowledge, practices and values"

5.3 School Governance

Dean of School

DONYAPRUETH KRAIRIT, BS, Thammasat Univ, Thailand; MS, Univ of Colorado at Boulder; PhD, Massachusetts Inst of Tech, Cambridge, USA.

Associate Professor *(Technology, Management, Management of Telecommunications Technologies and Public Policy)*

STEPHEN ABELN M.Phil., Cambridge University, Ph.D. in Management, Cambridge University, USA. (From August, 2016)

Professor *(International Economics; International Labour; Cross Cultural Management; Collective Intelligence; Smart Data as next generation to Big Data)*

5.4 Management Development and Research

The School of Management is involved in training and extension activities through the Management Development Programs (MDP). MDP was established as an integral part of the School of Management (SOM). It is the research, consultancy, and executive development arm of the School. It is SOM's non-degree academic activities and programs, which complement SOM's degree programs and other related activities of SOM. It facilitates the linkage between SOM, AIT and the business community and public sector in Asia.

The objectives of MDP:

- To establish closer links between the business community/public sector and SOM through executive education programs and consulting in the areas of Management of Technology, International Business, Service Marketing and Technology, and International Public Management.
- To facilitate the development of research projects which are both of high practical value to the business community/public sector and academically rigorous.

MDP activities include:

1. Corporate relationship management
2. Executive development programs
3. Organizing executive forums, workshops, seminars, and conferences
4. Other activities contributing to SOM's objectives

5.5 SOM Research Focus

SOM primary area of research focuses, but not limited to,

"THE BUSINESS AND INNOVATION MODELS FOR A GREEN ECONOMY".

Under this thematic area, there are five sub-thematic areas, including:

1. Sustainability and Corporate Social Responsibility in Business
2. Climate Change Policy and Corporate Compliance
3. Social responsibility, Behavioral Change and Social Impact
4. Innovation in Green Products and Services
5. Technology needs assessment and transfer

5.6 Research Facilities and Laboratories

The School of Management has 5 state-of-the-art multimedia classrooms including a large amphitheater for academic use. Each classroom is equipped with a multimedia podium that consists of LCD projectors, audio cassette recorder, VHS player/ recorder, slide projectors, built-in desktop PC, laptop and wireless internet connection.

The School of Management provides the students with an extensive range of online journals and database. The students can access the journal and database to read articles from reputed international journals.
Computer Lab consultants are available during office hours to assist with computer related problems. The consultants will provide help by answering general questions relating to the lab e.g., how to obtain a computer account, questions related to the PC Proficiency about software applications, email, printing etc.

5.7 Faculty and Research Staff

Full-time Faculty

YUOSRE BADIR, M.S., The Swiss Federal Institute of Technology Lausanne (EPFL), M.ScUniversity of Putra Malaysia, Ph.D (MOT) EPFL

Associate Professor (Technology, International Strategic Alliance, Organization Theory and Design)

BARBARA IGEL, BA, MA, Technical Univ, Berlin; PhD, Freie Univ, Berlin, Germany.

Associate Professor (High-tech Entrepreneurship; Industrial Economics; Know-ledge Management; Management of Innovation)

SUPASITH CHONGLERTTHAM, B. Engineering, ChulalongkornUniv, Thailand; MBA Finance, Tulane Univ, USA; PhD, Univ of Hawaii, Manoa, USA

Senior Instructor (Corporate Finance, Derivatives, Corporate Governance, Financial Accounting)

JUTHATHIP JONGWANICH, BA, MA, ThammasatUniv, Thailand; PhD, The Australian National University, Australia

Assistant Professor (International Economics, Multinational Enterprises, Managerial Economics and Business environment)

DONYAPRUETH KRAIRIT, BS, ThammasatUniv, Thailand; MS, Univ of Colorado at Boulder; PhD, Massachusetts Inst of Tech, Cambridge, USA.

Associate Professor (Technology, Policy and Management)

SUNUNTA SIENGTHAI, BA, Chulalongkorn Univ, Thailand; MA, PhD, Univ of Illinois, USA.

Professor (Labor & Industrial Relations, HRM, Wages & Productivity)

VATCHARAPOL SUKHOTU, BEng, KasetsartUniv, Thailand; MEng, Univ of Houston, Texas, USA; PhD, Texas A&M Univ, College Station, Texas, USA

Assistant Professor (Operation Managementand Supply Chain Management)

WINAI WONGSURAWAT, B.A.S (Econ & Math., Comp. Sc.) Stanford University USA PH.D (Managerial Econ and Strategy), Kellogg School of Management, Northwestern University, USA

Assistant Professor (Strategic Management)

Visiting and Adjunct Faculty

EVANGELOS ANGELOS AFENDRAS, B.A., M.A, Ph.D(Humanitites-Linguistics) The Johns Hopkins Univ., USA.

Adjunct Faculty (Cross-Cultural Management, Organization Behavior, Management of Change)

Prof. HITENDRA BARGAL, MBE, LLM, PhD Indore University, India,

Visiting Professor (Marketing & Entrepreneurship)

URS BUMBACHER, M.A, Ph.D (Economics & Business Admin.), Univ. of Basel, Switzerland.

Adjunct Professor (International Business)

Dr. GAUTAM KMAR DUTTA, B.E, MBA, Ph.D. – IIT, India

Visiting Associate Professor (International Marketing, Marketing Management, Technology Innovation Management, Entrepreneurship and Small Business Development.**)**

Prof.GEETIKA GOEL, Ph.D University of Allahabad- India

Visiting Professor (Technology & Development, High Tech Entrepreneurship)

RUDOLF GRUENIG, Ph.D (BA), University of Bern, Switzerland.

Adjunct Faculty (Strategic Management)

ROLAND AMOUSSOU-GUENOU, LL.B in Business Law, National Univ. of Benin.LL.M in International Business Law, Univ. of Toulouse. Ph.D. in International Law, Univ of Paris, France.

Adjunct Faculty (Policy and Legal Issues)
NAZRUL ISLAM, BScEng, BUET, Bangladesh; MEng, DEng, AIT, Thailand.

Visiting Professor (Management of Technology; Technology and Development; Technology Policy; Technology Transfer)

LALIT M JOHRI, BSc (Hons), MSc, MBA, PhD, Univ of Delhi, India.

Adjunct Faculty (International Business; International Joint Ventures; Marketing; Negotiations; Strategic Management)

ILKKA KAURANEN, MS Engg, Lic Tech, DTech, Helsinki University of Technology, Finland.

Adjunct Professor *(*Development and Management in Industry)

ROBERT S. KIETEL, BA, Univ. of Colorado; Ph.D, De La Salle University, The Philippines.

Adjunct Faculty (HRM, Leadership)

TRITOS LAOSIRIHONGTHONG, Ph.D., (Management of Technology) School of Management, AIT, Thailand

Adjunct Faculty (Manufacturing Strategy and Supply Chain Management)

Prof.KALPANA MATHUR, PhD in Human Resource Management, Jai Narain Vyas University (JNVU) - India

Visiting Professor (Human Resource Management)

PETER MOSER Ph.D., M. Econ., University of St. Gallen, Switzerland

Visiting Faculty (European Integration and International Trade Policy)

LOGAN MULLER, Ph.D (Sustainability), Kennedy Western University, USA.
Adjunct Faculty (International Business)

INDRA M PANDEY, MComm, PhD, Univ of Delhi, India.

Adjunct Professor (Corporate Finance, Emerging Capital Markets)

ASHISH SADH, M.B.A., A.P.S. Univ., Rewa.Ph.D (Marketing) Devi Ahilya Univ., Indore.

Adjunct Faculty (Sales and Marketing)

RAGNAR THOR GRUNDTVIG SEGAARD, Ph.D London School of Foreign Trade, England, Master of Business Administration, University of Gothenburg, Sweden

Adjunct Faculty (Finance)

FREDRIC W SWIERCZEK, BA, Temple Univ, USA; MA, PhD, Univ of Pittsburgh, Pennsylvania, USA.

Visiting Associate Professor (Behavioral Science; Organizational Development)

GERARD TOCQUER, Ph.D., University of Nice-SophiaAntipolis, France, M.A (Marketing), University of Sherbrooke, Canada, C.P.D., CornellUniversity, Ithaca USA
Adjunct Faculty (Service Innovation, Service Culture and Branding)

ALLAN WILLIAM, B.Ed., Univ. of Tasmania; MSc., Ph.D (Organization Development) MITASH Univ., USA.

Adjunct Faculty (Organization Behavior, Leadership & Business Performance)

WILLI ZIMMERMANN, Ph.D. (Political Science) University of Munich, Germany, Post-Doc. Diploma, Swiss Federal Institute of Technology Switzerland

Adjunct Faculty (Public Sector Management, Environmental Management)

5.8 Grants and Sponsored Research Completed 2016

International Executive MBA- Vietnam for Dongnai#4 Group
Duration: 1-Jan-2012 to 31- Dec-2016
Project Investigator(s): Barbara Igel
Sponsor: Multi-donor
Total Contracted Amount (THB): 8,801,812.50

International Executive MBA- Vietnam for Vung Tau#4th Group
Duration: 1-Jan-2012 to 31- Dec-2016
Project Investigator(s): Barbara Igel
Sponsor: Multi-donor
Total Contracted Amount (THB): 9,119,749.275.00

International Executive MBA Vietnam for ong Nai 4th group
Duration: 1-Jan-2012 to 31- Dec-2016
Project Investigator(s): Barbara Igel
Sponsor: Multi-donor
Total Contracted Amount (THB): 8,625,000.00

International Executive MBA Vietnam for Vung Tau 4th group
Duration: 1-Jan-2012 to 31- Dec-2016
Project Investigator(s): Barbara Igel
Sponsor: Multi-donor
Total Contracted Amount (THB): 8,936,550.00

International Executive MBA Vietnam for HCMSC#8 group
Duration: 1-Aug-2011 to 31- Dec-2016
Project Investigator(s): Barbara Igel
Sponsor: Multi-donor
Total Contracted Amount (THB): 11,250,000.00

International Executive MBA Vietnam for Hanoi #12.2 and # Hanoi 12.3 group
Duration: 1-Aug-2011 to 31- Dec-2016
Project Investigator(s): Barbara Igel
Sponsor: Multi-donor

Total Contracted Amount
(THB): 13,875,000.00

Entrepreneurship: A study of personal attributes leadership behavior and firm performance
Duration: 01-01-2016 to 30- 06-2016
Project Investigators: Dr Vimolwan Yukongdi
Sponsor: AIT
Total Contracted Amount
(THB): 50,000.00

International Executive MBA- Vietnam for Dongnai#4 Group
Duration: 01-01-2012 to 31- 12-2016
Project Investigators: Dr. Barbara Igel
Sponsor: Multi-donor
Total Contracted Amount
(THB): 8,801,813.00

International Executive MBA- Vietnam for Vung Tau#4th Group
Duration: 01-01-2012 to 31- 12-2016
Project Investigators: Dr. Barbara Igel
Sponsor: Multi-donor
Total Contracted Amount
(THB): 9,119,749.00

DBA Program in Bangkok 2007
Duration: 01-02-2007 to 31- 12-2016
Project Investigators: Indra Pandey, Nicholas Dimmit, Freidric Swirczek, Rian Beise-zee, Nazrul Islam, Do Ba Khang, Sundar Venkatesh,Sununta Siengthai, Lalit Johri
Sponsor: Participants
Total Contracted Amount
(THB): 19,440,000.00

DBA Program in Sri Lanka 2006
Duration: 31-10-2006 to 31- 07-2016
Project Investigators: Nicholas Dimmit, Do Ba Khang, Sundar Venkatesh,Sununta Siengthai, Nazrul Islam, Lalit Johri
Sponsor: Participants
Total Contracted Amount
(THB): 11,988,000.00

DBA Program in Bangkok 2006
Duration: 31-10-2006 to 31- 07-2016
Project Investigators: Indra Pandey, Nicholas Dimmit, Freidric Swirczek, Rian Beise- zee, Nazrul Islam, Do Ba Khang, Sundar Venkatesh, Sununta Siengthai, and Lalit Johri
Sponsor: Participants
Total Contracted Amount
(THB): 15,552,000.00

5.9 On-going Grants and Sponsored Research

International Executive MBA- Vietnam for Hanoi#13.1 & Hanoi#13.2 Group
Duration: 1-Aug-2012 to 31- Dec-2017
Project Investigator(s): Barbara Igel
Sponsor: Multi-donor
Total Contracted Amount
(THB): 12,246,000.00

International Executive MBA- Vietnam for HCMC#9th Group
Duration: 1-Aug-2012 to 31- Dec-2017
Project Investigator(s): Barbara Igel
Sponsor: Multi-donor
Total Contracted Amount
(THB): 10,332,562.50

Doctor of Business Administration
Duration: 1-Aug-2012 to 31- Jun-2019
Project Investigator(s): Winai Wongsurawat
Sponsor: Multi-donor
Total Contracted Amount
(THB): 19,440,000.00

International Executive MBA- Vietnam for Hanoi 16
Duration: 01-10-2015 to 31- 12-2020
Project Investigators: Prof Nazrul Islam
Sponsor: Multi-donor
Total Contracted Amount
(THB): 9,520,000.00

International Executive MBA- Vietnam for HCMC#12
Duration: 01-08-2015 to 01- 05-2020
Project Investigators: Prof Nazrul Islam
Sponsor: Multi-donor
Total Contracted Amount
(THB): 9,520,000.00

International Executive MBA- Vietnam for Hanoi#14Th
Duration: 01-08-2013 to 31- 05-2018
Project Investigators: Dr.Donyaprueth Krairit
Sponsor: AIT
Total Contracted Amount
(THB): 8,820,000.00

International Executive MBA- Vietnam for Vung Tau#5Th Group
Duration: 01-01-2013 to 31- 12-2017
Project Investigators: Dr. Barbara Igel
Sponsor: AIT
Total Contracted Amount
(THB): 8,511,000.00

International Executive MBA- Vietnam for Tau#6Th Group
Duration: 26-10-2013 to 31- 12-2018
Project Investigators: Dr.Donyaprueth Krairit
Sponsor: AIT
Total Contracted Amount
(THB): 10,822,650.00

International Executive MBA- Vietnam for HCMC#10
Duration: 01-08-2013 to 31- 12-2018
Project Investigators: Dr.Donyaprueth Krairit
Sponsor: AIT
Total Contracted Amount
(THB): 8,820,000.00

International Executive MBA- Vietnam for Hanoi#13.1 & Hanoi#13.2 Group
Duration: 01-08-2012 to 31- 12-2017
Project Investigators: Dr. Barbara Igel
Sponsor: Multi-donor
Total Contracted Amount
(THB): 12,246,000.00

International Executive MBA- Vietnam for HCMC#9th Group
Duration: 01-08-2012 to 31- 12-2017
Project Investigators: Dr. Barbara Igel
Sponsor: Multi-donor
Total Contracted Amount
(THB): 10,332,563.00

International Executive MBA Vietnam for Hanoi# 17
Duration: 15-08-2016 to 31- 12-2017
Project Investigators: Prof Lawrence Stephen Ablen
Sponsor: Multi-donor
Total Contracted Amount
(THB): 6,125,000.00

International Executive MBA Vietnam for HCMC# 13
Duration: 01-08-2016 to 31- 12-2017
Project Investigators: Dr. Barbara Igel
Sponsor: Multi-donor
Total Contracted Amount

(THB): 5,880,000.00

International Executive MBA Vietnam for VT# 8
Duration: 01-08-2012 to 31- 12-2017
Project Investigators: Dr. Barbara Igel
Sponsor: Multi-donor
Total Contracted Amount
(THB): 7,188,650.00

5.10 Publications

Book Chapters

Barbara I., Yeung C.Y., Sheik A. P. (2016). Catalyzing Social Innovation - How Intel Helped to Create A Vibrant Social Ecosystem in China. In Lenssen, Gilbert.Rhee, Jay Hyuk, Martinez, Fabien (Eds.). The Role of Corporate Sustainability in Asian Development. Publisher: Springer. ISBN 978-3-319-45158-9 Series: Advances in Business Ethics Research, Vol. 7.

Rowley C., Yukongdi V. (2016). Positive Action. In S. Johnstone and A. Wilkinson. Encyclopedia of Human Resource Management. Cheltenham, UK.

International Journal Articles

Darawong C., Igel B., Yuosre F. Badir (2016). The impact of communication on conflict between expatriate and local managers in new product development projects of MNC subsidiaries: A local perspective. Journal of Asia-Pacific Business, Vol: 17, 81-99.

Afsar B, Yuosre F. Badir, Safdar U. (2016). Linking spiritual leadership and employee pro-environmental behavior: The influence of workplace spirituality, intrinsic motivation, and environmental passion. Journal of Environmental Psycholog. Vol: 45, 79-88. 5-years impact factor: 4.607.

Dost M., Yuosre F. Badir, Ali Z., Tariq A. (2016). The impact of intellectual capital on innovation generation and adoption. Journal of Intellectual Capital. Vol: 17, 675-695.

Ali Z., Yuosre F. Badir, Dost M. (2016). Sustainable new product development and social sustainability: The impact of stakeholder support. Sustainability: The Journal of Record. Vol: 9, No. 2, April 2016. DOI: 10.1089/sus.2016.29048.za

Afsar B., Yuosre F. Badir (2016). The mediating role of psychological empowerment on the relationship between person-organization fit and innovative work behavior. Journal of Chinese Human Resource Management. Vol: 7, 26 May 2016.

Ali Z., Yuosre F. Badir, Dost M., Afsar B. (2016). The dynamics of expert and team intuition in NPD projects: The role of environmental turbulence and expert power. Journal of High Technology Management Research. Vol: 27, 20 October 2016.

Yuosre F. Badir (2016). Person Organization fit, Perceived Organizational Support and Organizational Citizenship Behaviour: The role of Job Embeddedness. Journal of Human Resources in Hospitality & Tourism. Vol: 15, 105-116.

Chonlatis D., Barbara I. (2016). The impact of communication on conflict between expatriate and local NPD managers of MNC subsidiaries in Thailand: A local perspective. Journal of Asia-Pacific Business. Vol: 17. 81 – 99.

Sununta S. (2016). The Impact of Human Resource Information System (HRIS) on Organizational Effectiveness: A Case Study of the Textile Industry in Thailand. International Journal of Asian Business and Information Management. Vol: 7, 41-53, July-September 2016. Doi: 10.4018/IJABIM.2016070103.

Rapeerat T., Sununta S., Lalit M. J. (2015). Employees Perspective towards Strategy Execution in Facility Management in Thailand. Facilities. Vol: 34, 682 – 702. Vol.34, Issue 11/12, pp. 682-702.

Sununta S. (2016). The Interaction Effect of Job Redesign and Job Satisfaction on Employee Performance. Evidence-Based HRM Journal. Vol: 4, 162-180, Issue 2.

Yuttachai H., Somnuk A. (2016). The Network-based Capability and Innovative Capabilities of Small and Medium-Sized Enterprises. Executive Journal, Vol. 36, No.2., July - December, 2016 (Text in Thai).

Yukongdi, V. (2016). Characteristics of Successful Managers: A study of Thai Employees Perception, Review of Integrative Business and Economics Research, Vol 5(3), 322-329 .

Papers in Conference Proceedings

Apinya Kamolsook, Yuosre F. Badir, Bjoern Frank. (2016). Consumer motivations to switch to disruptive technology products. In Marketing in a Post-Disciplinary Era, Christchurch, New Zealand. Best paper in Entrepreneurship and Innovation Track, 5-7 December.

Dost M., Yuosre F. Badir, Ali Z. (2016). The influence of sources of knowledge on process innovation generation and adoption. In Academy of Management. August, LA., USA. Publisher: Aom. http://proceedings.aom.org/content/2016/1/14128.short

Barbara I., Nayana D.P. D. (2016). Surviving in Hostile Markets the Case of a High-tech Entrepreneur in Sri Lanka. International Conference on Business and Information (BAI). Nagoya, Japan, 3-5 July 2016.

Ranjika L. P., Barbara I. (2016). Identifying the Key Motives of Academic Entrepreneurs in Sri Lanka. The 8th IEEE International Conference on Management of Innovation and Technology (ICMIT2016). Publisher: IEEE, Bangkok, Thailand, 19 to 22 September 2016.

Yukongdi V. (2016). Characteristics of Successful Managers: A Study of Thai Employees. Society of Interdisciplinary Business Research-Thammasat Conference on Interdisciplinary & Business. Publish: SIBR, Bangkok, 2-3 June.

5.11 Doctoral Students' Dissertation

Understanding Entrepreneurial Attitude of Multilevel Marketing Members: A Case Study of Charoen Osot Inter-National Company, Thailand
By: Mr. Somchai Hatchaleelaha
Supervisor: Dr. Winai Wongsurawat (Chairperson), Dr. Yuosre Badir (Co-chairperson)

A Study of Strategy Execution: Case Studies of Facility Management Companies in Thailand
By: Mr. Rapeerat Thanyawatpornkul
Supervisor: Prof. Sununta Siengthai

The Expectation of Higher Education Quality in Thailand: Multiple Stakeholder Perspectives
By: Miss Mukdashine Sandmaung
Supervisor: Dr. Vimolwan Yukongdi (Chairperson), Dr. Do Ba Khang (Co-chairperson)

Conceptualizing Customer Engagement and Attracting New Target Prospects
By: Mr. Pichate Benjarongrat
Supervisor: Dr. Barbara Igel (Chairperson), Dr. Mark Neal (Co-chairperson)

Enhancing the Employability of IT Graduates in Vietnam
By: Mr. Phan Vo Minh Thang
Supervisor: Dr. Winai Wongsurawat (Chairperson), Dr. Yuosre Badir (Co-chairperson)

The Effect of Cross-Cultural Values and Cultural Adaptability on Organization Performance in Chinese-Related Firms in Thailand
By: Mr. Kitisak Sorndee
Supervisor: Prof. Sununta Siengthai

The Impact of Information Quality Management on Information Quality: An Empirical Study of Thailand's Healthcare Sector
By: Mrs. Intiraporn Mulasastra
Supervisor: Dr. Donyaprueth Krairit

The Effects of Incentivized Word-of-Mouth on Brand Equity
By: Mrs. Chompunuch Pongjit
Supervisor: Dr. Vatcharapol Sukhotu

Consumer Purchase Intentions for Social Media on Facebook
By: Mrs. Supond Boon-Long
Supervisor: Dr. Winai Wongsurawat

Job Redesign and Employee Performance: The Mediating Effects of Human Capital Investment (HCI) and Job Satisfaction
By: Miss Patarakhuan Pila-Ngarm
Supervisor: Prof. Sununta Siengthai

Foreign Direct Investment, Productivity Differentials and Spillover: A Case of the Vietnamese Manufacturing Sector
By: Mrs. Truong Thi Ngoc Thuyen
Supervisor: Dr. Juthathip Jongwanich

Influence of Intellectual Capital on Process Innovation Generation and Adoption
By: Mr. Mir Dost Brohi
Supervisor: Dr. Yuosre Badir

Switching Mechanisms Toward Purchasing Eco-friendlier Products
By: Mr. Burhanudin
Supervisor: Dr. David Ferguson

Budgeting in Higher Education
By: Miss Payear Sangiumvibool
Supervisor: Dr. Yuosre Badir (Chairperson), Dr. Supasith Chonglerttham Co-chairperson

Factors Influencing Decisions to Patronize Spas among Foreign Business Visitors and Foreign Tourists in the Samui District of Suratthani, Thailand
By: Mrs. Waritsara Somkeatkun
Supervisor: Dr. Yuosre Badir (Chairperson), Dr. Winai Wongsurawat Co-chairperson

Sustainable Retail Supply Chain Management Practices: A Case Study of Modern Trade Retailer in an Emerging Market
By: Mr. Watcharapoj Sapsanguanboon
Supervisor: Dr. Vatcharapol Sukhotu

Strategic Management Accounting, Corporate Governance and Firm Performance: Relationships and Mediating Effect of Strategic Management Accounting
By: Mr. Teerachai Arunruangsirilert
Supervisor: Dr. Yuosre Badir (Chairperson), Dr. Supasith Chonglerttham (Co-chairperson)

Expert Intuition in Radical New Product Development Decision Making: An Individual-Team Interaction Perspective
By: Mr. Zeeshan Ali
Supervisor: Dr. Yuosre Badir

5.12 Masters Students' Theses, Research Studies and Projects

Analysis of Challenges and Opportunities for Green Energy Financing in Bangladesh
By: Miss Syeda Ismoth Iqbal
Supervisor: Dr. Shobhakar Dhakal

Supply and Demand Analysis of Biofuel Markets in Thailand and the Philippines
By: Mr. Kiddakron Thavong
Supervisor: Dr. Shobhakar Dhakal

Analysis of Determinants and Barriers to the Adoptation of Solar Energy Based Technologies for the Hotel Industry in Nepal
By: Mr. Ayush Dhungel
Supervisor: Dr. Yuosre Badir

Pull Factors Influencing International Students' Decision to Study in Thailand
By: Mr. Sanaullah
Supervisor: Dr. Donyaprueth Krairit

Transformation from an NGO to a Successful Business: The Case Study of ACLEDA Bank Plc in Cambodia
By: Mr. Heng Sokea
Supervisor: Dr. Barbara Igel

Determinants of Entrepreneurial Intention Among Students: A Study Based on Asian Institute of Technology
By: Mrs. Nusrat Zahan Lopa
Supervisor: Dr. Vimolwan Yukongdi

Supply Chain Optimization of the Beverage Industry Using Advanced Planning Systems: A Case Study

By: Miss Sutinee Somabutr
Supervisor: Dr. Vatcharapol Sukhotu

Impact of Competency-Based Management Approach on Employee Performance: A Study of Managerial Level of Network and Telecom Industry in Myanmar
By: Miss May Thant Sin
Supervisor: Prof. Sununta Siengthai

Perceived Barriers of Career Growth in the Service Sector in Myanmar
By: Miss Nang Moon Day
Supervisor: Prof. Sununta Siengthai

Factors Affecting Job Satisfaction Among Teachers of Basic Educational Community Learning Centers in Kayin State, Myanmar
By: Miss Nan Khaing Sandar Lwin
Supervisor: Prof. Sununta Siengthai

An Application of AHP in Prioritizing Critical Factors of Coal-based Power Generation: A Case of Bangladesh
By: Miss Rafia Zaman
Supervisor: Prof. Nazrul Islam

Entrepreneurial Intention of the University Students': An Inter-Regional Comparison
By: Miss Dola Biswas
Supervisor: Prof. Sununta Siengthai

Impact of Degree of Linkages Aamong Suppliers, Internal Integration and Customer in Supply Chains of Companies in Bangladesh
By: Mr. Raihan Sharif

Supervisor: Dr. Vatcharapol Sukhotu
Key Motives of Academic Entrepreneurs in Sri Lanka
By: Miss Ranjika Lalani Perera
Supervisor: Dr. Barbara Igel

Personality Traits of Successful Managers: A Study of Gender Differences
By: Miss Vo Phuong Oanh
Supervisor: Dr. Vimolwan Yukongdi

Employee Satisfaction in Thai Industrial Estates
By: Miss Sutthida Muangrod
Supervisor: Prof. Sununta Siengthai

Introducing Negatively Perceived Products into the EU Market: The Case of Insect Food
By: Mr. Marco Putero
Supervisor: Dr. Yuosre Badir

National Culture and Performance Management in Multinational Companies Operating in Thailand
By: Miss Eleonore Jezequel
Supervisor: Dr. Vimolwan Yukongdi

Development of the Sharing Economy in South-East Asia with a Special Focus on Thailand and Singapore
By: Miss Anne Martine Allouis
Supervisor: Dr. Barbara Igel

The Reverse Road: Asian Cosmetics Brand's Strategy to Establish themselves in Western Countries
By: Miss Camille Le Manach
Supervisor: Dr. Yuosre Badir

Determinants of Trade Balance of Bangladesh
By: Mr. Mohammad Habib Hossain
Supervisor: Dr. Sundar Venkatesh (Chairperson), Mr. Weerakoon A. Wijewardena (Co-chairperson)

Dollarization and Exchange Rate Volatility in Cambodia
By: Mr. Socheat Sou
Supervisor: Prof. Shyamal Roy (Chairperson), Dr. Sundar Venkatesh (Co-chairperson)

Effectiveness of Management Development Programs in ACLEDA Bank Plc
By: Nguyen Thu Thuy
Supervisor: Prof. Shyamal Roy (Chairperson), Dr. Sundar Venkatesh (Co-chairperson)

Determinants of Financial Inclusion in Cambodia
By: Mrs. Sotpolin Sor
Supervisor: Dr. Kanittha Tambunlertchai (Chairperson), Dr. Sundar Venkatesh (Co-chairperson)

Large Loan Restructuring Framework of Bangladesh: Comparison with Selected Asian Countries and Establishing Appropriate Benchmarks
By: Mrs. Sumsun Naher Nupur
Supervisor: Dr. Sundar Venkatesh (Chairperson), Mr. Weerakoon A. Wijewardena (Co-chairperson)

Foreign Commercial Borrowing Worsening Domestic Private Credit Demand of Bangladesh: Impacts on Inflation and Deposit Rate
By: Mr. Mohammad Main Uddin
Supervisor: Prof. Shyamal Roy (Chairperson), Dr. Sundar Venkatesh (Co-chairperson)
Estimating the Growth-interest Rate Trade-off Threshold Point: A Case of Bangladesh
By: Mr. Ear Mohammad
Supervisor: Dr. Sundar Venkatesh (Chairperson), Mr. Weerakoon A. Wijewardena (Co-chairperson)

Determinants of Inflation in Bangladesh: An Empirical Analysis
By: Mr. Muhammad Kamrul Hasan
Supervisor: Prof. Shyamal Roy (Chairperson), Dr. Sundar Venkatesh (Co-chairperson)

Understanding Budget Deficit and its Consequences: Survey Findings from Bangladesh
By: Mr. Muhammad Shahidul Islam Molla
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Feasibility of Export Factoring in Bangladesh: A Field Study
By: Mr. Mohammad Zahirul Islam
Supervisor: Prof. Shyamal Roy (Chairperson), Dr. Sundar Venkatesh (Co-chairperson)

Crowding Out Effect of Public Borrowing: The Case of Bangladesh
By: Mr. Abu Yousuf Muhammad Solaiman
Supervisor: Prof. Shyamal Roy (Chairperson), Dr. Sundar Venkatesh (Co-chairperson)

Financial Literacy in Bangladesh: A Study of Literate and Salaried Individuals in Dhaka City
By: Mr. Gorango Kumar Choudhury
Supervisor: Prof. Shyamal Roy

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Challenges for the Sustainability of Agent Banking in Bangladesh
By: Mr. Mohammad Fazlul Karim
Supervisor: Dr. Sundar Venkatesh (Chairperson), Dr. Kanittha Tambunlertchai (Co-chairperson)

Does Liquidity Affect Profitability? A Study of Commercial Banks in Bangladesh
By: Pham Duy Khoa
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Standardizing the Individual Credit Rating System in Sampath Bank
By: Mr. Ruwanpura Desha Bandara
Supervisor: Dr. Huynh Trung Luong
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Exploring the Opportunities for Enhancing Customer Satisfaction in Sampath Bank PLC, Sri Lanka
By Hoang Mr. Hettiarachchige Rajith Shiwantha Pinto Jayawardana
Supervisor: Dr. Sundar Venkatesh (Chairperson), Mr. Weerakoon A. Wijewardena (Co-chairperson)

Employee Satisfaction and Performance in Petro Vietnam Insurance Corporation
By: Mr. Dang Viet Hung
Supervisor: Dr. Fredric W. Swierczek (Chairperson), Prof. Sununta Siengthai (Co-chairperson)

Improve the Effectiveness of the Work Control at Rosneft Vietnam Offshore Facility
By: Mr. Nguyen Tuan Anh
Supervisor: Prof. Marie Therese Claes (Chairperson), Dr. Barbara Igel (Co-chairperson)

Solutions to Improve Employee Attraction at R.K Marble Vietnam
By: Mr. Do Hong Cuong
Supervisor: Dr. Fredric W. Swierczek (Chairperson), Dr. Huynh Trung Luong (Co-chairperson)

An Assessment of Training and Human Resource Development of Vietnam Electricity from 2016-2020
By: Mr. Tran Van Tien
Supervisor: Dr. Fredric W. Swierczek (Chairperson), Dr. Huynh Trung Luong (Co-chairperson)

Identifying the Conflicts in an Organization to Improve the Working Environment and Manage Conflicts Effectively: A Case Study of SCG Trading Vietnam
By: Ms. Nguyen Thi Huyen Chau
Supervisor: Prof. Marie-Therese Claes (Chairperson), Dr. Barbara Igel (Co-chairperson)

Development Strategy in the Context of Declining Production Output, Unstable Crude Oil Price and Tough Competition: A Case Study of Joint Venture Vietsovpetro
By: Mr. Nguyen Truong Chinh
Supervisor: Dr. Winai Wongsurawat (Chairperson), Dr. Barbara Igel (Co-chairperson)

Marketing for the Petroleum Equipment Repair Workshop: A Case Study of the Mechanical and Energy Division of Vietsovpetro Joint Venture
By: Mr. Dau Xuan Phuc
Supervisor: Dr. Winai Wongsurawat (Chairperson), Dr. Barbara Igel (Co-chairperson)

Development of the System and Market Operator (SMO) in the Vietnam Competitive Generation Power Market (VVCGM)
By: Mr. Nguyen Duc Ninh
Supervisor: Dr. Fredric W. Swierczek (Chairperson), Prof. Sununta Siengthai (Co-chairperson)

Developing the Internal Supervisory System of Petro Vietnam for Risk Management
By: Mr. Tran Thanh Tung
Supervisor: Dr. Fredric W. Swierczek (Chairperson), Prof. Sununta Siengthai (Co-chairperson)

Improving Competitiveness of the Vietnam Marine Transportation Services Enterprises: A Case Study with Petrovietnam Technical Services Corporation - Marine Services Subsidiary (PTSC MARINE)
By: Mr. Vu Quoc Huong
Supervisor: Dr. Huynh Trung Luong

Improving the Competitiveness of the Import- Export Payment Operation: A Case Study of JSC Bank for Foreign Trade of Vietnam
By: Ms. Nguyen Lan Anh
Supervisor: Dr. Yuosre Badir
Developing Strategies for a New Life Insurance Company in Vietnam: A Case Study of PVI Sun Life
By: Mr. Nguyen Xuan Dieu
Supervisor: Dr. Huynh Trung Luong

Developing the POS service in the Bank of Investment and Development of Vietnam
By: Mr. Nguyen Danh Tung
Supervisor: Dr. Fredric W. Swierczek (Chairperson), Dr. Huynh Trung Luong (Co-chairperson)

Launching Automotive Products in Vietnam: A Case Study of Technopro Japan Co., Ltd. in Ho Chi Minh City, Vietnam
By: Ms. Tran Thi Lan Anh
Supervisor: Dr. Clemens Bechter (Chairperson), Dr. Donyaprueth Krairit (Co-chairperson)

Strategic Orientation, Organization and Technology Improvement of Engineering Section of Joint Venture "Vietsovpetro"
By: Mr. Le Huu Toan
Supervisor: Prof. Marie-Therese Claes (Chairperson), Dr. Barbara Igel (Co-chairperson)

Technology Assessment in Construction Projects: A Case Study of HODECO, Vung Tau, Vietnam
By: Mr. Doan Huu Ha Vinh
Supervisor: Dr. Do Ba Khang (Chairperson), Dr. Yuosre Badir (Co-chairperson)

Enhancing Return on Investment from Sales Training Projects at DKSH Vietnam
By: Tran Cat Van
Supervisor: Dr. Do Ba Khang

(Chairperson), Dr. Yuosre Badir (Co-chairperson)

Marketing Strategy for Nippon Jordan Fertilizer Company in Vietnam
By: Mr. Vu Khac Thong
Supervisor: Dr. Clemens Bechter (Chairperson), Dr. Huynh Trung Luong (Co-chairperson)

Analyzing the Competitive Advantages for Vietnam's Cement Industry
By: Ms. Nguyen Le Kim Nhu
Supervisor: Dr. Winai Wongsurawat (Chairperson), Dr. Barbara Igel (Co-chairperson)

Training Practices at Viet Thai Electric Cable Corporation
By: Ms. Truong Thi Thu Huong
Supervisor: Dr. Do Ba Khang (Chairperson), Dr. Yuosre Badir (Co-chairperson)

Aligning Customer Service with Business Strategy: A Case of Nuplex Masterbatch Vietnam
By: Mr. Nguyen Khanh Ky
Supervisor: Dr. Winai Wongsurawat (Chairperson), Dr. Barbara Igel (Co-chairperson)

Improving Corporate Governance in Vietnam Electricity Group
By: Mr. Tran Vinh Thai
Supervisor: Dr. Fredric W. Swierczek (Chairperson), Dr. Huynh Trung Luong (Co-chairperson)

Change Management and Organization Strategy: A Case Study of VARD Vung Tau Ship Building
By: Mr. Nguyen Thanh Cao
Supervisor: Dr. Fredric W. Swierczek (Chairperson), Dr. Huynh Trung Luong (Co-chairperson)

The Relationship Between Working Climate, Motivation, and Performance in the Technical Department of PV Gas SE
By: Nguyen The Quang
Supervisor: Prof. Marie-Therese Claes (Chairperson), Dr. Barbara Igel (Co-chairperson)

Improving the Management of Towing Operations at Sea of VTB Division – Vietsovpetro
By: Mr. To Van Duc
Supervisor: Dr. Fredric W. Swierczek (Chairperson), Dr. Huynh Trung Luong (Co-chairperson)

Formulating Business Strategies for Ba Ria-Vung Tau Water Supply Joint-Stock Company for 2020
By: Mr. Nguyen Quoc Huy
Supervisor: Dr. Yuosre Badir

Formulating Strategies to Enhance the Competitiveness of Cinnamon Oil Producers in Yen Bai Province, Vietnam
By: Mr. Le Van Thang
Supervisor: Dr. Fredric W. Swierczek (Chairperson), Dr. Huynh Trung Luong (Co-chairperson)

Development Strategy for PetroVietnam Fertilizer Chemicals Corporation
By: Ms. Trinh Thi Kim Thoa
Supervisor: Dr. Fredric W. Swierczek (Chairperson), Dr. Huynh Trung Luong (Co-chairperson)

Developing EVN Culture in Power Transmission Company No 4
By: Mr. Vo Minh Khoa
Supervisor: Prof. Marie-Therese Claes (Chairperson), Dr. Barbara Igel (Co-chairperson)

Improving the Performance of the Finance Department of Vietnam Shoe Majesty Company Limited
By: Ms. Tran Thi Van Anh
Supervisor Dr. Fredric W. Swierczek (Chairperson), Dr. Huynh Trung Luong (Co-chairperson)

Changing Business Strategy in Southern Vietnam Helicopter Company and Diversifying Services for both Offshore and Onshore Markets
By: Mr. Tran Minh Tien
Supervisor: Dr.Winai Wongsurawat (Chairperson), Dr. Barbara Igel (Co-chairperson)

Improving the Inventory Management System: A Case of PetroVietnam Drilling and Well Services Corporation
By: Mr. Nguyen Van Thuong
Supervisor: Dr. Huynh Trung Luong

Developing a Competitive Strategy for a Fitness Center: The Case of the Body and Soul Gym
By: Ms. Bui Huyen Anh
Supervisor: Mr. Anas, Dr. Fredric W. Swierczek (Chairperson), Prof. Sununta Siengthai (Co-chairperson)

Developing a Customer Relationship Process for American Academy English Center in Vung Tau
By: Ms. Tran Mai Ngoc Chau
Supervisor: : Dr. Winai Wongsurawat (Chairperson), Dr. Barbara Igel (Co-chairperson)

Market Research and Setting Business Strategy for Masani Company Ltd. as Virtual Office in Vietnam
By: Ms. Nguyen Hoang Dung
Supervisor: Dr. Winai Wongsurawat (Chairperson), Dr. Barbara Igel (Co-chairperson)

The Development of the Vietnam Learning Center on Environment and Social Sustainability to 2020
By: Miss Nguyen Thi Bich Diep
Supervisor: Dr. Fredric W. Swierczek (Chairperson), Dr. Huynh Trung Luong (Co-chairperson)

Adoption of a Cost-Focused Business Level Strategy for Wood Furniture Manufacturing Enterprises: A Case Study of Danh Moc Limited Company
By: Miss Nguyen Thi Khanh Van
Supervisor: Dr. Yuosre Badir

Project Delay and its Impact on Business Opportunities: A Case Study of ScanCom International A/S
By: Mr. Nguyen Tuat Hap
Supervisor: Dr. Do Ba Khang (Chairperson), Dr. Huynh Trung Luong (Co-chairperson)

Factors Influencing Customers Purchase Intention Toward Motorcycle Oil Products in Ho Chi Minh City
By: Mr. Nguyen Duy Hung
Supervisor: Prof. Marie-Therese Claes

(Chairperson), Prof. Sununta Siengthai (Co-chairperson)

Understanding Employee Motivation: A Case of Petrovietnam Steel Pipe Joint Stock Company
By: Mr. Phi Duc Tinh
Supervisor: Dr. Winai Wongsurawat (Chairperson), Dr. Barbara Igel (Co-chairperson)

Applying Strategy Maps to the Development of Co.opmart Nha Be in Nha Be Province from 2016 to 2020
By: Mrs. Bui Thi Giang Thu
Supervisor: Dr.Winai Wongsurawat (Chairperson), Dr. Barbara Igel (Co-chairperson)

Strategic Planning and Implementation for the Research and Development Department from 2016 to 2020
By: Mr. Pham Truong Nam Tu
Supervisor: Dr.Winai Wongsurawat (Chairperson), Dr. Barbara Igel (Co-chairperson)

Factors Affecting Consumer Buying Behavior Towards Private Label Brand Products: A Case Study of Saigon Coop
By: Mr. Vo Hoang Anh
Supervisor: Dr. Clemens Bechter (Chairperson), Dr. Yuosre Badir (Co-chairperson)

Key Factors Affecting Performance of Purchasing Function in an Organization: A Case Study of Hoan My Medical Corporation in Vietnam
By: Mrs. Vu Lan Anh
Supervisor: Prof. Marie-Therese Claes (Chairperson), Prof. Sununta Siengthai (Co-chairperson)

Human Resource Management Strategies to Improve Performance in Tien Giang Social Insurance Organization
By: Miss Vo Thi Thuy Diem
Supervisor: Prof. Marie-Therese Claes (Chairperson), Prof. Sununta Siengthai (Co-chairperson)

How could Schindler Increase its Sales Volume for the Commodity Elevators Market Segment in the Vietnam?
By: Miss Dau Thi Hai Ha
Supervisor: Dr. Winai Wongsurawat (Chairperson), Dr. Barbara Igel (Co-chairperson)

Designing a Green Office Model for Business
By: Miss Dao Thanh Yen
Supervisor: Dr. Fredric W. Swierczek (Chairperson), Dr. Huynh Trung Luong (Co-chairperson)

Sales Management at an Institution of Higher Education: The Case of Hoasen University in Vietnam
By: Miss Bui Thi Van Quynh
Supervisor: Dr. Clemens Bechter (Chairperson), Dr. Yuosre Badir (Co-chairperson)

Market Research and Business Strategy Plan for Online Apparel Retailing Business: A Case Study of Lily Co. Ltd.
By: Miss Ngo Thi Kim Huong
Supervisor: Prof. Marie-Therese Claes (Chairperson), Dr. Vimolwan Yukongdi (Co-chairperson)

Sales Data Management by Web-Based Gamification Method: A Case of Schindler Vietnam Limited in Ho Chi Minh City, Vietnam
By: Mr. Nguyen Vu Duy
Supervisor: Prof. Marie-Therese Claes (Chairperson), Dr. Vimolwan Yukongdi (Co-chairperson)

Organizational Development and Change in the Context of the Upcoming Trans-Pacific Partnership Agreement: The Case of Long Uyen Co., Ltd.
By: Mr. Phan Quoc Vinh Hien
Supervisor: Dr.Winai Wongsurawat (Chairperson), Dr. Barbara Igel (Co-chairperson)

Improving Electricity Indicators to Enhance Vietnams Competitiveness
By: Mrs. Do Hoang Ha
Supervisor: Dr. Fredric W. Swierczek (Chairperson), Dr. Huynh Trung Luong (Co-chairperson)

Evaluating the Business Strategy of Petro Vietnam Power Corporation
By: Mr. Le Quang Hao
Supervisor: Dr. Fredric W. Swierczek (Chairperson), Prof. Sununta Siengthai (Co-chairperson)

Corporate Governance in State Owned Enterprises in Vietnam: A Case Study of TexDV
By: Mr. Nguyen Minh Khanh
Supervisor: Dr. Fredric W. Swierczek (Chairperson), Prof. Sununta Siengthai (Co-chairperson)

Social Media Applications in Luxury Hotels in Ho Chi Minh City
By: Mr. Hoang Le Phuong
Supervisor: Dr. Fredric W. Swierczek (Chairperson), Dr. Huynh Trung Luong (Co-chairperson)

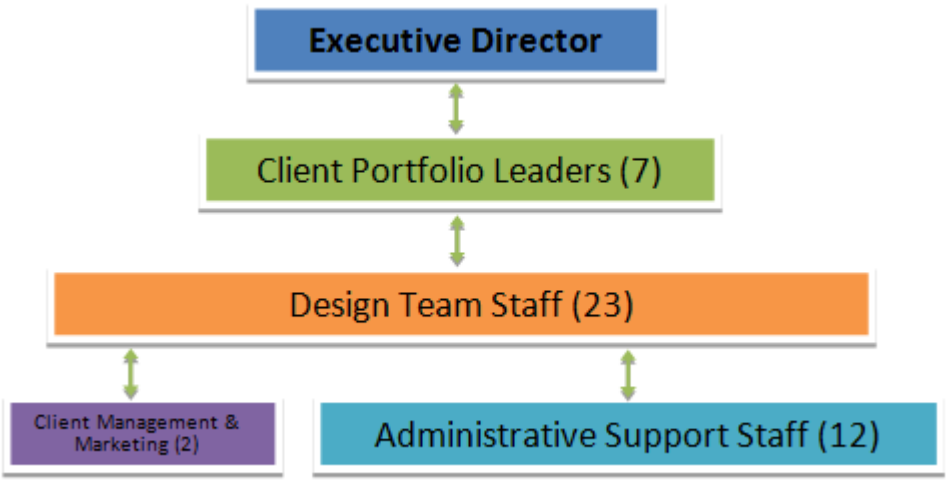
Improving the Project Management in Sustainable Urban Development Joint Stock Company
By: Miss Tran Thi Thu Huong
Supervisor: Dr. Fredric W. Swierczek (Chairperson), Prof. Sununta Siengthai (Co-chairperson)

Key Success Factors of Thai Retail Businesses in Vietnam: A Case of Metro Cash & Carry and Big C
By: Mrs. Trieu Thi Thuy Dung
Supervisor: Dr. Fredric W. Swierczek (Chairperson), Dr. Huynh Trung Luong (Co-chairperson)

Competitive Strategy for Trang a Confectionary Joint Stock Company in the Period 2017-2020
By: Mrs. Nguyen My Binh
Supervisor: Dr. Fredric W. Swierczek (Chairperson), Dr. Yuosre Badir (Co-chairperson)

Developing Marketing Strategy of Xuan Hoa Joint Stock Company
By: Miss Dao Phuong Dung
Supervisor: Dr. Fredric W. Swierczek (Chairperson), Prof. Sununta Siengthai (Co-chairperson)

Chapter 6: AIT EXTENSION



6.1 Introduction

AIT Extension's programs and services complement those of AIT's graduate degree programs, and contribute to AIT's mission by enabling a flexible, innovative, and client-oriented response to emerging and changing needs in the region.

AIT Extension is the Institute-wide center principally responsible for continuing professional and executive development, with a mission that complements that of the Schools. It specializes in customized capacity building and professional development services for practicing professionals, and has expertise in designing and implementing programs for diverse clients in many sectors. Expert resources include internal staff, AIT faculty members, and experts in relevant fields based in Thailand and the region. AIT Extension also provides support services and staff development programs to other units at AIT.

6.2 Mission

To design and deliver continuing, professional and executive education and other capacity development services required by our clients by drawing on the expertise of AIT faculty and experts in AIT's network.

6.3 Unit Governance

AIT Extension is led by an Executive Director. In collaboration with the AIT President, to whom he reports, the Executive Director is responsible for defining the strategic direction of AIT Extension, and executing its programs.

Senior colleagues each lead a client portfolio, and are responsible for client relationship management and leading program design teams that respond to clients' requirements. Program work is supported by an administrative and technical team, led by a Coordinator, and by a Client Management and Marketing team.

6.4 Services

AIT Extension provides a comprehensive range of professional development and capacity development services across a wide disciplinary range.

Continuing professional education

- Executive and leadership education
- Professional and skills training
- Professional degree programs
- Professional certification preparation
- International exposure visits

Assessments, and Monitoring & Evaluation

- Professional needs assessments
- Action research and case studies
- Evaluations and third party validations
- Impact assessments and tracer studies

Expert services

- Consulting & advisory
- Turnkey projects
- Partnerships and joint ventures

Learning facilitation

- Learning event management
- Internships and on the job placements
- E learning and distributed learning
- Curriculum design & learning materials
- Instructional design.

AIT Extension works across a broad range of sectors and disciplines. Broadly speaking, these are:

1. Engineering
2. Technology
3. Management
4. Environment
5. Agriculture
6. Planning
7. Development
8. Governance
9. Health
10. Banking & Finance
11. Education.

6.5 Learning Approach

Our teaching and learning approach is to apply best practices in training, based on established principles of adult learning.

AIT Extension training strategies are consistent with the principles of adult learning: peer learning, reflective thinking, problem based learning, participatory learning and experiential learning. We aim to maximize learning by mixing these approaches appropriate to each learning context.

Methods used include short presentations, group discussions, case studies, workshops, individual exercises, simulation, role plays, project work, peer learning and exposure visits. Training sessions are designed to allow participants the scope to interact with resource persons and actively engage in the learning process.

Participants benefit from close personal attention by AIT Extension staff. Our courses provide five to six hours of workshop sessions every weekday, with extensive social and cultural trips organized at the weekends in courses of two weeks or longer. IT relevant and appropriate to every group of participants are incorporated into the course design.

Feedback from participants in one course is a critical input to subsequent courses. All our training courses are undertaken with the aim of continuous quality improvement.

All AIT Extension activities take advantage of AIT's academic and social environment, and the Institute's multicultural English-speaking academic community.

6.6 Training Resources

AIT Extension's professional staff members are specialists in continuing professional education, assessments, and monitoring & evaluation, learning facilitation, and related disciplines.

AIT Extension academic and professional Resource Persons are drawn principally from AIT's schools, and from leading international and local organizations based in Thailand.

For specific technical expertise, AIT Extension enters into complementary partnerships with organizations and individuals with relevant technical expertise. For courses in third countries, AIT Extension works with country partners with relevant local knowledge.

Most courses are delivered in the AIT Hotel and Conference Center, which has hotel accommodation for almost 200 participants, an auditorium seating 300, and 10 training rooms for groups ranging in size from 10 to 50 participants. AIT's campus also has student dormitory accommodation, a medical clinic, an international cafeteria, several restaurants and sports facilities, including tennis and squash courts, football and cricket fields, a golf course and a swimming pool.

6.7 Grants and Sponsored Trainings Completed in 2016

Institutional Capacity Building for Public Works andTransport Training Center
Duration: 20-Jul-2015 to 31-Dec-2016
Project leader: Ms. Narumon Wangnai
Sponsor: GIZ_PTTC_Lao PDR
Total contracted amount:
(THB) 1,608,750.00

Professional Training Program on Contract and Procurement Management
Duration: 1-Feb-2016 to 12-Feb-2016
Project leader: Mr. Fazle Karim
Sponsor: Food and Agriculture Organization
Total contracted amount:
(THB) 1,026,419.00

Public Administration Reform, Good Governance and Citizen Centered Service Delivery (B.5)
Duration: 24-Jan-2016 to 02-Feb-2016
Project leader: Mr. Voravate Chonlasin
Sponsor: Ministry of Public Administration, Bangladesh
Total contracted amount:
(THB) 1,058,610.00

Project Planning & Management
Duration: 11-Dec-2016 to 17-Dec-2016
Project Investigator(s): Dr. Md. Zakir Hossain
Sponsor: Ministry of Commerce, Bangladesh
Total Contracted Amount
(THB): 246,750.00

Governance and Anti-Corruption Program in Singapore
Duration: 11-Dec-2016 to 18-Dec-2016
Project Investigator(s): Mr. Voravate Chonlasin
Sponsor: Commission for the Investigation of Abuse of Authority (CIAA), Nepal
Total Contracted Amount
(THB): 1,173,000.00

Improvement and Management of National Accounts Statistics
Duration: 12-Dec-2016 to 23-Dec-2016
Project Investigator(s): Dr. Pradeep Kumar Dash
Sponsor: Central Statistical Agency, Ethiopia
Total Contracted Amount
(THB): 644,825.00

Climate Change
Duration: 12-Dec-2016 to 22-Dec-2016
Project Investigator(s): Mr. Fazle Karim
Sponsor: International Agency for Agricultural Research and Development, Indonesia
Total Contracted Amount
(THB): 274,500.00

IT Application in ERP and Financial Analysis
Duration: 19-Dec-2016 to 23-Dec-2016
Project Investigator(s): Mr. Fazle Karim
Sponsor: Bangladesh Expert Processing Zone Authority
Total Contracted Amount
(THB): 522,000.00

Program Coordination and Administrative Support for Entura Hydro Tasmaia
Duration: 31-Oct-2016 to 04-Nov-2016
Project Investigator(s): Mr. Fazle Karim
Sponsor: Entura Hydro Tasmania

Total Contracted Amount
(THB): 274,144.00

The Highways and Bridge Design and Construction Technology
Duration: 07-Nov-2016 to 11-Nov-2016
Project Investigator(s): Mr. Fazle Karim
Sponsor: MSV International Inc.
Total Contracted Amount
(THB): 688,500.00

Management of Data Quality & Standardization
Duration: 13-Nov-2016 to 11-Nov-2016
Project Investigator(s): Dr. Pradeep Kumar Dash
Sponsor: Central Statistical Agency, Ethiopia
Total Contracted Amount
(THB): 550,228.00

Coastal Protection and Sustainable Management of Coastal Ecosystems (Batch III)
Duration: 04-Dec-2016 to 13-Dec-2016
Project Investigator(s): Dr. Md. Zakir Hossain
Sponsor: Global Environment Facilities (GEF)
Total Contracted Amount
(THB):1,041,000.00

Leadership for Public Utility Managers Batch II
Duration: 05-Dec-2016 to 16-Dec-2016
Project Investigator(s): Mr. Fazle Karim
Sponsor: Ceylon Electricity Board
Total Contracted Amount
(THB): 960,000.00

Public Administration Reform, Good Government and Citizen-centered Service Delivery
Duration: 11-Dec-2016 to 22-Dec-2016
Project Investigator(s): Mr. Voravate Chonlasin
Sponsor: Ministry of Public Administration
Total Contracted Amount
(THB): 1,261,500.00

Deep Water Field Development, Plan, Pipeline Design, Construction and Financial Analysis
Duration: 29-Aug-2016 to 09-Sep-2016
Project Investigator(s): Mr. Fazle Karim
Sponsor: Petrobangla
Total Contracted Amount
(THB): 1,249,500.00

Leadership for Public Utility Managers
Duration: 12-Sep-2016 to 23-Sep-2016
Project Investigator(s): Mr. Fazle Karim
Sponsor: Celong Electricity Board
Total Contracted Amount
(THB): 1,275,000.00

Bhutan Power Corporation Ltd.
Duration: 05-Sep-2016 to 12-Sep-2016
Project Investigator(s): Mr. Fazle Karim
Sponsor: Bhutan Power Corporation Ltd.
Total Contracted Amount
(THB): 734,401.00

Utilization of Solar Energy for Rural Water Supply and Small Scale Irrigation
Duration: 04-Sep-2016 to 15-Sep-2016
Project Investigator(s): Dr. Md. Zakir Hossain
Sponsor: Ministry of Water, Irrigation and Electricity, Ethiopia
Total Contracted Amount
(THB): 1,411,000.00

Innovative Irrigation Techniques
Duration: 19-Sep-2016 to 30-Sep-2016
Project Investigator(s): Mr. Fazle Karim
Sponsor The World Bank (WSIP)
Total Contracted Amount
(THB): 1,290,640.00

Inventory Management for Stores and Spares
Duration: 05-Sep-2016 to 12-Sep-2016
Project Investigator(s): Mr. Fazle Karim
Sponsor: Bhutan Power Corporation Ltd.
Total Contracted Amount
(THB): 734,401.00

Professional Training on Banking and Finance Batch 3
Duration: 01-Sep-2016 to 26-Dec-2016
Project Investigator(s): Dr. Sundar Venkatesh
Sponsor: Thriposha Co., Ltd., Ltd.Total Contracted Amount
(THB): 6,541,000.00

Accounting, Audit and Commercial Service of State-owned Water Supply Organization
Duration: 01-Oct-2016 to 22-Oct-2016
Project Investigator(s): Mr. Voravate Chonlasin
Sponsor: National Water Supply and Drainage Board, Sri Lanka
Contracted Amount
(THB): 600,000.00

Innovative Irrigation Management (Batch I)
Duration: 17-Oct-2016 to 28-Oct-2016
Project Investigator(s): Dr. Pradeep Kumar Dash
Sponsor: Ministry of Water Resources /ADB
Contracted Amount
(THB): 1,471,200.00

Exposure Visit Program for the Delegates from Eastern University, Sri Lanka
Duration: 03-Oct-2016 to 10-Oct-2016
Project Investigator(s): Mr. Fazle Karim
Sponsor: Eastern University, Sri Lanka
Contracted Amount
(THB): 774,900.00

Project Management, Monitoring and Evaluation
Duration: 17-Oct-2016 to 28-Oct-2016
Project Investigator(s): Mr. Fazle Karim
Sponsor: Multi-donor
Contracted Amount
(THB): 340,000.00

Poverty Mapping and Small Area Estimation
Duration: 02-Oct-2016 to 14-Oct-2016
Project Investigator(s): Dr. Pradeep Kumar Dash
Sponsor: Central Statistical Agency, Ethiopia
Contracted Amount
(THB): 850,000.00

Consultancy on Needs/GAPS Assess-ment
Duration: 01-Oct-2016 to 30-Nov-2016
Project Investigator(s): Dr. Faiz Shah
Sponsor: Entura Hydro Tasmania, Australia
Contracted Amount
(THB): 181,500.00

Innovative Irrigation Management
Duration: 04-Aug-2016 to 14-Aug-2016
Project Investigator(s): Dr. Pradeep Kumar Dash
Sponsor: Water Resources Project Preparatory Facility, Nepal

Contracted Amount
(THB): 687,500.00

Budgetting and Cost Control
Duration: 18-Jul-2016 to 25-Jul-2016
Project Investigator(s): Mr. Fazle Karim
Sponsor: Bhutan Power Corporation Limited
Contracted Amount
(THB): 775,200.00

Education Performance Monitoring and Evaluation
Duration: 08-Aug-2016 to 19-Aug-2016
Project Investigator(s): Ms. Narumon Wangnai
Sponsor: Ministry of Education & Sports, Lao PDR
Contracted Amount
(THB): 700,000.00

ESIA, CDM and MRV for Clean Energy Access and Services
Duration: 23-Jul-2016 to 08-Aug-2016
Project Investigator(s): Dr. Md. Zakir Hossain
Sponsor: Ministry of Water, Irrigation and Electricity, Ethiopia
Contracted Amount
(THB): 1,436,486.00

ESIA, CDM and MRV for Clean Energy Access and Services
Duration: 23-Jul-2016 to 08-Aug-2016
Project Investigator(s): Dr. Md. Zakir Hossain
Sponsor: Ministry of Water, Irrigation and Electricity, Ethiopia
Contracted Amount
(THB): 1,436,486.00

Vehicle Emission Testing and Management (Batch III)
Duration: 06-Jun-2016 to 10-Jun-2016
Project Investigator(s): Mr. Fazle Karim
Sponsor: Department of Motor Traffic, Sri Lanka
Contracted Amount
(THB): 485,000.00

Agro-food Processing Industries in Thailand
Duration: 07-Jun-2016 to 10-Jun-2016
Project Investigator(s): Dr. Md. Zakir Hossain
Sponsor: Ministry of Commerce, Bangladesh
Contracted Amount
(THB): 277,000.00

Governance and Anti-Corruption: The methods and Tools Behind an Effective Corruption-Eradication Strategy (Batch III)
Duration: 08-Jun-2016 to 14-Jun-2016
Project Investigator(s): Mr. Voravate Chonlasin
Sponsor: Commission for the Investigation of Abuse of Authority (CIAA), Nepal
Contracted Amount
(THB): 881,911.00

DoLIDAR's Rural Infrastructure and Livelihoods Project
Duration: 12-Jun-2016 to 29-Jun-2016
Project Investigator(s): Mr. Voravate Chonlasin
Sponsor: Department of Local Infrastructure Development and Agricultural Roads (DoLIDAR), Nepal
Contracted Amount
(THB): 2,733,600.00

International Professional Exposure Visit in Water Engineering and Management
Duration: 18-Jun-2016 to 28-Jun-2016
Project Investigator(s): Dr. Faiz Shah
Sponsor: Punjab Irrigation Department, Pakistan
Contracted Amount
(THB): 2,843,160.00

Corporate Innovation
Duration: 20-Jun-2016 to 01-Jun-2016
Project Investigator(s): Mr. Fazle Karim
Sponsor: Titas Gas Transmission & Distribution Co., Ltd., Bangladesh
Contracted Amount
(THB): 1,164,375.00

ICM for Sustainable Coastal Community and Ecosystems Services (Batch I)
Duration: 26-Jun-2016 to 05-Jul-2016
Project Investigator(s): Dr. Md. Zakir Hossain
Sponsor: Coastal Conservation & Coastal Resource Management Department (CC & CRMD), Sri Lanka
Contracted Amount
(THB): 1,158,000.00

Governance and Anti-Corruption: The Methods and Tools Behind an Effective Corruption-Eradication Strategy (Batch IV)
Duration: 26-Jun-2016 to 05-Jul-2016
Project Investigator(s): Mr. Voravate Chonlasin
Sponsor: Commission for the Investigation of Abuse of Authority (CIAA), Nepal
Contracted Amount
(THB): 881,911.00

Vehicle Emission Testing and Management (Batch IV)
Duration: 27-Jun-2016 to 01-Jul-2016
Project Investigator(s): Mr. Fazle Karim
Sponsor: Department of Motor Traffic, Sri Lanka
Contracted Amount
(THB): 500,000.00

International Exposure Program on MSMEs Financing in Asia
Duration: 22-Jun-2016 to 29-Jun-2016
Project Investigator(s): Dr. Faiz Shah
Sponsor: College of Agricultural Banking Reserve Bank of India
Contracted Amount
(THB): 1,356,260.00

Performance Management System Design for Academic Institutions
Duration: 04-Jul-2016 to 08-Jul-2016
Project Investigator(s): Dr. Faiz Shah
Sponsor: Royal University of Bhutan
Contracted Amount
(THB): 238,000.00

Aquaculture Development and Aquatic Resources Management in South and Southeast Asia
Duration: 10-Jul-2016 to 31-Jul-2016
Project Investigator(s): Dr. Md. Zakir Hossain
Sponsor: Shanghai Ocean University, PR of China
Contracted Amount
(THB): 1,750,000.00

Procurement Management
Duration: 16-Jul-2016 to 27-Jul-2016
Project Investigator(s): Dr. Pradeep Kumar Dash
Sponsor: Project for Agriculture Commercialization & Trade

Ministry of Agriculture Development, Nepal
Contracted Amount
(THB): 587,599.00

Pump Technology for Flood Control
Duration: 25-Aug-2016 to 31-Aug-2016
Project Investigator(s): Mr. Voravate Chonlasin
Sponsor: EBARA Hatakeyama Memorial, Japan
Contracted Amount
(THB): 416,500.00

Professional Development Program on Quality Assurance in Higher Education
Duration: 25-Apr-2016 to 06-May-2016
Project Investigator(s): Ms. Narumon Wangnai
Sponsor: University Grants Commission, Bangladesh
Contracted Amount
(THB): 1,342,800.00

Hydropower Financing
Duration: 01-May-2016 to 18-May-2016
Project Investigator(s): Dr. Faiz Shahf
Sponsor: Pakistan Water and Power Development Authority
Contracted Amount
(THB): 8,114,000.00

Governance and Anti-corruption: The Methods and Tools Behind and Effective Corruption Eradication Strategy
Duration: 02-May-2016 to 08-May-2016
Project Investigator(s): Mr. Voravate Chonlasin
Sponsor: Commission for Investigation of Abuse of Authority, Nepal
Contracted Amount
(THB): 630,450.00

Vehicle Emission Testing and Management (2nd Batch)
Duration: 15-May-2016 to 20-May-2016
Project Investigator(s): Mr. Fazle Karim
Sponsor: Department of Motor Traffic, Sri Lanka
Contracted Amount
(THB): 487,500.00

10th Policy Planning and Management
Duration: 16-May-2016 to 22-May-2016
Project Investigator(s): Mr. Voravate Chonlasin
Sponsor: Ministry of Public Administration, Bangladesh
Contracted Amount
(THB): 738,000.00

Training Workshop on Strategic Leadership: Essential Skills for Animal Health Policies in Actions
Duration: 14-Mar-2016 to 15-Mar-2016
Project Investigator(s): Mr. Voravate Chonlasin and Ms. Narumon Wangnai
Sponsor: Food and Agriculture Organization
Contracted Amount
(THB): 247,500.00

Professional Workshop on Project Finance
Duration: 14-Mar-2016 to 22-Mar-2016
Project Investigator(s): Dr. Faiz Shah
Sponsor: Bhutan National Bank
Contracted Amount
(THB): 367,200.00

Study Visit of Senior Officials of Ministry of Public Administration
Duration: 21-Mar-2016 to 27-Mar-2016
Project Investigator(s): Mr. Voravate Chonlasin
Sponsor: Ministry of Social Welfare, Bangladesh
Contracted Amount
(THB): 741,598.00

Investment Seminar
Duration: 21-Mar-2016 to 25-Mar-2016
Project Investigator(s): Mr. Fazle Karim
Sponsor: Bangladesh Export Processing Zone Authority (BEPZA), Bangladesh
Contracted Amount
(THB): 459,000.00

Professional Development Program on Management of Training Centers
Duration: 21-Mar-2016 to 06-Apr-2016
Project Investigator(s): Ms. Narumon Wangnai
Sponsor: Advertised
Contracted Amount
(THB): 489,100.00

Air and Water Quality Monitoring, Emission Testing and Climate Change
Duration: 27-Mar-2016 to 03-Apr-2016
Project Investigator(s): Dr. Md. Zakir Hossain
Sponsor: National Environment Commission, Bhutan
Contracted Amount
(THB): 496,946.00

Seminar Program on Unitization
Duration: 28-Mar-2016 to 30-Mar-2016
Project Investigator(s): Mr. Fazle Karim
Sponsor: PetroBangla, Bangladesh
Contracted Amount
(THB): 294,000.00

Engineering Design of Natural Gas Distribution Pipeline
Duration: 28-Mar-2016 to 08-Apr-2016
Project Investigator(s): Mr. Fazle Karim
Sponsor: Ministry of Economic Affairs, Bhutan
Contracted Amount
(THB): 1,338,750.00

Design of Dam Structure-HRT, Powerhouse, Hyromechanical and Electromechanical Components
Duration: 28-Mar-2016 to 10-Apr-2016
Project Investigator(s): Dr. Md. Zakir Hossain
Sponsor: Ministry of Economic Affairs, Bhutan
Contracted Amount
(THB): 612,500.00

Capacity Enhancement for Disability Affair Officer for Services to Persons with Disabilities
Duration: 17-Apr-2016 to 28-Apr-2016
Project Investigator(s): Mr. Voravate Chonlasin
Sponsor: Ministry of Social Welfare, Bangladesh
Contracted Amount
(THB): 1,237,000.00

Strategy Risks, Negotiation and Leadership
Duration: 18-Apr-2016 to 29-Apr-2016
Project Investigator(s): Dr. Faiz Shah
Sponsor: Gas Transmission Co., Ltd.
Contracted Amount
(THB): 1,428,000.00

Capacity Enhancement for Therapist Assistant for Service to Persons with Disabilities (Batch 3)
Duration: 14-Feb-2016 to 25-Feb-2016
Project Investigator(s): Mr. Voravate Chonlasin

Sponsor: Ministry of Social Welfare, Bangladesh
Contracted Amount
(THB): 1,562,500.00

Essential Technical and Management Skills
Duration: 22-Feb-2016 to 04-Mar-2016
Project Investigator(s): Mr. Fazle Karim
Sponsor: Titas Gas Transmission & Distribution Co., Ltd.
Contracted Amount
(THB): 1,102,500.00

Capacity Enhancement for Consultant (Physiotheraphy), Clinical Physiothe rapist, Speeach (Batch 1)
Duration: 06-Mar-2016 to 25-Mar-2016
Project Investigator(s): Mr. Voravate Chonlasin
Sponsor: Ministry of Social Welfare, Bangladesh
Contracted Amount
(THB): 2,333,600.00

Capacity Enhancement for Consultant (Physiotheraphy), Clinical Physiothe rapist, Speech (Batch 2)
Duration: 20-Mar-2016 to 08-Apr-2016
Project Investigator(s): Mr. Voravate Chonlasin
Sponsor: Ministry of Social Welfare, Bangladesh
Contracted Amount
(THB): 2,333,600.00

Contract and Procurement Management
Duration: 18-Jan-2016 to 29-Jan-2016
Project Investigator(s): Mr. Fazle Karim
Sponsor: Food and Agricultural Organization
Contracted Amount
(THB): 1,030,139.00

Vehicle Emission Testing and Management
Duration: 18-Jan-2016 to 23-Jan-2016
Project Investigator(s): Mr. Fazle Karim
Sponsor: Government of Sri Lanka
Contracted Amount
(THB): 887.500.00

Community Based Forest Management with REDD+
Duration: 19-Jan-2016 to 25-Jan-2016
Project Investigator(s): Dr. Md. Zakir Hossain
Sponsor: JICA-India
Contracted Amount
(THB): 443,766.00

Defense Policies, Governance, Administration and Management (Thailand & Malaysia)
Duration: 01-Feb-2016 to 12-Feb-2016
Project Investigator(s): Dr. Pradeep Kumar Dash
Sponsor: Government of India
Contracted Amount
(THB): 2,219,700.00

Public Administration Reform, Good Governance and Citizen-centered Service Delivery (Batch 6)
Duration: 01-Feb-2016 to 23-Feb-2016
Project Investigator(s): Mr. Voravate Chonlasin
Sponsor: Ministry of Public Administration, Bangladesh
Contracted Amount
(THB): 1,500,400.00

Flow Management
Duration: 01-May-2016 to 10-Nov-2016
Project Investigator(s): Mr. Fazle Karim
Sponsor: Government of Sindh, Pakistan
Contracted Amount
(THB): 2,101,740.00

Financial Analysis, Planning, Modelling & Forecasting
Duration: 16-May-2016 to 23-Nov-2016
Project Investigator(s): Mr. Voravate Chonlasin
Sponsor: Government of Sindh, Pakistan
Contracted Amount
(THB 918,000.00

Professional Training Program on Human Resource Management
Duration: 16-May-2016 to 23-Nov-2016
Project Investigator(s): Mr. Fazle Karim
Sponsor: Dhaka Electricity Supply Co., Ltd., Bangladesh
Contracted Amount
(THB 1,148,000.00

Professional Development Course on E-Learning and ICT for Health Education Management
Duration: 23-May-2016 to 30-Nov-2016
Project Investigator(s): Ms. Narumon Wangnai
Sponsor: Ministry of Health, Sri Lanka
Contracted Amount
(THB 700,000.00

Government and Anti-corruption for an Effective Corruption-Eradication Batch 2
Duration: 23-May-2016 to 26-Nov-2016
Project Investigator(s): Mr. Voravate Chonlasin
Sponsor: Commission for Investigation of Abuse of Authority, Nepal
Contracted Amount
(THB 560,063.00

Executive Master in Development Policies and Practices/DPP
Duration: 29-May-2016 to 13-Jun-2016
Project Investigator(s): Dr. Jonathan Shaw
Sponsor: Graduate Institute Geneva, Switzerland
Contracted Amount
(THB 1,037,205.00

Water Legislation in Thailand
Duration: 29-May-2016 to 05-Jun-2016
Project Investigator(s): Dr. Md. Zakir Hossain
Sponsor: Water Resources Planning Organization (WARPO), Bangladesh
Contracted Amount
(THB 555,379.00

Integrated Water Resources Management
Duration: 30-May-2016 to 11-Jun-2016
Project Investigator(s): Dr. Md. Zakir Hossain
Sponsor: Government of Sindh, Pakistan
Contracted Amount
(THB) 896,000.00

Construction Planning and Quality Management of Construction Projects
Duration: 11-Jun-2016 to 22-Jun-2016
Project Investigator(s): Mr. Voravate Chonlasin
Sponsor: Construction Development Corporation, Bhutan
Contracted Amount
(THB) 935,000.00

6.8 On-going Grant and Sponsored Trainings

Sehat Mobile Master Training
Duration: 11-Dec-2016 to 17-Dec-2017
Project Investigator(s): Dr. Faiz Shah
Sponsor: SE_BSP, Pakistan
Total Contracted Amount
(THB): 895,250.00

Application of GIS Multi-users Geo-Database and Web-GIS
Duration: 09-Jan-2017 to 20-Jun-2017
Project Investigator(s): Government of Sindh, Pakistan
Sponsor: Central Statistical Agency, EthiopiaTotal Contracted Amount
(THB): 611,000.00

Entura Hydro Tasmania
Duration: 09-Jan-2017 to 27-Jun-2017
Project Investigator(s): Dr. Faiz Shah
Sponsor: Entura Hydro Tasmania
Total Contracted Amount
(THB): 1,296,400.00

Consultancy Projects: Strategic Plan for University of Health Sciences
Duration: 20-Apr-2016 to 29-Mar-2017
Project Investigator(s): Mr. Voravate Chonlasin
Sponsor: University of Health Sciences
Contracted Amount
(THB): 595,000.00

Professional Masters in Banking and Finance Jan 2016
Duration: 01-Apr-2016 to 30-Dec-2018
Project Investigator(s): Dr Jonathan Shaw
Sponsor: Bangladesh Bank & other Banks
Contracted Amount
(THB): 10,048,000.00

Innovative Irrigation Management (Batch II)
Duration: 16-Jan-2017 to 27-Jun-2017
Project Investigator(s): Dr. Pradeep Kumar Dash
Sponsor: PMU, IMIP, BWDB, Ministry of Water Resources/ADB
Total Contracted Amount
(THB): 1,148,400.00

Capacity Building Project for Ministry of Energy and Mines, Lao PDR
Duration: 01-Oct-2016 to 27-Nov-2017
Project Investigator(s): Mr. Voravate Chonlasin
Sponsor: Ministry of Energy and Mines, Lao PDR
Total Contracted Amount
(THB): 3,045,000.00

Banking Management
Duration: 10-Oct-2016 to 10-Oct-2017
Project Investigator(s): Afzal Jamil
Sponsor: Bank of Bhutan
Total Contracted Amount
(THB): 765,200.00

Bank Fraud Management for Internal Auditors
Duration: 17-Oct-2016 to 16-Oct-2017
Project Investigator(s): Dr. Faiz Shah
Sponsor: Bhutan National Bank
Total Contracted Amount
(THB): 280,000.00

Exposure Visit Program II for the Faculties from Eastern University, Sri Lanka
Duration: 14-Nov-2016 to 31-Jul-2017
Project Investigator(s): Mr. Fazle Karim
Sponsor: Eastern University, Sri Lanka
Total Contracted Amount
(THB): 858,975.00

Study Visit Program: 11th Policy Planning & Management Course
Duration: 20-Nov-2016 to 25-May-2017
Project Investigator(s): Mr. Voravate Chonlasin
Sponsor: Ministry of Public Administration, Bangladesh
Total Contracted Amount
(THB): 738,000.00

Chapter 7: INTERNET EDUCATION AND RESEARCH LABORATORY (intERLab)

7.1 Introduction

Continual expansion of the Internet is creating greater demand for well-trained human resources to support the infrastructures and applications of the Internet. New computer science and engineering solutions are needed to simply handle the exponential growth in the traffic and bandwidth usage which is putting severe strain on the Internet today. There is urgent need for a new breed of engineers and technologists to respond to the growing demand from this rapid expansion with endless range of new applications.

As the Internet continues to penetrate every corner of society and of the economy, there are other non-technical issues to be addressed along with the advancement of technological progress. There is a definite need for better understanding of the Internet's social, business, economic as well as legal implications in order to promote the standards of behaviour and practices for the community that are appropriate to continued growth and beneficial use of the Internet.

The intERLab was established in December 2003 as a fixed regional center for Internet infrastructure capacity building, where AIT based on its human and institutional networks, could play a very significant role for the region. Many Internet organizations such as Network Startup Resource Center (NSRC) funded by NSF, the Asia-Pacific Network Information Centre (APNIC) and the Asia-Pacific Advanced Network (APAN) as well as many Internet business organizations provided strong support for the intERLab establishment.

The concept of establishing a fixed location for the internet human resources development has been discussed and endorsed by leading Asia-Pacific Internet organizations at their AP* Retreat meeting at AIT in year 2000. Several leading research institutions in Asia-Pacific, Europe and the US have indicated their interests in forming up a network of support for the intERLab research, training and education. The main idea is to work together with partners on training and workshops in order to produce network engineers for the stable deployment of the Internet. It was also encouraged that the intERLab develops its own expertise by doing its own research and eventually become one of the leading Internet research centers in the region.

The core component of the laboratory will be on research activities. This will be achieved by maintaining excellent research facilities and staff, hosting visiting researchers and taking advantage of linkages with research laboratories worldwide. The lab was built upon pre-existing Internetworking Research Laboratory of the School of Advanced Technologies and the Distributed Education Center.

7.2 Mission

To become one of the leading Internet regional centers of excellence; establishing intERLab/AIT name, as one of the leading Internet infra-structure HRD centers in the Asia-Pacific region; launching our research products at the regional and international level; and developing a regular degree program under SET.

7.3 Unit Governance

PROF. KANCHANA KANCHANASUT

IntERLab Director

7.4 Resources

Education

Distance Education and E-Education Platform VClass

VClass open source consortium

VClass trainings for AIT faculty and staff

VClass hosting service and technical support

ASEAN Virtual Institute of Science and Technology (AVIST) hosting

Custom courseware development;

E-learning consultancy;

Instructional design consultancy;

Custom course design

CanalAVIST streaming VDO over Trans-Eurasia Information Network (TEIN)

Research

Streaming Technology on the Internet

DVRelay for streaming high quality Video (DV format) over heterogeneous network

Overlay network for streaming content delivery

Computer Network Research

Wireless Internet as information infrastructure for rural Asia

Digital Ubiquitous Mobile Broadband OLSR emergency network project

Multimedia communication over heterogeneous network

Training and Internet Information Center

Trainings for Network Infrastructure Engineers (7~8 courses per year)

Human Resource Development for Trans-Eurasia Information Network

Secretariats for AP* Retreat and Asia Pacific Networking Group (APNG) organizations

7.5 Faculty and Research Staff

Faculty

KANCHANA KANCHANASUT, M.Sc and Ph. D. Computer Science, University of Melbourne, Australia. Graduate Diploma in Computer Science, University of Queensland, Australia. B. Sc. Mathematics, University of Queens-land, Australia.

Professor of Computer Science, School of Engineering and Technology and Director of intERLab. [Internet for education; Heterogeneous Networks; Emergency Networks; Mobile Ad Hoc Networks; Streaming Media and Distributed Computing]

Affiliates

MONGKOL EKPANYAPONG, Ph.D., Georgia Institute of Technology. M.Eng., Asian Institute of Technology, Thailand. B.Eng., Chulalongkorn University, Thailand.

Assistant Professor School of Engineering and Technology [VLSI design, physical design automation, micro architecture, compiler, and Embedded Systems]

POOMPAT SAENGUDOMLERT, Ph.D. in Electrical Engineering and Computer Science, MIT, USA M.S. in Electrical Engineering and Computer Science, MIT, USA B.S.E. in Electrical Engineering, Princeton University, USA

Associate Professor School of Engineering and Technology [Areas of Communication Theory; Optical networks; Resource Allocation Problems and Array Processing]

TEERAPAT SANGUANKOTCHAKO-RN, D.Eng in Information Processing, Tokyo Institute of Technology, Japan. M.Eng in Information Processing, Tokyo Institute of Technology, Japan. Certificate in Japanese Language, Osaka University of Foreign Study, Japan. B.Eng. in Electrical Engineering, Chulalongkorn University, Thailand.

Associate Professor School of Engineering and Technology [Digital Signal Processing; Routing Algorithm in the network such as IP and MPLS network; High Speed network and IP-based multimedia applications]

NGUYEN THI KIM OANH, Ph.D., Asian Institute of Technology. M.Eng., Asian Institute of Technology, Thailand. Dipl. Eng. Meteorology, Odessa Hydrometeorology Institute.

Professor School of Environment, Research and Development Environmental Engineering and Management Program [Air pollution, Atmospheric science, Environmental monitoring and modeling, Short-lived climate forcing pollutants, Industrial environment management]

Adjunct Researchers

TANACHAI KONGPOOL, Bachelor's Degree of Computer Science, KMUTNB King Mongkut's University of Technology North Bangkok

Assistant Researcher National Electro-nics and Computer Technology Center (NECTEC) [Network management; Network engineering; Ad hoc Network]

AIMASCHANA NIRUNTASUKRAT, Ph.D. in Electrical Engineering, University of Maryland (College Park), Master of Engineering in Electrical Engineering, Chulalongkorn University, Bachelor of Engineering (with honors) in Electrical Engineering, Chulalongkorn University

Researcher National Electronics and Computer Technology Center (NEC-TEC) [Network congestion control; Network performance modeling; Application of AI; Biomedical signal processing]

PANITA PONGPAIBOON, Ph.D. in Electrical and Computer Engineering, Carnegie Mellon University Master of Science in Electrical Engineering, Stanford University Bachelor of Science (with University Distinction) in Electrical Engineering, Stanford University

Researcher National Electronics and Computer Technology Center (NECTEC) [Optical network management; IP-overoptical networking; Survivable and fault-tolerant networks; Network measurement; Traffic classification; IPv6; Mobile IP and Intelligent transport system]

ONNO W. PURBO, Ph.D., University of Waterloo, Canada. M.Eng., McMaster University, Canada.

Retired Lecturer from Institute of Technology Bandung (ITB) & Retired Indonesian Civil Servant. He is an Eisenhower Fellow & Ashoka Senior Fellow. In the last 20 years, dedicate his time to educate Indonesians on Information technology, open source , Internet Telephony & Low Cost "Wireless" Internet Access. He has published 40+ books & thousands of articles in IT. He is active in 170+ mailing lists and moderate 10+ mailing lists. His vision is "To See Knowledge Based Society in Indonesia"

THIRAPON WONGSAARDSAKUL, D.Tech.Sc. in Computer Science, Asian Institute of Technology Master of Science in Telecommunications and Computers, George Washington Univer-sity Bachelor of Engineering in Computer Engineering, Kasetsart University Associate Dean, School of Science and Technology, Bangkok University [Voice over IP; Mobile Ad Hoc Network; Peer to Peer; Distributed Hash Table; Intelligent transport system]

WILAWAN RUKPAKAVONG Ph.D. in Computer Science, Loughborough University Master of Computer Networks, University of Derby, Asian Institute of Technology, Bachelor of

Science (Computer Science Thammasat University.

Assistant Professor Department of Computer Science Thammasat University [Programming Languages, Operating Systems, Computer Security, Net-centric Computing, Compiler Construction]

Research Staff

PREECHAI MEKBUNGWAN, Master of Engineering in Information and Communications Technologies (ICT), Asian Institute of Technology, Thailand. Bachelor of Engineering in Computer Engineering, Kasetsart University, Bangkok, Thailand.

Research Associate [Mobile Ad Hoc Network, Delay Tolerant Networking]

NUNTHAPAT WESHSUWANNARUGS, Master of Science in Information and Communications Technologies, Asian Institute of Technology, Thailand. Bachelor of Science in Computer Science, Payap University, Chiang Mai

Research Associate [Mobile ad hoc networking; Vehicular ad hoc networking; Disaster emergency networking]

APINUN TUNPAN, Ph.D. and M.S. in Computer Science, University of Maryland College Park, USA. B.Eng. in Computer Engineering, Chulalongkorn University, Thailand.

Senior Research Specialist [Mobile ad hoc networking; Vehicular ad hoc networking; Robotic ad hoc networking; Disruption tolerant networking; Disaster emergency networking; Intelligent transportation system; Network Coding; Information retrieval; Multimedia databases]

ADISORN LERTSINSRUBTAVEE, Ph.D. in Computer Science, UPMC Sorbonne Universities, France; M.Sc. in Communication Networks and Services Telecom and Management SudParis (INT), France; M.Eng. in Information and Communication Technology, Asian Institute of Technology; BBA in General Management, Sukhothai Thammathirat University; B.Eng. in Telecommunication Engineering, King Mongkut's Institute of Technology Ladkrabang

Research Specialist-Post Doc [Mobile ad hoc networking; Vehicular ad hoc networking; Robotic ad hoc networking; Disruption tolerant networking; Disaster emergency networking; Intelligent transportation system; Network Coding; Information retrieval; Multimedia databases]

7.6 Grants and Sponsored Research Completed in 2016

IntERLab Trainings 2016

Bangkok internet exchange 2016
Duration: 01-Jan-2016 to 31-Dec-2016
Project Investigators: Prof Kanchana Kanchanasut
Sponsor: THNIC foundation
Total Contracted Amount
(THB): 2,000,000.00

AIT internal development and maintenance
Duration: 01-Jun-2015 to 31-Dec-2015
Project Investigators: Viraphan Samadi
Sponsor: AIT
Total Contracted Amount
(THB): 1,500,000.00

DUMBO VI
Duration: 01-Jan-2016 to 31-Dec-2016
Project Investigators: Prof Kanchana Kanchanasut
Sponsor: THNIC foundation/NECTEC
Total Contracted Amount
(THB): 2,500,000.00

interlab IT service 2016
Duration: 01-Jan-2016 to 31-Dec-2016
Project Investigators: Mr Viraphan Samadi
Sponsor: AIT
Total Contracted Amount
(THB): 7,306,200.00

AIT internal development and maintenance 2016
Duration: 01-Jan-2016 to 31-Dec-2016
Project Investigators: Mr Viraphan Samadi
Sponsor: AIT
Total Contracted Amount

Asian internet engineering conference 2016
Duration: 01-Jan-2016 to 31-Dec-2016
Project Investigators: Prof Kanchana Kanchanasut
Sponsor: Researcher/ engineers interested in internet technology
Total Contracted Amount
(THB): 700,000.00

Interlab training 2016
Duration: 01-Jan-2016 to 31-Dec-2016
Project Investigators: Viraphan Samadi
Sponsor TEIN4 Engineers, Network engineers
Total Contracted Amount
(THB): 1,000,000.00

InterLab Trainings 2016
Duration: 01-Jan-2016 to 31-Dec-2016
Project Investigators: Viraphan Samadi
Sponsor: Multi Donors
Total Contracted Amount
(THB): 1,000,000.00

Asian Internet Engineering Conference 2016
Duration: 01-Jan-2016 to 31-Dec-2016
Project Investigators: Prof Kanchana Kanchanasut
Sponsor: Multi Donors
Total Contracted Amount
(THB): 700,000.00

7.7 On-going Grants and Sponsored Research

IT Infrastructure Consultancy
Duration: 16-Jan-2017 to 31-Dec-2017
Project Investigator(s): Prof Kanchana Kanchanasut
Sponsor: THNIC Foundation
Total Contracted Amount
(THB): 2,000,000.00

IntERLab Trainings 2017
Duration: 16-Jan-2017 to 31-Dec-2017
Project Investigator(s): Viraphan Samadi
Sponsor: Multi Donors

Total Contracted Amount
(THB): 1,000,000.00

Dumbo VII
Duration: 16-Jan-2017 to 31-Dec-2017
Project Investigator(s): Prof. Kanchana Kanchanasut
Sponsor: THNIC Foundation/NECTEC
Total Contracted Amount
(THB): 2,000,000.00

AIT IDM 2017
Duration: 16-Jan-2017 to 31-Dec-2017
Project Investigator(s): Viraphan Samadi
Sponsor: Multi Donor
Total Contracted Amount
(THB): 2,000,000.00

InterLab IT services 2017
Duration: 16-Jan-2017 to 31-Dec-2017
Project Investigator(s): Viraphan Samadi
Sponsor: Multi Donor
Total Contracted Amount
(THB): 7,506,200.00

Low-cost Real-time Monitoring of Haze Air Quality Disasters in Rural Communities in Thailand and Southeast Asia
Duration: 01-Jan-2016 to 31-Dec-2017
Project Investigators: Dr. Mongkol Ekpanyapong
Sponsor: STIC-ASIE
Total Contracted Amount
(THB): 1,398,540.00

Chapter 8: INSTITUTE-WIDE SPONSORED AND CONTRACTED PROJECTS

8.1 Grants and Sponsored Research Completed in 2016

Renewable energy technologies for integrated community farming system
Duration: 01-Apr-2015 to 31-Mar-2016
Project Investigators: Prof S Kumar, Dr Kyoto Kusakabe, Dr Avishek Datta
Sponsor: Wisions of sustainability
Total Contracted Amount
(THB): 455,000.00

JAXA-Capacity Building 2015-2016
Duration: 01-Sep-2015 to 31-Dec-2016
Project Investigators: Dr Lal Samarakoon
Sponsor: Japan aerospace Exploration Company
Total Contracted Amount
(THB): 5,714,285.00

Food waste and loss at AIT
Duration: 01-Jul-2015 to 30-Jun-2016
Project Investigators: Dr Prabhat Kumar, Dr. Abha Mishra, Dr Anil k Anal and Avishek Datta
Sponsor: FAO
Total Contracted Amount
(THB): 990,000.00

Emerging Pests and Diseases of Cassava in Southeast asia: seeking eco-friendly solutions to overcome a threat to livelihood and industries
Duration: 02-Sep-2014 to 01-Sep-2016
Project Investigators: Dr Prabhat Kumar
Sponsor: International Centre for Tropical agriculture (CIAT)
Total Contracted Amount
(THB): 1,338,876.00

International Symposium on Sustainable Future in Asia
Duration: 1-Jan-2016 to 31-Jul-2016
Project Investigator(s): Mr Osamu Mizuno
Sponsor: The National Institute for Environmental Studies, Japan
Total Contracted Amount
(THB): 1,432,800.00

8.2 On-going Grants and Sponsored Research

Applying space based technology and information and communication technolgy to strengthen disaster resilience
Duration: 01-Oct-2015 to 30-Oct-2018
Project Investigators: Dr Manzul K Hazarika
Sponsor: ADB
Total Contracted Amount
(THB): 38,327,520.00

Sustaining and Enhancing the Momentum for Innovation and earning Around System of Rice Intensification (SRI) in the Lower Mekong River Basin
Duration: 01-Jan-2013 to 31-Jan-2018
Project Investigators: Dr. Abha Mishra
Sponsor: The European Union represnetd by European Commission
Total Contracted Amount
(THB): 112,703,266.00

Disaster risk assessment at Uttarakhand
Duration: 01-Jun-2016 to 31-Dec-2018
Project Investigator(s): Dr Manzul Hazarika
Sponsor: World Bank
Total Contracted Amount
(THB): 7,650,000.00

GIS and Remote sensing Capacity Building and development of Web based systems
Duration: 1-Jal-2016 to 31-Dec-2017
Project Investigator(s): Dr Lal Samarakoon
Sponsor: UNESCAP Thailand
Total Contracted Amount
(THB): 3,258,400.00

Low Cost Real time Monitoring of Haze Air Quality Disasters in Rural Communities in Thailand and Southeast Asia
Duration: 1-Jan-2016 to 31-Dec-2017
Project Investigator(s): Dr Mongkol Ekpanyapong & Prof Nguyen Thi Kim Oanh
Sponsor: MOFAID
Total Contracted Amount
(THB): 1,398,540.00

National Adaptation Planning in the Asia Pacific
Duration: 1-Jan-2015 to 31-Dec-2018
Project Investigator(s): Osamu Mizono
Sponsor: MoE Government of Japan
Total Contracted Amount
(THB): 15,109,245.00

Low Carbon Technology Assessment
Duration: 01-Jun-2016 to 31-Dec-2018
Project Investigator(s): Dr Mara Regina Mendes
Sponsor: The Institute for Global Environmental Strategies (IGES)
Total Contracted Amount
(THB): 17,056,596.00

Chapter 9: OVERVIEW OF RESEARCH ACTIVITIES FOR 2016

345 sponsored and contracted projects were carried out by the faculty and staff of the three schools, researchers and staff of AIT Extension, IntERLab, and Institute wide projects in 2016. The total publications including journals, conferences and book/book chapters were 374. The breakdown of these above two data according to the fields of study/schools/centers is given in table 9.1.

SCHOOL/FoS	SPONSORED & CONTRACTED PROJECTS		TOTAL PROJECTS	PUBLICATIONS			TOTAL PUBLICATIONS
	Completed	*On-going*		*Refereed Journals*	*Conference Proceedings*	*Refereed Books/ Chapters /others*	
SET	**38**	**32**	**70**	**77**	**45**	**14**	**136**
CS/IM	2		**2**	9	8		**17**
CEIM	2	4	**6**	4	5		**9**
GTE		1	**1**	2	4		**6**
IME	4	2	**6**	14	8	2	**24**
Mech/MES	7	7	**14**	7		1	**8**
Nano	1	1	**2**				**0**
RSGIS	15	6	**21**	9	1		**10**
StE	1		**1**	8	3		**11**
TC				1	3		**4**
TrE	1	5	**6**	2	2		**4**
WEM	5	6	**11**	21	11	11	**43**
OTM							**0**
SERD	**81**	**50**	**131**	**127**	**64**	**26**	**217**
ASE	4	3	**7**	16	2		**18**
AARM	5	8	**13**	4	8	5	**17**
E	21	12	**33**	21	23	5	**49**
EEM	20	9	**29**	11	22	3	**36**
FEBT	7	2	**9**	10	2	1	**13**
GDS	12	6	**18**	10		1	**11**
NRM	4	2	**6**	21	4	5	**30**
PPT			**0**				**0**
RRDP	2	1	**3**	16		3	**19**
UEM	5	5	**10**	6		1	**7**
ABM	1	1	**2**	6	3	2	**11**
DPMM		1	**1**	6			**6**
SOM	**12**	**14**	**26**	**14**	**5**	**2**	**21**
intERLab	**9**	**6**	**15**				**0**
AIT Ext	**80**	**11**	**91**				**0**
Inst-wide	**5**	**7**	**12**				**0**
TOTAL	**225**	**120**	**345**	**218**	**114**	**42**	**374**

Table 9.1: Summary of Projects and Publications 2016

The AIT students' research outputs are in form of doctoral dissertation, master's thesis/research study/project and undergraduate capstone projects. The total outputs of each of the above according to the fields of study are summarized in the table 9.2. Sixty-nine doctoral dissertations, 556 master's outputs and 138 capstone projects were published in 2016.

SCHOOL/FoS	DOCTORAL STUDENTS DISSERTATION	MASTERS STUDENTS RESEARCH			TOTAL MASTERS STUDENTS RESEARCH	UG STUDENTS CAPSTONE PROJECT	TOTAL
		Thesis	*Research Studies*	*Projects*			
SET	**21**	**165**	**32**	**46**	**264**	**127**	**391**
CEIM	**2**	31		40	**73**		
CS		4	9		**13**		
GTE	**2**	11	4		**17**		
ICT		2	3		**5**		
IM	**1**	1	5		**7**		
IME		11		6	**17**		
ME	**3**	7			**10**		
MES	**2**	1			**3**		
NT		1			**1**		
OTM		7			**7**		
RSGIS	**4**	27	1		**32**		
STE	**4**	13			**17**		
TC		3	9				
TE		13	1		**14**		
WEM	**3**	33			**36**		
SERD	**29**	**123**	**13**	**7**	**172**	**11**	**183**
AARM	**1**	1			**2**		
ABM		5			**5**		
ASE	**1**	4			**5**		
CCSD		3			**3**		
E	**5**	14	2		**21**		
PPT	**1**				**1**		
EEM	**5**	41	10		**56**		
FBT	**2**	12			**14**		
GDS	**3**	9	1		**13**		
NRM	**5**	12			**17**		
RRDP	**4**	14			**18**		
UEM	**2**	8			**10**		
UM				7	**7**		
SOM	**18**	**0**	**11**	**82**	**111**	**0**	**111**
BA			11	6	17		
BF				16	16		
IB	1				1		
EMBA(V)				60	60		
MOT	1				1		
DBA	5				5		
SM-PHD	11				11		
SET&SERD	**1**	**5**	**0**	**0**	**6**	**0**	**6**
DPMM	1	4			5		
UWEM		1			1		
SERD&SOM	**0**	**0**	**3**	**0**	**3**	**0**	**3**
EBM			3		3		
TOTAL	**69**	**293**	**59**	**135**	**556**	**138**	**694**

Table 9.2: Summary of Student Research 2016