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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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.](image)

2.2 Trend of the Ongoing Projects by Category

Sponsored and contracted projects undertaken at AIT 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.

![Figure 2.2: Budget Value terms 2008-2016](image)

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 2.3: Numbers of Ongoing projects](image)
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.

<table>
<thead>
<tr>
<th>Faculty Name</th>
<th>No of Projects as PI</th>
<th>PI and Co PI</th>
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<tr>
<td>Prof Kanchana Kanchanasut</td>
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<td>66</td>
</tr>
<tr>
<td>Prof S. Kumar</td>
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<td>Prof C. Visvanathan</td>
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<td>Dr Kunnawee Kanitpong</td>
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<td>34</td>
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<tr>
<td>Dr Kyoko Kusakabe</td>
<td>20</td>
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Table 2.1: Top 5 Researchers with the Highest Number of Projects initiated 2006-2016

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.
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)

![Prof. M. S. Babel](image1.jpg)

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

![Dr. Mongkol Ekpanyapong](image2.jpg)
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; addressing 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.aiai/.

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:

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


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.

IFIC Information Center

IFIC Information Center 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/

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/

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

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/
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 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

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., Parahyanan 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


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 Nay Pyi Taw Myanmar, Oct 2015**
Duration: 26-10-15 to 31-08-17
Project Investigators: Dr Hadikusumo
Sponsor: Construction Corporation in 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**


**Papers in Conference Proceedings**


**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 Thi 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. Merenengehe James Lalitha 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. Veeris etty 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. Dandum 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-Rise Residential Buildings: A Case Study in Hyderabad, India
By: Mr. Bodla Nikhil Kumar
Supervisor: Dr. Bonaventura H.W.
Hadikusumo

By: Mr. Sana Rajasekhar Rayudu
Supervisor: Dr. Djoen San Santoso

Integrating Vulnerability Management in Assessing Risks for Operation and Maintenance of Road Infrastructure
By: Mr. Nadapania 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: 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 Turlapatli
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. Nghiêm 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

By: Mr. Nguyễn Văn Đại
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. Phan Van Nghia
Supervisor: Dr. Bonaventura H.W.
Hadikusumo
By: Mr. Ho Xuan Hien  
Supervisor: Dr. Bonaventura H.W. Hadikusumo  
Effectiveness of Project Investment: A Case Study of the Dinh Vu Polyester 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 Road 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 Geosynthetic 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, Geo-exploration & 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, piezocene 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, stereosketch 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 research 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 Geoengineering (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 technology, 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 Geoengineering)


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### 5. On-going Grants and Sponsored Research
6. Publications

Papers in Refereed Journal


Papers in Conference Proceedings


7. Doctoral Students’ Theses

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

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. Najha 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-nej
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 prestressed 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 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., Northwestern 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]

PENNING 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 Programming; 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 Engineering 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]

RAKITPONG 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]

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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]

KUITPOOM 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]


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

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]

KUITPOOM 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]


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

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

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

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

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KUITPOOM 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 [AdvancedConcrete Structures; Tall Buildings; Structural Analysis and Design; Computational Mechanics; Computer Application; Bridge Engineering; Software Development]
8. Masters Students’ Theses

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

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 Rathnayake
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 Thaiboontree
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
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)


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

Srivaran 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 Health Sciences University, Nepal

Research Associate

Anuwarnee 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

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


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 Pravinvonvuth
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 Pravinvonvuth
Sponsor: Suranaree University of Technology
Total Contracted Amount (THB): 477,208.00

5. Publications

Papers in Conference Proceedings


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 Rashmiki 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

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

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 Mudiyanaselage 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
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 Antipolis, France

Distance-based Program

WEM also offers e-learning programs on:
- Integrated Water Resources Management (IWRM) in collaboration with UNU-IUNWEH, 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 multidisciplinary 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]

SANOGITA 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 management, 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 WESAKUL, 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]

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 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
5. Publications

Books and Monographs


Book Chapters


Papers in Refereed Journal


Papers in Conference Proceedings


Papers in Conference Proceedings


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
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)

Dijot Distributary System of Lower Ravi River Basin, Pakistan
By: Mr. Muhammad Faisal Rashid
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 Pisinnee 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

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

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)

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 Kuthiala 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

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

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

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)

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

Climate Change Impact on Sediment Transfer in Pakistan
By: Mr. Mubashir Majeed
Supervisor: Dr. Sangam Shrestha

Yield in Rawal Watershed Near Islamabad, Pakistan
By: Mr. Ali Raza
Supervisor: Dr. Damien Jourdain

Verification of Design Storm Shape for Analysis of Rainfall Pattern and 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 Muntaz 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

Assessing Climate Change Impacts on Water Footprints Analysis for Improved Irrigation Management: A Case Study of Kuthiala 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)

Validation of Design Storm Shape for Analysis of Rainfall Pattern and 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 Muntaz Wattoo
Supervisor: Prof. Mukand S. Babel

Farmer’s Perceived Agricultural Adaptation to Climate Change Impact in Rangsit Canal Area of Nong Sua District, Thailand
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By: Mr. Amir Muntaz Wattoo
Supervisor: Prof. Mukand S. Babel
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 postgraduate 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
- 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.

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.
- Foster Wheeler International Corporation
- 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 Isi; Doctor of Science, Technical University of Cluj Napoca

PORNPONG ASAVADORNEJA, 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)
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
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.

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, Xilinx 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, micro-actuators 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 OpenCV, 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.

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

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 HORNAYAK, 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 characterization]

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 NM 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


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

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**


**Journal Papers**


### 7. Doctoral Students’ Dissertation

**Mechatronics**

A New Throughput Forecasting Model for Disk Drive Automated Test Operation
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

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

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
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 Werkhuig Kundig Electro- Technisch Ingenieur, RijksUniversiteit Gent (State University Ghent, Belgium); Kandidatuur Burgerlijk Ingenieur, RijksUniversiteit Gent (State University Ghent, Belgium); Technisch Ingenieur Electro-Mechanica, HogerTechnischInstituutSint Antonius Gent, (High Technical Institute Saint Antonius Gent; 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 inventory 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 KOOM SAP, 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 (VITI), Mumbai, India and Visiting faculty at National Institute of Industrial Engineering (NITIE) Mumbai, India. Masters degree in Metallurgical Engineering from Visvesvaraya 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, Politechnica, Bucharest, Romania

PROF. AQUII 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.Aliagarh, 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), Tirucherappalli 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, IIT, Kharagpur, India

**Visiting Professor**, currently Professor in the Department of Economics at National Institute of Technology, (NITT), Tirucherappalli 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

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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, IIT, 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

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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


Chivaporntip, P., Bohez, E.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


International Conference Paper

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

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


**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

8. Masters Students Theses and Projects

**Industrial and Manufacturing Engineering**

An Exponential Risk Assessment for Customer-Oriented FMEA
By: Miss Panarpa Ardnea
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

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 Nhue
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

Life Cycle Assessment of a Printing Toner Cartridge: Comparative Study for Different End of Life (EoL) Scenarios in AIT Campus
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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
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 programme 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.
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 HORNAYK, 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, nanoceramic 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.

TANUJAL BORA, D.E. - Doctor of Engineering, Nanotechnology, Asian Institute of Technology; ME, Microelectronics, 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).


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. Publications: 117.

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

Gender and Field of Study-Based Perception of Nanotechnology and Nano-Safety in Thailand’s University Community
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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)
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 JANECZEK, 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

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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.


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


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

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

Recommend 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

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

Deep Learning for Face Recognition in Surveillance Videos
By: Mr. Paul-Darius Sarmadi
Supervisor: Dr. Matthew N. Dailey
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 spaceborne 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, Environ-ment, 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, BAg, 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)


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
Total Contracted Amount: (THB) 300,000.00

Education camp and study tour for JIS Group of institutions
Duration: 01-Jul-2014 to 31-Jul-2016
Project Investigators: Dr Sarawut
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: United Group of Institutions
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: Chubu University
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
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: Dr. Nitin Kumar Tripathi
Sponsor: JIS Group & Downtown University
Total Contracted Amount: (THB) 760,000.00

5. On-going Grants and Sponsored Research

Goeservices 4 sustainability
Duration: 01-Sep-2015 to 30-Nov-2017
Project Investigators: Dr Nitin Kumar Tripathi
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
Total Contracted Amount: (THB) 2,730,000.00
India
Total Contracted Amount: (THB) 965,000.00

6. Publications

Papers in Refereed Journal


Papers in Conference Proceedings


7. Doctoral Students’ Dissertation


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

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

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. Saajja 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
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 Frontières 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.


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]

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]


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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


Papers in Conference Proceedings


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-unications 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 analyzers, 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.

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.
5. On-going Grants and Sponsored Research

6. Publications

Papers in Refereed Journal


Papers in Conference Proceedings


7. Doctoral Students’ Dissertation

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.

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 collabora-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 JANECZEK, 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

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

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
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
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 Bioprocess 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, Geoinformatics)
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 environmental 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 professionals, 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; Biotechnology; 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. PEYUSH 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

Book Chapters

Papers in Refereed Journal


Papers in Conference Proceedings


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 towards 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
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 teramechanics, 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 (MMPAAT, 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)

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Promoting participatory homestead sustainable vegetable production to AIT community
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: Phase-1 (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 Higinbottom 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 Investigator(s): Dr Peeyush Soni
Sponsor: John Deere India Pvt. Ltd., India
Total Contracted Amount (THB): 552,000

6. Publications

Papers in Refereed Journal


Tursun N., Datta A., Sakinmaz M. S., Kantarci Z., Knezevic S. Z., Chauhan B. S. (2016). The critical period for weed control in...


Papers in Conference Proceedings


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.

**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.

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 Aquafarmers 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

Assistant Professor

AMARARATNE YAKUPITIYAGE, BSc, Univ of Kelaniya, Sri Lanka; MSc, AIT, Thailand; Postdoc, University of Stirling, Scotland, UK


Adjunct Faculty

RAM C. BHUJEL, BSc, Agriculture and Forestry University (AFU), Chitwan, Nepal; MSc and PhD, AIT, Thailand; Postdoc, University of Stirling, Scotland, UK

Research Associate Professor, (Nutrition, Statistics, Database Systems Development).

Visiting Associate Professor (Aquaculture, Bioenergetics, Fish Nutrition, Statistics, Database Systems Development).

5. Grants and Sponsored Research

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

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: Various international donors
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

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

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

Book Chapters


Papers in Refereed Journals


Papers in Conference Proceedings


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.


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
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


CHHAY CHANSEYHA, B.English, Norton University, Cambodia, Food Eng. & Bio-Process technology), SERD, AIT, Thailand

Research Associate


MANISHA SINGH, B.Tech, Tribhuvan University, M.Sc, Food Eng. & Bio-Process technology), SERD, AIT, Thailand

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) 
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


Papers in Referred Journal


Health Food Traditions of Asia (HFTA) 
Duration: 1 Jan 2015 – Feb 2016 
Project Investigators Dr Anil K. Anal 
Sponsor: Ministry of Environment, Japan 
Total Contracted Amount (THB): 128,000.00

4. On-going Grants and

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Papers in Conference Proceedings


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 Suwannasankha
Supervisor: Prof. Athapol Noomhorm

Development of Probiofic 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 technologies 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 technologies and management and address the burgeoning issue of climate change.
- To serve the society by creating and delivering new solution-oriented 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 challenges once graduated. The students come from multiple Disciplines- Engineering, Science, Economics, 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 (EPMS)
- Energy Technology (ET)
- Energy Economics and Planning (EEP)

Details regarding Energy field of study activities are available at www.serw.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 power supply management. 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-m² 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, InstNatPolytechnique, 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 Management, Energy and Environment Laboratory serves as a facilit

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 PHDUNSLP, B.Ind Tech, Siripatun 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 GNED

Ms. Watcharathorn Chantimathorn, Secretary (GMSARN Project)

Ms. Maria Kathrina Gratuito, Research Associate (RERIC)

Ms. Ashish Shrestha, Research Associate, APN Project

Ms. Shamima Akhter, Program Officer, PMEBM, UNIDO

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 (EDDA)
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 Energy, 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
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)
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
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

Renewable Energy Technologies for Integrated Community Farming Systems
Duration: 1 Apr. 2015 – 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 – 12 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
Total Contracted Amount: (THB) 797,851.00

Turning rice straw into cooking fuel for air quality and climate co-benefits 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: UNEP Shrestha and Dr. P. A. Salam Total contracted amount: (THB) 2,514,000.00

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 Dhikal, 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


Book Chapters


**Papers in Refereed Journals**


**Papers in Conference Proceedings**


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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. Weerakorn Ongsakul

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
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
CHONGRACK 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 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, DEng, AIT, Thailand

**Visiting 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

**Visiting 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 (Microbiology, Wastewater treatment, Biofilm in wetlands, and Environmental issues in general)**

KARE HELGE KARSTENSEN, BS, MS, Univ of Oslo; MBA, Heriot 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

**Visiting Professor (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 SUNDRAMURTHY, 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)

  ARAYA WICHESAN, MSc
  Research Associate (Manages research projects, prepares technical reports and presentations)

  ASHREYA K. SHRESTHA, MSc
  Research Associate (Manages research projects, prepares technical reports and presentations)

  ATITAYA PANUVATVANICH, DEng
  Senior 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)

  AURAIWAN KOKAMLUNG, BSc
  Research Assistant (Laboratory operating and sample analysis, prepares technical reports and presentations, collaborating with research partners)

  BISHAL BHARI, MEng
  Research Associate (Manages research projects, prepares technical reports and presentations)

  CHAIYAPORN IMSAPSANGWORN, MSc
  Research Laboratory Supervisor (Supervises instrumentation and data acquisition, calibration and maintenance of analytical instruments, assistant to senior laboratory supervisor for such as teaching, lab management)

  CHAWALIT CHAIWONG, MSc
  Research Associate (Manages research projects, prepares technical reports and presentations)

  DANG ANH NGUYET, MSc
  Research Associate (Manages research projects, prepares technical reports and presentations)

  DIDIN AGUSTIAN PERMADI, DEng
  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)

  DO DOAN THUONG TIN, BEng
  Research Assistant (Laboratory operating and sample analysis, prepares technical reports and presentations, collaborating with research partners)

  DO THI DIU, MSc
  Research Associate (Manages research projects, prepares technical reports and presentations)

  FAH ANANSIT PHITHAYAPHONGSAKORN, MBA
  Research Associate (Manages research projects, prepares technical reports and presentations)

  HUAYNA P.V. MORALES, MSc
  Research Associate (Manages research projects, prepares technical reports and presentations)

  HUSSNAIN MUKHTAR, MEng
  Research Associate (Manages research projects, prepares technical reports and presentations)

  ISHA BASYAL, MSc
  Research Associate (Manages research projects, prepares technical reports and presentations)

  ISHA MANANDHAR, MSc
  Research Associate (Manages research projects, prepares technical reports and presentations)

  JARUWAT WATANATANACHART, MEng
  Research Associate (Manages research projects, prepares technical reports and presentations)

  KAMONTIP KONGSANIT, BSc
  Research Assistant (Laboratory operating and sample analysis, prepares technical reports and presentations, collaborating with research partners)

  KESIRINE JINDA, BSc
  Research Assistant (Laboratory operating and sample analysis, prepares technical reports and presentations, collaborating with research partners)

  KRAILAK FAKKAEW, MEng
  Research Associate (Manages research projects, prepares technical reports and presentations)

  KRISHNA RAM YENDYO, MEng
  Research Associate (Manages research projects, prepares technical reports and presentations)

  KRISTINA THAPA, MSc
  Research Associate (Manages research projects, prepares technical reports and presentations)

  KRITSANAPONG DONJIT, BSc
  Research Assistant (Laboratory operating and sample analysis, prepares technical reports and presentations)

  LAI NGUYEN HUY, MEng
  Research Associate (Manages research projects, prepares technical reports and presentations)

  LE GIA KY, BEng
  Research Assistant (Laboratory operating and sample analysis, prepares technical reports and presentations, collaborating with research partners)

  MANJUNATHA VENKATAPPA, Mtech
  Research Associate (Manages research projects, prepares technical reports and presentations)

  MOHAMMAD DALOWER HOSSAIN, MSc
  Research Associate (Manages research projects, prepares technical reports and presentations)

  MY LE DINH, MEng
  Research Associate (Manages research projects, prepares technical reports and presentations)

  NARISSARA RUPSAYAM, BSc
  Research Associate (Manages research projects, prepares technical reports and presentations)
Research Assistant (Laboratory operating and sample analysis, prepares technical reports and presentations, collaborating with research partners)
NATTAWUT JITTRA, MSc
Research Associate (Manages research projects, prepares technical reports and presentations)

NIHIT BHATTARAI, BEng
Research Assistant (Laboratory operating and sample analysis, prepares technical reports and presentations, collaborating with research partners)

NIMITR BUNRUANG, BTech (Mech.)
Senior Technician (Responsible for the repair and maintenance of related machines, assists students in laboratory experimental work and experimental set-up, carry out routine maintenance and repair of laboratory equipment and facilities)

NITASHA ARORA, MSc
Research Associate (Manages research projects, prepares technical reports and presentations)

PANTAPORN SITTTPLANGKOON, MSc
Research Associate (Manages research projects, prepares technical reports and presentations)

PANUPONG BOONYANUN, BTech (Mech.)
Senior Technician (Responsible for the repair and maintenance of related machines, assists students in laboratory experimental work and experimental set-up, carry out routine maintenance and repair of laboratory equipment and facilities)

PAVEENUCH BUTNIL, BSc
Research Assistant (Laboratory operating and sample analysis, prepares technical reports and presentations, collaborating with research partners)

PETER COOKEY, 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)

PHARAMATE RONGKASUTIROJ, BEng
Research Assistant (Laboratory operating and sample analysis, prepares technical reports and presentations, collaborating with research partners)

PIMCHANOK PRAPASRIKET, BSc
Research Assistant (Laboratory operating and sample analysis, prepares technical reports and presentations, collaborating with research partners)

POONYANOOC BURAWONG, MEng
Research Assistant (Manages research projects, prepares technical reports and presentations)

PRAKHAT JOSHI, BSc
Research Assistant (Laboratory operating and sample analysis, prepares technical reports and presentations, collaborating with research partners)

RATNAKAR OJARUTIP, BSc
Research Assistant (Laboratory operating and sample analysis, prepares technical reports and presentations, collaborating with research partners)

SAHARAT KACHAWUT, BSc
Research Assistant (Laboratory operating and sample analysis, prepares technical reports and presentations, collaborating with research partners)

SAIRA BATool, MSc
Laboratory Supervisor (Laboratory Supervisor (Supervises instrumentation and data acquisition, calibration and maintenance of analytical instruments, assistant to senior laboratory supervisor for such as teaching, lab management)

SARA E. BECK (PhD)
Senior Research Associate (Manages research projects; assists in project coordination, prepares project reports, prepares project budgets and manages project finances; assist team leader in training activities)

SAROJ KUMAR CHAPAGAIN, PhD
Senior Research Engineer (Manages research projects, assists in project coordination, prepares project reports, assist team leader in training activities)

SHRISTI MASKAY, MSc
Research Associate (Manages research projects, prepares technical reports and presentations)

SINBANDID PHOMMACHACK, MSc
Research Associate (Manages research projects, prepares technical reports and presentations)

SITTPONG POPINIT, BSc
Research Assistant (Laboratory operating and sample analysis, prepares technical reports and presentations, collaborating with research partners)

SITIKORN KAMNGAM, BSc
Research Assistant (Laboratory operating and sample analysis, prepares technical reports and presentations, collaborating with research partners)

SOPIDA KHAMYAI, MSc
Research Associate (Manages research projects, prepares technical reports and presentations)

SRIJANA THAPA, MSc
Research Associate (Manages research projects, prepares technical reports and presentations)

SU SU MYAT, MSc
Research Associate (Manages research projects, prepares technical reports and presentations)

SUPATCHAI RUJAKOM, MS
Research Associate (Manages research projects, prepares technical reports and presentations)

SUPUSANEE DULYAKASEM, ME
Research Assistant (Laboratory operating and sample analysis, prepares technical reports and presentations)

SURANGKANA BOOTJOM, BSc
Research Assistant (Laboratory operating and sample analysis, prepares technical reports and presentations, collaborating with research partners)

SUWIDA SRIKONGPAN, BSc
Research Assistant (Laboratory operating and sample analysis, prepares technical reports and presentations, collaborating with research partners)
technical reports and presentations, collaborating with research partners)

TATCHAI PUSSAYANAVIN, DEng

Senior Research Engineer (Manages research projects, assists in project coordination, prepares project reports, assist team leader in training activities)

TAWAN CHAI SETJANTUEK, BSc

Senior Technician (Responsible for the repair and maintenance of related machines, assists students in laboratory experimental work and experimental set-up, carry out routine maintenance and repair of laboratory equipment and

TEERACHAI KANGKAMANO, BSc

Research Assistant (Laboratory operating and sample analysis, prepares technical reports and presentations, collaborating with research partners)

THANANUN PLANGAROM, MEng

Research Associate (Manages research projects, prepares technical reports and presentations)

TINNAPAT MONGKONTEP, MEng

Research Associate (Manages research projects, prepares technical reports and presentations)

TIPPAWAN SINGHOPON, BEng

Research Assistant (Laboratory operating and sample analysis, prepares technical reports and presentations, collaborating with research partners)

TREESUKON DUMKHUM, BSc

Research Assistant (Laboratory operating and sample analysis, prepares technical reports and presentations, collaborating with research partners)

VILAVAN KHUEANAI, BSc

Research Assistant (Laboratory operating and sample analysis, prepares technical reports and presentations, collaborating with research partners)

VO HOANG NHAT PHONG, MEng

Research Associate (Manages research projects, prepares technical reports and presentations)

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 Peri-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 30-Jun-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

**Innovative Toilet City: From Reinventing to Realization at Scale**
Duration: 1-Sep-16 to 28-Feb-19
Project Investigator(s): Prof. C. Visvanathan
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

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): 990,000.00
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 Danh
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 Danh
Sponsor: Stockholm Environment Institute (SEI) Asia Center
Total Contracted Amount (THB): 1,989,500.00

6. Publications

Book and Monographs


Papers in Refereed Journal


Doi: 10.1080/19338244.2016.1254081.


Papers in Conference Proceedings

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.


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.


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 Koottatap
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 Kerdswang
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
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
Deployment of Hierarchical Micro-Nanostructured Superhydrophobic Surfaces for Anti-Biofouling Applications in Marine Environments
By: Mr. Ravula Surya Venkata Durga Anvesh
Supervisor: Dr. Oleg Shipin
(Vice-chairperson), Prof. Gabriel Louis Hornyak (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
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
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.
- Barrier and opportunities for clean energy financing; climate financing as a tool for clean energy financing.

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
- 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

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 Risk 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 Change: 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
eccoord@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 Department (Women’s employment in informal

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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 Communitues in Asia

Administrative Staff

AGNES PARDILLA, Program Officer


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 Contracted 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. Juliaikha 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 (SUM-ERNET) 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 work-ers 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

Papers in Refereed Journal


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 of Song Bung 4 Hydropower Project in Quang Nam Province, Vietnam
By: Miss Phan Thi Ngoc Thuy
Supervisor: Dr. Philippe Doneys

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)

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)

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.

Visiting Assistant Professor (Governance of Natural Resources, Water Resources Management, Rural Development and Agricultural Policies)

CLEMENT GRUNBUHEL, MA, PhD, University of Vienna, Austria/Assistant Professor (Savanna ecosystem dynamics, landscape ecology, biodiversity, mangrove, risk management)

GANEISH P SHIVAKOTI, BS, MS, Udaipur Univ, India; PhD, Michigan State Univ, USA.

Professor (Natural Resources Economics; Common Property Rights Management; Landscape Ecology; Integrated Land Use Systems; Sustainable Forest Management; and Human Impact on Vegetation)
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

Soo 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.


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 Contracted 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 Ayeyarwaddy Delta regions of Myanmar
Duration: 1-Jul-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,
Project Investigator(s): S. Kumar, R.P. Shrestha, A. Salam
Sponsor: UNEP DTU Partnership, Denmark
Total Contracted amount (THB): 2,514,000

Technology needs assessment in Asia
for climate change mitigation and adaptation Phase II Workshop,
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,
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

Book Chapters

Papers in Refereed Journal


Papers in Conference Proceedings


6. Doctoral Students' Dissertation

Carbon Stock Assessment using Remote Sensing and Forest Inventory Data in Savannakhet, Lao PDR

By: Miss Phuchard 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 Sunsamee Arunyawat
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

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, Ayeyarwaddy 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, Myanmar
By: Mrs. Yin Min Hmwe
Supervisor: Dr. Clemens Grunbuhel (Chairperson), Dr. Damien Jourdain (Co-chairperson)
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 PONQUAN, 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


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 Sustainable
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

Thailand.

**Book Chapters**


**Papers in Refereed Journals**


**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 Zulfiquar

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 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
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


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 donars
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

Papers in Refereed Journal


Papers in Conference 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 Srichuea
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. Mustafiz 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 Environmental 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
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.

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


HIROYUKI MIYAZAKI, Ph.D., The University of Tokyo, Japan.


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


4. On-going Grants and Sponsored Research

5. Publications

Papers in Refereed Journal


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; Knowledge 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, ChulalongkornUniv, 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 Management and 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


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 – IIIT, 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.LLM 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)


**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#4**

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

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): 10,332,562.50

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 Investigator(s): 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 Investigator(s): 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 Investigator(s): Dr. Donyaprueth Kairit
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 Investigator(s): Dr. Barbara Igel
Sponsor: AIT
Total Contracted Amount (THB): 8,511,000.00

International Executive MBA- Vietnam for Hanoi#13.2 Group
Duration: 01-08-2012 to 31-12-2017
Project Investigator(s): Dr. Donyaprueth Kairit
Sponsor: AIT
Total Contracted Amount (THB): 8,822,650.00

International Executive MBA- Vietnam for HCMC#10
Duration: 01-08-2013 to 31-12-2018
Project Investigator(s): Dr. Donyaprueth Kairit
Sponsor: AIT
Total Contracted Amount (THB): 8,820,000.00

International Executive MBA- Vietnam for Hanoi#13.1 Group
Duration: 01-08-2012 to 31-12-2017
Project Investigator(s): Dr. Donyaprueth Kairit
Sponsor: AIT
Total Contracted Amount (THB): 10,332,563.00

International Executive MBA- Vietnam for HCMC#9th Group
Duration: 01-08-2012 to 31-12-2017
Project Investigator(s): Dr. Donyaprueth Kairit
Sponsor: AIT
Total Contracted Amount (THB): 10,322,563.00

International Executive MBA Vietnam for Hanoi#17
Duration: 15-08-2016 to 31-12-2017
Project Investigator(s): 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 Investigator(s): Dr. Barbara Igel
Sponsor: Multi-donor
Total Contracted Amount (THB): 12,246,000.00
**5.10 Publications**

**Book Chapters**


**International Journal Articles**


**Papers in Conference Proceedings**


5.11 Doctoral Students' Dissertation

Understanding Entrepreneurial Attitude of Multilevel Marketing Members: A Case Study of Charoen Osot International Company, Thailand
By: Mr. Somchai Hatchaldealaha
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 Thanayawatpornkul
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. Suporn 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
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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 and Transport 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.S)
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

IT Application in ERP and Financial Analysis
Duration: 19-Dec-2016 to 23-Dec-2016
Project Investigator(s): Mr. Fazle Karim
Sponsor: International Agency for Agricultural Research and Development, Indonesia
Total Contracted Amount (THB): 274,500.00

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

Program Coordination and Administrative Support for Entura Hydro Tasmania
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 Chonlaisin
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: Ceylon 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

Consultancy on Needs/GAPS Assessment
Duration: 01-Oct-2016 to 30-Nov-2016
Project Investigator(s): Dr. Faiz Shah
Sponsor: Entura Hydro Tasmania, Australia
Total 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

Sponsor: National Water Supply and Drainage Board, Sri Lanka
Total Contracted Amount (THB): 600,000.00

Innovative Irrigation Management (Batch I)
Project Investigator(s): Dr. Pradeep Kumar Dash
Sponsor: Ministry of Water Resources / ADB
Total 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: Multi-donor
Total 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, Sri Lanka
Total Contracted Amount (THB): 850,000.00

Delegates from Eastern University, Sri Lanka
Exposure Visit Program for the Delegates from Eastern University, Sri Lanka
Duration: 2016 to 23
Project Investigator(s): Mr. Fazle Karim
Total Contracted Amount (THB): 774,900.00

Project Management, Monitoring and Evaluation
Project Investigator(s): Mr. Fazle Karim
Sponsor: Multi-donor
Total 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, Sri Lanka
Total Contracted Amount (THB): 850,000.00

Con...
Bangladesh
Sponsor: Ministry of Commerce, Hossain
Project Investigator(s): Dr. Md. Zakir
Duration: 07
Contracted Amount (THB): 775,200.00

Thailand
Agro (THB): 485,000.00
Contracted Amount

Sri Lanka
Sponsor: Department of Motor Traffic, Project Investigator(s): Mr. Fazle Karim
Duration: 06
Contracted Amount (THB): 881,911.00

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): 2,843,160.00

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: Ministry of Public Administration, Bangladesh  
Contracted Amount (THB): 1,237,000.00

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: 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
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 (Physiotherapy), Clinical Physiotherapist, Speech (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 (Physiotherapy), Clinical Physiotherapist, 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): 1,030,199.00

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, Ethiopia  
Total 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]


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]


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 Electronics and Computer Technology Center (NECTEC) [Network management; Network engineering; Ad hoc Network]

AIMASCHANNA NIRUTASUKRAT, 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 (NECTEC) [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 University Bachelor of Engineering in Computer Engineering, Kasettsart 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 WESHSUWANURUGS, 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-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

InterERlab Trainings 2017
Duration: 16-Jan-2017 to 31-Dec-2017
Project Investigator(s): Viraphan Samadi
Sponsor: Multi Donors
<table>
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<th>Project Name</th>
<th>Duration</th>
<th>Investigator(s)</th>
<th>Sponsor</th>
<th>Amount (THB)</th>
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<td>16-Jan-2017 to 31-Dec-2017</td>
<td>Prof. Kanchana Kanchanasut</td>
<td>THNIC Foundation/NECTEC</td>
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<td>Viraphan Samadi</td>
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<td><strong>Low-cost Real-time Monitoring</strong></td>
<td>01-Jan-2016 to 31-Dec-2017</td>
<td>Dr. Mongkol Ekpanyapong</td>
<td>STIC-ASIE</td>
<td>1,398,540.00</td>
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<tr>
<td><strong>InterLab IT services 2017</strong></td>
<td>16-Jan-2017 to 31-Dec-2017</td>
<td>Viraphan Samadi</td>
<td>Multi Donor</td>
<td>2,000,000.00</td>
</tr>
</tbody>
</table>
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 technology 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 represneted 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-Jan-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.

<table>
<thead>
<tr>
<th>SCHOOL/FoS</th>
<th>SPONSORED &amp; CONTRACTED PROJECTS</th>
<th>TOTAL PROJECTS</th>
<th>PUBLICATIONS</th>
<th>TOTAL PUBLICATIONS</th>
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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.

<table>
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<tr>
<th>SCHOOL/FoS</th>
<th>DOCTORAL STUDENTS DISSERTATION</th>
<th>MASTERS STUDENTS RESEARCH</th>
<th>TOTAL MASTERS STUDENTS RESEARCH</th>
<th>UG STUDENTS CAPSTONE PROJECT</th>
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Table 9.2: Summary of Student Research 2016