

ANNUAL REPORT ON
RESEARCH
2014



PREFACE

The Asian Institute of Technology is pleased to release the Report on Annual Research 2014 which provides a consolidated overview of the research activities conducted across the institute during the year. The year saw a focused approach towards the research and development agenda that was achieved by building on AIT's niche in thematic areas of strength. This would not have been possible without the whole-hearted commitment of our faculty and staff.

Overall, during the period January to December 2014, a total of 411 sponsored and contracted projects including capacity building activities with a total budgeted value of 1.7 billion THB were conducted by the faculty and staff from within the Fields of Study (FoS) 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 projects.

The total number of publications for the same period stood at 449 from across AIT. The quality of our research could be attributed to our strength in the respective thematic areas of research namely: Environment, Water, Energy, Industry, Food, Development, Infrastructure, and Information and communication Technologies (ICT). This year the research report is outlined based on these eight themes which are grouped by their relevant fields of studies. AIT continues to strive forward with its continued commitment towards focusing its research output in line with the thematic areas towards enhancing the quality of its research. The year's research activity reinforces our strategic priority towards playing the leading role in the region's sustainable development.

AIT has consistently performed in its engagement with leading research institutions and donor agencies to develop its own capacity and has contributed to the creation of new collaborations and linkages. This entailed the application of highly complex fields of technological inquiry towards achieving sustainable development solutions for the

region. It's my firm belief that despite the various adversities and challenges AIT has been successful in consolidating its research efforts and successfully garnered rich experiences and knowledge that were put back into the classrooms.

AIT through its successful project implementations has always provided the opportunity towards the scaling up sustainable technological and social solutions in addressing real-life challenges. In so doing its research has maintained an integrated approach which combines research, teaching and learning, and outreach.

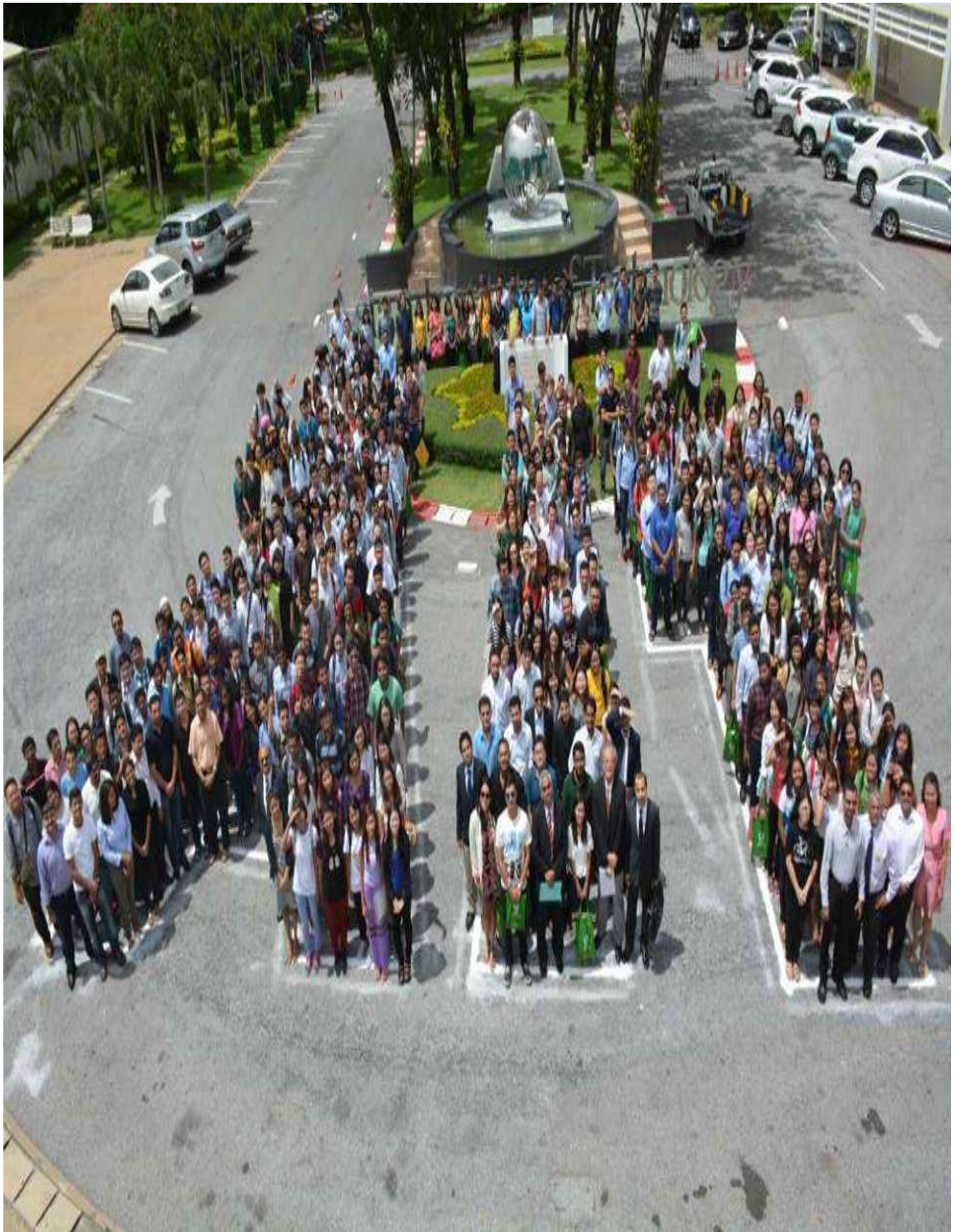
We look forward to jointly working together towards carving out a distinct research profile for the Asian Institute of Technology in the respective thematic area of focus. In conclusion, I would thank all AIT faculty, staff, and students for their whole hearted efforts in achieving the envisaged research objectives.



Professor Kanchana Kanchanasut
Vice President for Research

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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 has become a leading regional postgraduate institution and 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 230,000 volumes and 830 print and on-line 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 AND TRENDS, 2006-2014

2.1 Project Numbers and Budget 2006-2014

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 2006-2014. **Figure 2.1** gives an overview of the trend of the ongoing sponsored and contracted projects for the period 2006-2014 both in and budget value terms and in terms of the number of ongoing projects undertaken during the same period.

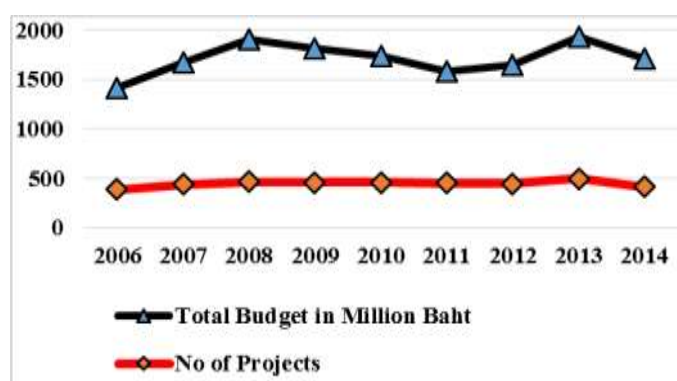


Figure 2.1: Project Budget is identified in Million ('000,000) Thai Baht.

2.2 Trend of the Ongoing Projects by Category

Sponsored and contracted projects undertaken at AIT are assigned under the Fund 30 which are categorized as Research and development which comprises 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 comprise continuing professional education, short-course training and consultancy services. **Figure 2.2** provides the trend for the period 2006 – 2014 on budget value terms and **Figure 2.3** give the trend in terms of the number of ongoing projects under each category.

Publications over the years has seen an increase in the requirements in order to enhance quality of research from a time about a decade ago when doctoral students had only to submit a manuscript of a Paper before graduation, today all such students need to show acceptance of paper by an international and referred journal before they graduate.

Publications in refereed Journals as one measure of productivity in the academic spheres increased with a high margin between 2009 and 2014 this .Discussions are being held to include additional criteria towards ascertaining the impact of such papers. **Figure 2.4** shows the trend of publications under the categories namely Referred Journal Publications, Doctoral Thesis, Master's Thesis as well as completed projects for the period 2006-2014.

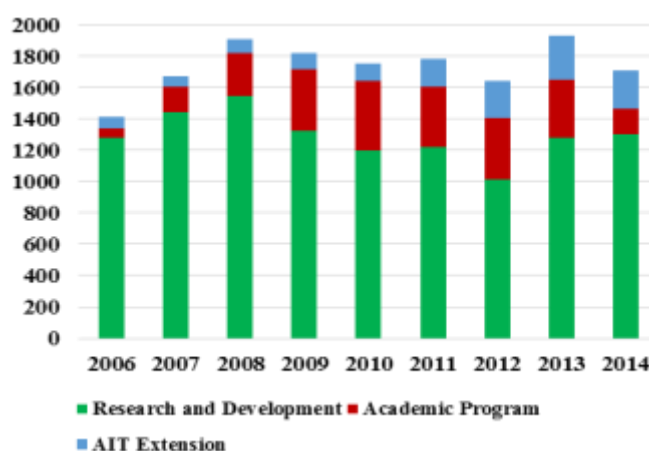


Figure 2.2 Budget Value terms 2006-2014

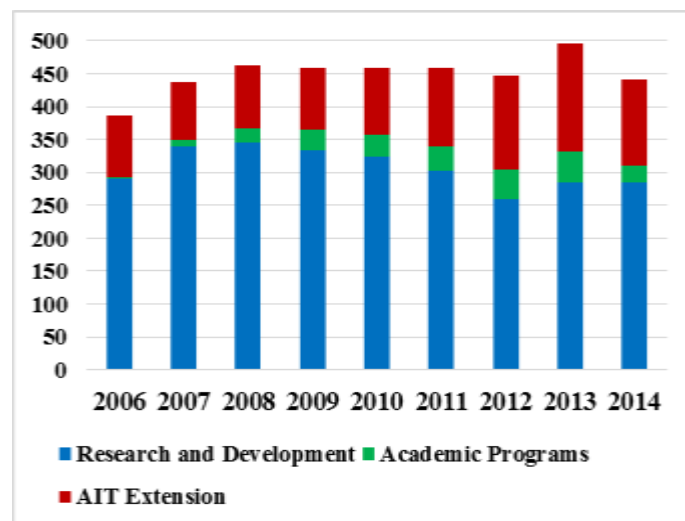


Figure 2.3 Numbers of Ongoing projects

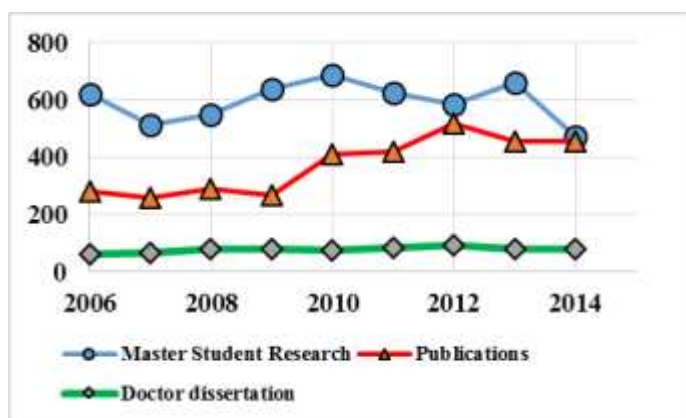


Figure 2.4: Institute Wide publications Trends

Over the years there has been a reduction in seconded faculty (supported by different countries). This led to a reduction in the total full time faculty (as they were not all replaced by direct hire faculty) and highlights the tremendous effort put in by our faculty and research staff. There has also been a subsequent increase in adjunct faculty who offer specialized courses and professional programs. **Figure 2.5** below shows the trend in the Faculty strength grouped as Full time faculty and total faculty including adjunct, affiliated, visiting faculty, etc

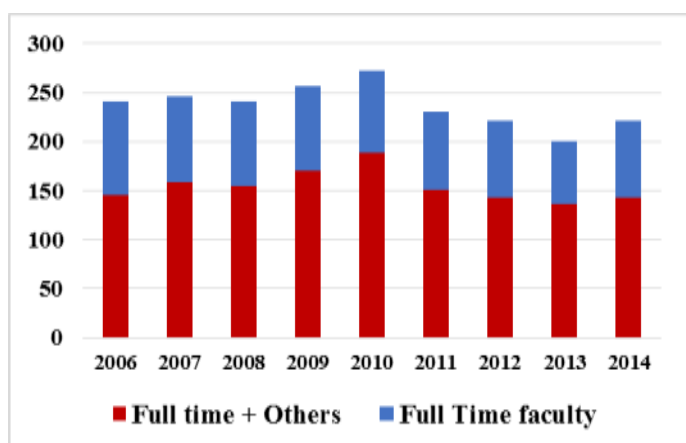


Figure 2.5: Faculty Strength 2006- 2014

Research excellence in an international institution of higher learning as AIT is linked with the graduate students we have. **Figure 2.6** gives an institute wide trend on the intake, Enrolment and graduated student strength for the period.

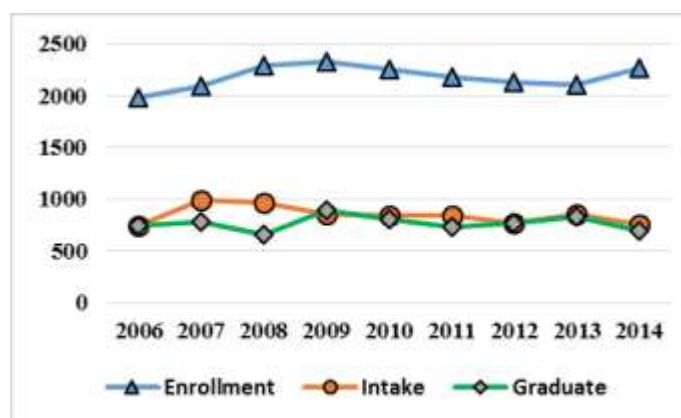


Figure 2.6: Instituted wide strength for the intake, Enrolment and graduated student strength for the period 2006-2014

2.3 Research Publications Under thematic Areas

Maintaining a societal perspective on science, research activities of AIT in different areas and domains are categorised into 8 themes in the Research Report 2014, named as Development, Infrastructure, Environment, Water, Energy, Industry, Food and Information and communication Technologies (ICT). Different Fields of studies (FoS) are grouped in to these 8 themes. Research publications (Book, Journal and conferences), Other publications (national journal, regional journals, Invited talks, seminar, workshop etc) Ongoing and Completed projects are categorized under different themes for 2006 to 2014 is given in **Figures 2.7-2.16**.

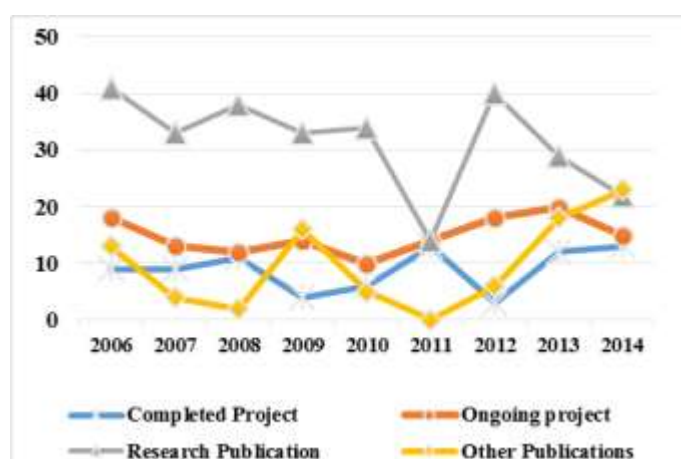


Figure 2.7 Development

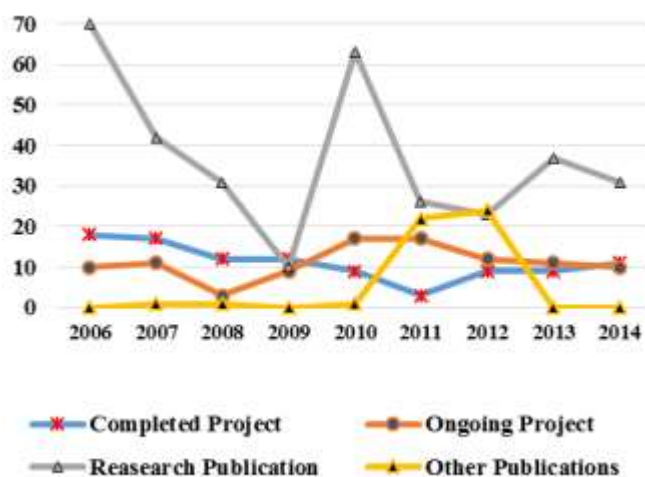


Figure 2.8 Energy

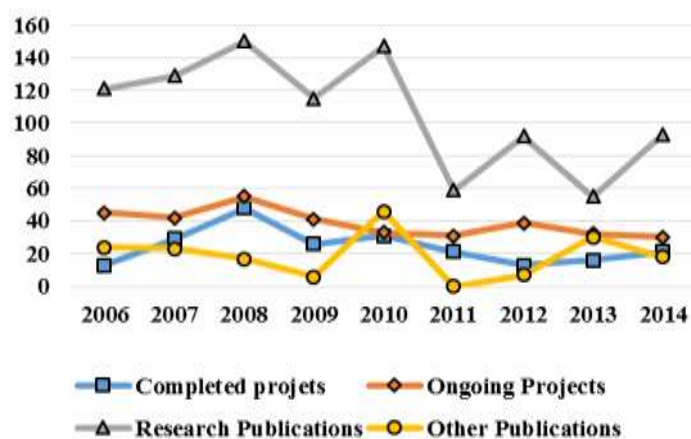


Figure 2.11 Environment

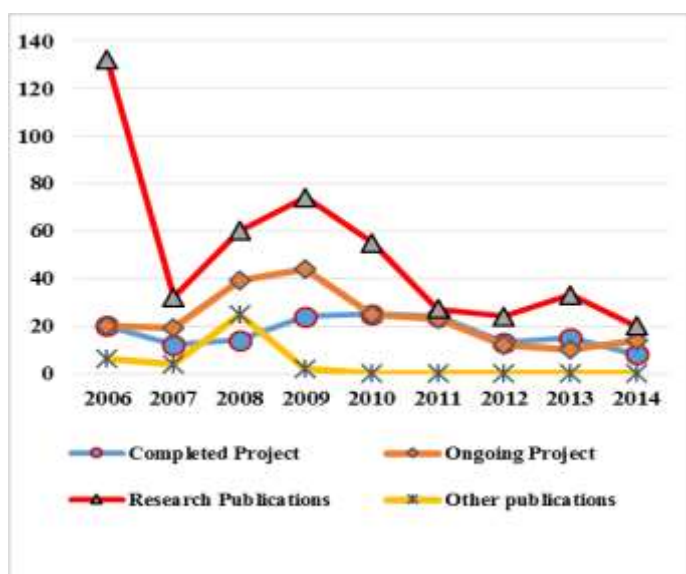


Figure 2.9 Infrastructure

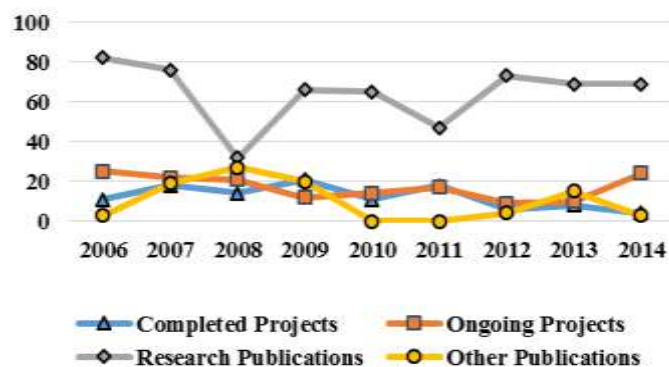


Figure 2.12 Food

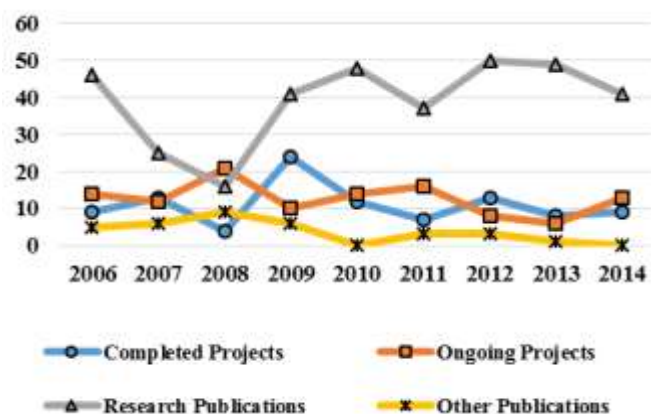


Figure 2.10 Water

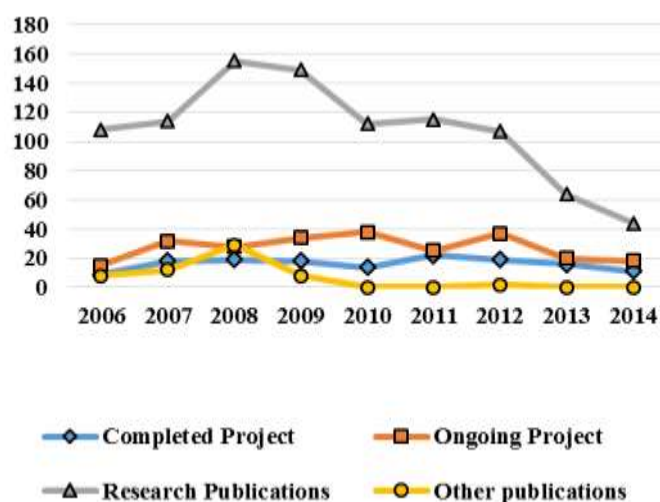


Figure 2.13 Industry

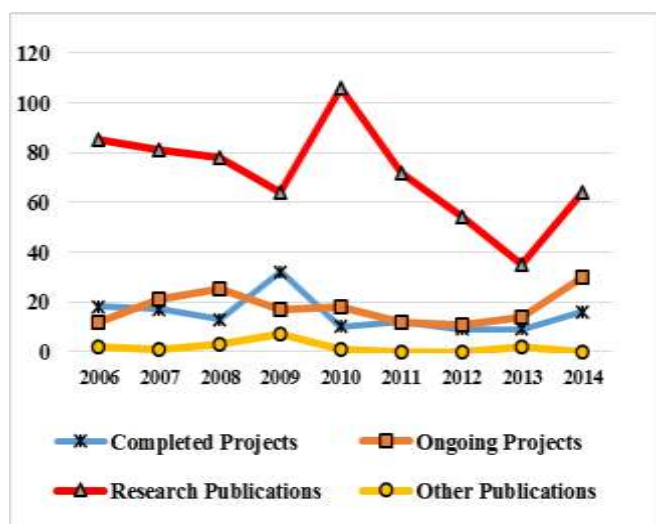


Figure 2.14 ICT

2.4 Projects value (in million baht) under thematic Areas

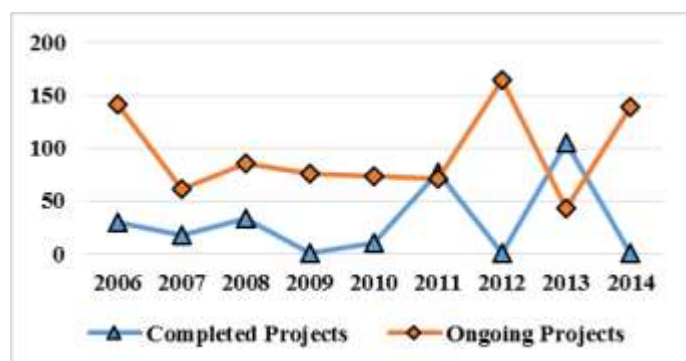


Figure 2.15 Development

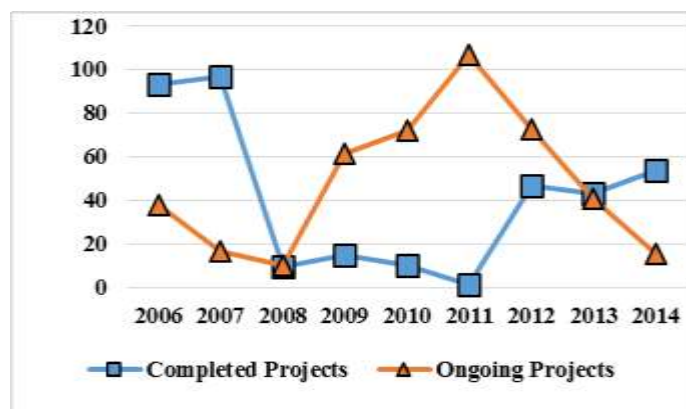


Figure 2.16 Energy

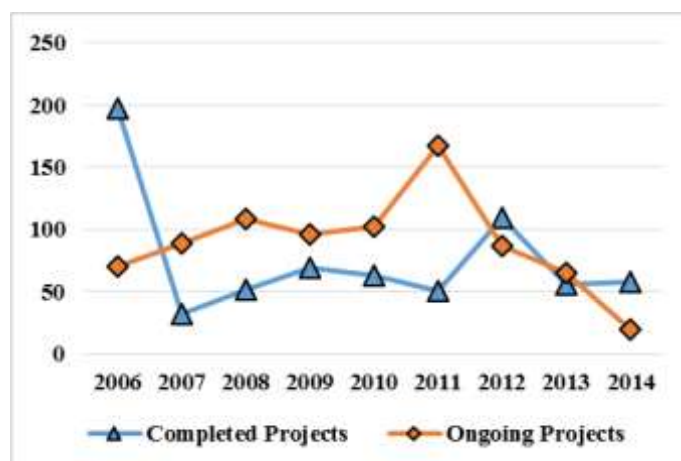


Figure 2.17 Infrastructure

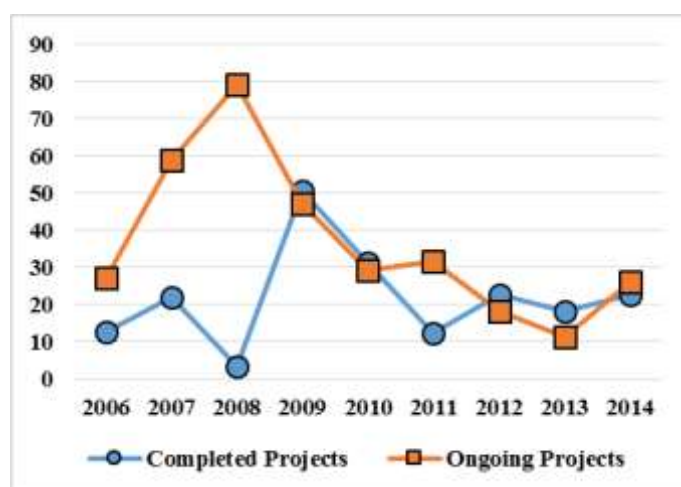


Figure 2.18 Water

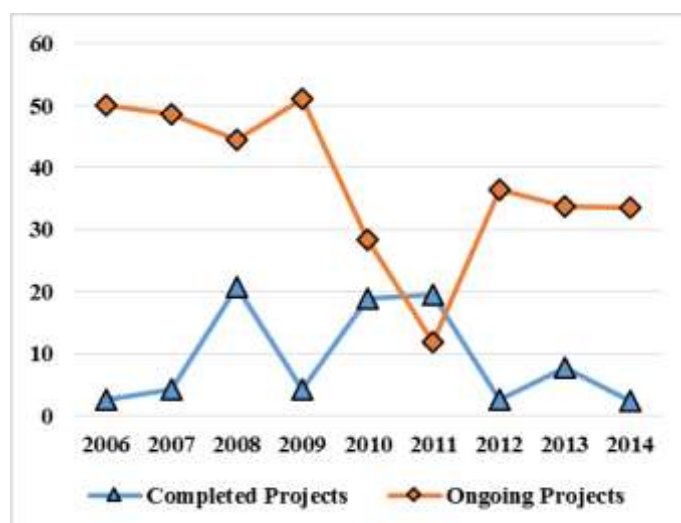


Figure 2.19 Environment

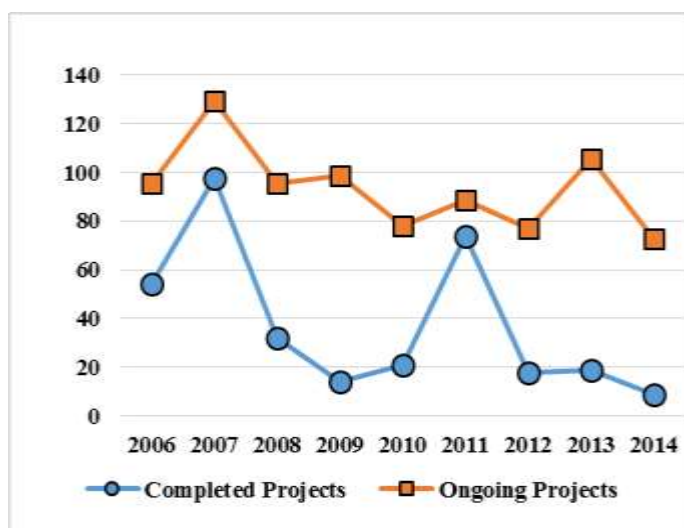


Figure 2.20 Food

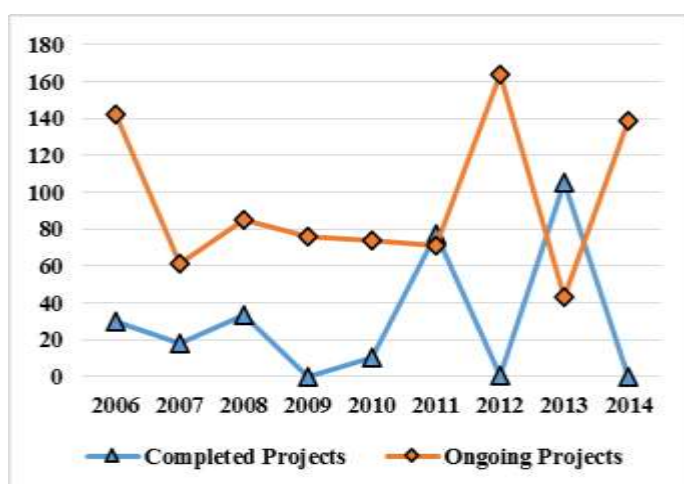


Figure 2.21 Industry

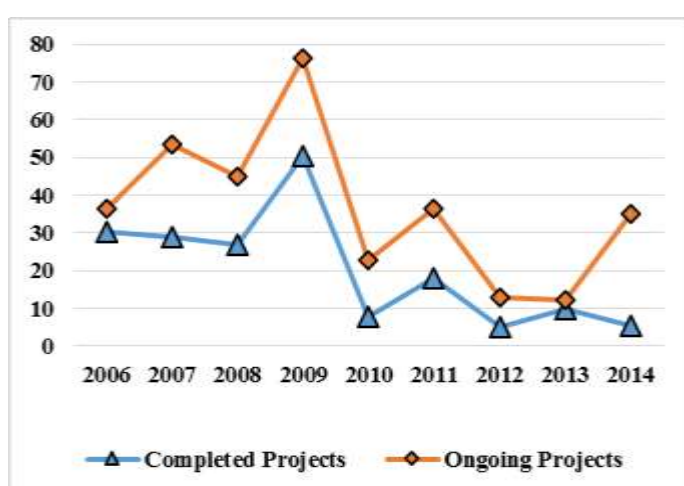


Figure 2.22 ICT

2.5 Most cited papers in Scopus

Publication and citation information is considered one of the most widely recognizable indicators of research output and quality, and collection and analysis of this information is among means to judge alignment of the institutions research activities with its strategic priorities. Here below shows the top 5 most cited publications in Scopus lifetime. 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 1,486 time(s)) 1995; Artificial Intelligence; Dung, P.M.
2. Developments in industrially important thermostable enzymes: A review (Cited 477 time(s)) 2003; Bio resource Technology; Haki, G.D., Rakshit, S.K.
3. Direct solid-liquid separation using hollow fiber membrane in an activated sludge aeration tank (Cited 335 time(s)) 1989; Water Science and Technology; Yamamoto, K., Hiasa, M., Mahmood, T., Matsuo, T.
4. An abstract, argumentation-theoretic approach to default reasoning (Cited 288 time(s)) 1997; Artificial Intelligence; Bondarenko, A., Dung, P.M., Kowalski, R.A., Toni, F.
5. An analytical approach for DG allocation in primary distribution network (2006) International Journal of Electrical Power and Energy Systems, Cited 278 times, Acharya, N., Mahat, P., Mithulananthan, N.

2.4 Top 5 Researchers with the Highest Number of Projects initiated 2006- 2014

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 Researchers with the Highest Number of Projects initiated 2006- 2014.

Faculty Name	No of Projects as PI	PI and Co PI
Prof Kanchana Kanchanasut	59	61
Prof S. Kumar	20	49
Prof C. Visvanathan	33	38
Prof Mukand S. Babel	30	35
Dr Kunnawee Kanitpong	27	30
Dr Kyoko Kusakabe	16	24

Table2.1: Top 5 Researchers with the Highest Number of Projects initiated 2006- 2014

Chapter 3: RESEARCH THEMES INTRODUCTION

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 has become a leading regional postgraduate institution and is actively working with public and private sector partners throughout the region and with some of the top universities in the world. AIT research has maintained being the important value addition to its diverse academic offerings. AIT's institutional resilience is due to several factors, including a diverse and well-balanced research portfolio, highly experienced faculty, and a strategy of cluster hiring in a variety of fields that enables the assembly of cutting-edge interdisciplinary teams that can successfully compete for sustainable development. Research at AIT is oriented towards the sustainable development of the region, strengthening the knowledge, development and business capacity of the region, and supporting communities and their economic development and integration into the global economy. Maintaining a societal perspective on science, research activities of AIT in different areas and domains are categorized into 8 themes in the Research Report 2014, named as Development, Infrastructure, Environment, Water, Energy, Industry, Food and Information and communication Technologies (ICT). Different Fields of studies (Fos) are grouped in to these 8 themes and as follows

Development

- REGIONAL AND RURAL DEVELOPMENT PLANNING FOS
- GENDER AND DEVELOPMENT STUDIES FOS

Infrastructure

- CONSTRUCTION, ENGINEERING AND INFRASTRUCTURE MANAGEMENT FOS
- GEOTECHNICAL AND EARTH RESOURCES ENGINEERING FOS
- STRUCTURAL ENGINEERING FOS
- TRANSPORTATION ENGINEERING FOS
- OFFSHORE TECHNOLOGY AND MANAGEMENT FOS

Environment

- ENVIRONMENTAL ENGINEERING MANAGEMENT FOS
- NATURAL RESOURCES MANAGEMENT FOS
- PULP AND PAPER TECHNOLOGY FOS
- URBAN ENVIRONMENTAL MANAGEMENT FOS
- DISASTER PREPAREDNESS, MITIGATION AND MANAGEMENT

Water

- WATER ENGINEERING AND MANAGEMENT FOS

Energy

- ENERGY FOS

Industry

- INDUSTRIAL AND MANUFACTURING ENGINEERING FOS
- MECHATRONICS FOS
- MICROELECTRONICS AND EMBEDDED SYSTEMS FOS
- NANOTECHNOLOGY FOS
- SCHOOL OF MANAGEMENT

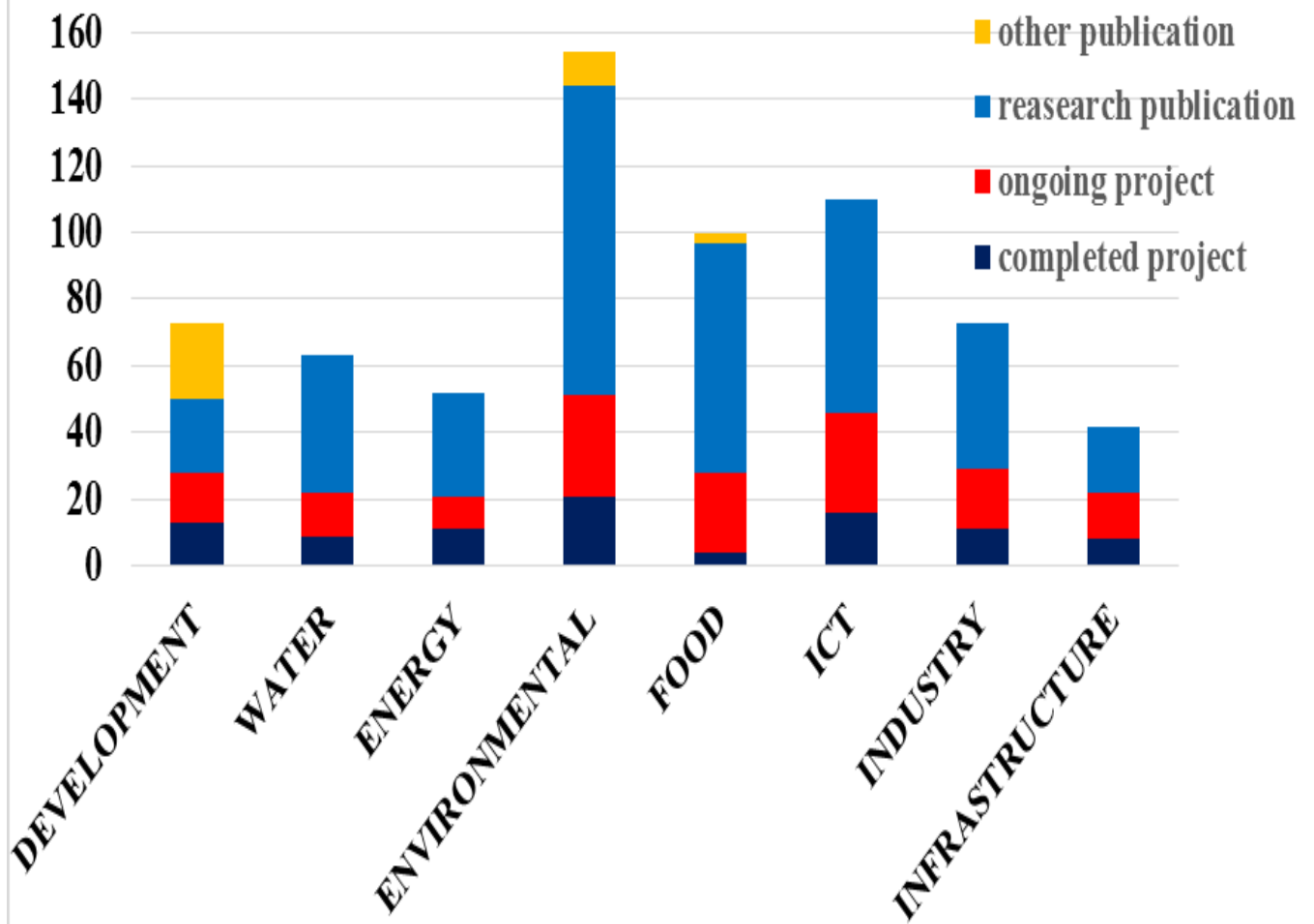
Food

- AGRIBUSINESS MANAGEMENT FOS
- AGRICULTURAL SYSTEMS AND ENGINEERING FOS
- AQUACULTURE AND AQUATIC RESOURCES MANAGEMENT FOS
- FOOD ENGINEERING AND BIOPROCESS TECHNOLOGY FOS

ICT

- COMPUTER SCIENCE (CS)
- COMPUTER SCIENCE WITH SPECIALIZATION IN SOFTWARE ENGINEERING
- INFORMATION MANAGEMENT (IM)
- REMOTE SENSING AND GEOGRAPHIC INFORMATION SYSTEMS (RS-GIS)
- TELECOMMUNICATIONS (TC)
- INFORMATION AND COMMUNICATION TECHNOLOGIES (ICT)

Overall 2014 (in terms of numbers)



Chapter 3.1:DEVELOPMENT

3.1.1 Introduction

This theme focuses on rural poverty, improvement of the quality of life, and social and economic development of rural areas and highlights both the need for studies in gender and development, and the integration of gender analysis and gender relations. This aims to equip people with the analytical and conceptual skills needed to understand gender issues in both contexts, enabling them to participate effectively in gender and development-related research, policymaking and implementation. Practice oriented research provides rural and regional planning that's 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 also equally emphasized along with the management of rural development programs and local development projects to strengthen rural communities for sustainable development. The sections below are further divided into Research Projects and Publications. Projects are subdivided into ongoing projects and completed projects in 2014. The Publication comprises of Book and chapters, International refereed papers in journals and conferences, Patents, other academic and outreach activities.

3.1.2 Grants and Sponsored Research Completed in 2014

Mobile Livelihoods and Gendered citizenship: The counter geographies of Indigenous people: China

Duration:1-Jan-2010 to 31 Dec- 2014
Project Investigator(s):Kyoko Kusakabe

Sponsor:Norwegian University of Science and Technology (NTNU) Total Contracted Amount (THB):2,118,670

Revisiting Gender in Development: Complex inequalities in a changing Asia Gender mainstreaming infrastructure development in Laos

Duration:15-Mar-2011 to 30-Sep-2014
Project Investigator(s):Kyoko Kusakabe
Sponsor:The Research Council of Norway
Total Contracted Amount (THB):1,000,000.00

Survey and assessment of street vending policies and regulations: Focus on Thailand case

Duration: Nov-2013 to Apr 2014
Project Investigator(s): Kyoko Kusakabe
Sponsor: ILO
Total Contracted Amount (THB): 301,266.00

Role of local governments' policies in creating multicultural society: Review of policy and practices to manage/support migrants in Municipality/Provincial level in Thailand and Japan

Duration; 1-Nov-2013 to 31-Oct-2014
Project Investigator(s): Kyoko Kusakabe
Sponsor: Toyota Foundation
Total Contracted Amount (THB): 1,320,000.00

AusAid and MPower: Mekong Project 7 on Research Fellowship Program on Water Governance

Duration: 1-Aug-2011 to 31-Mar-2014
Project Investigator(s): Bernadette P Resurreccion
Sponsor: CGIAR Challenge Program on Water & Food
Total Contracted Amount (THB): 30,293,367.50

Revisiting Gender in Development: Gender mainstreaming infrastructure development in Laos

Duration: 15-Mar-2011 to 15-Mar-2014

Project Investigator(s): Kyoko Kusakabe
Sponsor: The Research Council of Norway

Total Contracted Amount (THB): 1,000,000.00

Gender and development training research publications and Networking project

Duration: 1-Jul-2011 to 30-Jun-2014
Project Investigator(s): Bernadette P Resurreccion
Sponsor: Norwegian Ministry of Foreign Affairs
Total Contracted Amount (THB): 5,360,482

AIT-Norwegian Cooperation Programme Phase 2011- 2014 (GDS Component: Training, Research, Publications and Networking Project)

Duration: July-2011 to June-2014
Project Investigator(s): Dr Julaikha Bente Hossain
Sponsor:Norwegian Ministry of Foreign Affairs
Total Contracted Amount (THB): 5,360,482.16

Social Impact Assessment on Wild Honeybee Project in Cambodia

Duration: 13-May-2011 to 31-Mar-2014
Project Investigators Kyoko Kusakabe
Sponsor Arun LLC
Total Contracted Amount (THB): 960,480

3.1.3 On-going Grants and Sponsored Research

Consortium of Development Studies in Southeast Asia (CDSSEA) - 2

Duration: Aug-2013 to 1-Jun-2016
Project Investigator(s): Philippe Doney
Sponsor:International Development Research Centre (IDRC)
Total Contracted Amount (THB): 4,628,792.00

Sustainable Climate Compatible Development Project (CCD)

Duration: June 2013 – June 2015

Co-Project Investigator(s): Kyoko Kusakabe/Prof S. Kumar
Sponsor:CDKN-ICLEI Secretariat GmbH, Germany
Total Contracted Amount (THB): 665,000.00

Escaping the middle income country trap: Targeted and pragmatic policies for technological upgrading and workers inclusive industrial strategies as drawn from firm-level analysis of the Philippines and Thailand

Duration: 1-Aug-2011 to 30-Dec-2016
Project Investigator(s): Kyoko Kusakabe
Sponsor: WOTRO
Total Contracted Amount (THB): 4,911,102

Asian Project Management Support Programme

Duration: 1-Dec-2009 to 30-Jun-2015
Project Investigator(s): Kyoko Kusakabe/Philippe Doney/Mokbul Morshed Ahmad
Sponsor: International Fund for Agricultural Development (IFAD)
Total Contracted Amount (THB): 45,150,000.00

Japanese Government Grant

Duration: Renewed every year
Project Investigator(s): Kyoko Kusakabe
Sponsor:Japanese Government
Total Contracted Amount (THB):

Revisiting Gender in Development: Complex Inequalities in a changing Asia

Duration:15-Mar-11 - 30 Sep-14
Project Investigator(s): Bernadette P Resurreccion, Philippe Doney
Sponsor:Research Council of Norway
Total Contracted Amount (THB):7,423,628.24

Gendered Impact of Cross-border Agricultural Investment: Case of Rubber Plantations in Northern Laos, Myanmar and Cambodia

Duration: 15 Oct 2014 – 31 Aug 2016
Project Investigator(s): Dr Kyoko Kusakabe
Sponsor:Stockholm Environment Institute – Asia (SEI)
Total Contracted Amount (THB):

Gender, Technology and Development (GTD Journal)

Duration: January 2012 – July 2015
Project Investigator(s): Dr Julaikha Bente Hossain
Sponsor:Rockefeller Foundation
Total Contracted Amount (THB): 2,250,000.00

Adapting to Climate Change in Peri-Urban SEA

Duration: Oct-2012 to 3-Sep-2015
Project Investigator(s):Bernadette Resurreccion / Edsel Sajor
Sponsor: IDRC-International Development Research Centre
Total Contracted Amount (THB): 18,262,000

Do policy makers understand the economic and social issues affecting low income women in four Mekong countries? - AUSAID

Duration: Mar -2013 to 1-Apr-2016
Project Investigator(s): Philippe Doney
Sponsor: AUSAID Australia
Total Contracted Amount (THB): 22,243,000

Organizing expert consultation workshop on land tenure and disaster and its social and gender impact

Duration: 8-Jul-2013 to 31-Dec-2019
Project Investigator(s): Kyoko Kusakabe/Rajendra P Shrestha
Sponsor: FAO
Total Contracted Amount (THB): 1,450,000

Gender Technology and Development (GTD) Journal

Duration: Aug-2012 to July-2015
Project Investigator(s):Julaikha B. Hossain
Sponsor: Rockefeller Foundation
Total Contracted Amount (THB): 2,250,000

Gendered impact of cross border agricultural investment: case of rubber plantations in Northern Laos, Myanmar and Cambodia

Duration: 15-Oct-2014 to 31-Aug-2016
Project Investigators Dr. Kyoko KusakabeSponser Stockholm Environment Institute-Asia (SEI)

Total Contracted Amount (THB): 2,256,500

Murdoch-AIT Workshop-Myanmar

Duration: 01-Jul-2014 to 31-Jul-2015
Project Investigators Dr. Kyoko Kusakabe, Prof. S. Kumar
Sponser Murdoch University, Australia
Total Contracted Amount (THB): 87,000

Murdoch-AIT Datacollection-Myanmar

Duration: 01-Jul-2014 to 31-Jul-2015
Project Investigators Dr. Kyoko Kusakabe, Prof. S. Kumar
Sponser Murdoch University, Australia
Total Contracted Amount (THB): 72,500

3.1.4 Publications

Book

Memon, Junaid A. and **Thapa, Gopal B.** (2014) “Explaining the de facto Open-access of Public Property Commons ” Pakistan Institute of Development Economics, Islamabad

Lund, Ragnhild, **Kyoko Kusakabe**, Smita Mishra Panda, Wang Yunxian (eds.) (2014) Transformations of indigenous people’s lives and livelihoods: Mobilities in China, Laos, and India, Routledge.

Book Chapters

Kusakabe, Kyoko (2014) “Forging an international network of gender and development practitioners: IFP students at the Asian Institute of Technology”, in Terance W. Bigalke and Mary S. Zurbuchen (eds) Leadership for social justice in higher education: The legacy of the Ford Foundation International Fellowship Program, New York: Palgrave Macmillan, pp.155-169.

Kumar S., **Kusakabe Kyoko**, Pravakar Pradhan, Pujan Shrestha, Srujana Goteti, Tran Anh Tuan, Ekawit Meteejaroenwong, Trinnawat Suwanprik, Khanh Linh, (2014) “Greenhouse Gas Emissions from Tourism Service Providers: Case Studies in Chiang Mai, Thailand and Hue, Vietnam”, in Louis Lebel, Chu Thai

Hoanh, Chayanis Krittasudthacheewa and Rajesh Daniel (eds) *Climate Risks, Regional Integration, and Sustainability in the Mekong Region*, published by Strategic Information and Research Development Centre and SUMERNET Secretariat (SIRD), Selangor, Malaysia, 248-269.

Kusakabe, Kyoko and Sengkham Vongphakdy (2014) "Gender vulnerabilities of resettlement and restricted mobility of ethnic groups in northern Laos" in Lund et al. (eds) *Transformations of indigenous people's lives and livelihoods: Mobilities in China, Laos, and India*, Routledge.

Kusakabe, Kyoko and Ruth Pearson (2014) "Burmese female migrant workers in Thailand: Managing productive and reproductive responsibilities", in Thanhdam Truong et al. (eds) *Migration Gender and Social Justice*, Springer, 69-86.

Kusakabe, Kyoko (2014) "Coping Capacity of Small-scale Border Fish Traders in Cambodia" in Brun, C., P. Blaikie and M. Jones (eds) *Alternative development: Unravelling Marginalisation, Voicing Chang*, Ashgate, pp.259-268.

Kusakabe, Kyoko and Ruth Person (2014) "What Do Political Change in Burma Offer Migrant Workers in Thailand" Mikael Gravers and Fleming Ytzen (eds) *Burma/Myanmar – Where Now?*

Kusakabe, Kyoko, Prak, Sereyvath," Women fish border traders in Cambodia: Intersectionality and gender analysis", Gendered entanglements, NIAS Press, Copenhagen, Denmark.

Kusakabe, Kyoko and Ruth Person (2014)," Remittances and women's agency: Managing networks of obligation among Burmese migrant workers in Thailand", *Transnational labour migration, remittances and the changing family in Asia*, Palgrave

Papers in Refereed Journal

Baloch, Mumtaz A. and **Thapa, Gopal B** (2014)." Agricultural extension in Balochistan, Pakistan: date palm farmers's access and satisfaction" *Journal of Mountain Science*, Springer Vol. 11 Page no. 1035-1048

Ahmed Mokbul M (2014), *Climate finance in the Greater Mekong Subregion (GMS)*, Development in Practice, Volume 24, page no 960-974.

Bashier Haitham Abbas and **Routray Jayant K.**, Assessing factors affecting Flood-induced public health risks in Kassala State of Sudan, *Operations Research for Health Care Disaster Prevention and Management*, Vol. 3, 215-225.

Bunbongkarn, Suleeporn, **Soparth P.**, "Adoption of Integrated Farming in Thailand Delivered by the Royal DEvelopment Study CEnters", *Outlook on Agriculture*, Vol 42, 2014

S Dey, BP Resurreccion, **P Doney**s (2014), *Gender and environmental struggles: voices from Adivasi Garo community in Bangladesh*, *Gender, Place & Culture* 21 (8), 945-962

Kusakabe, Kyoko, Pujan Shrestha, S. Kumar and Nguyen Thi Khanh Linh (in press) "Pathways to Sustainable Urban Tourism: Garden Houses in Hue, Vietnam", *International Journal of Sustainable Society*.

Akter, Shamima and **Kusakabe Kyoko** (2014) "Gender-based violence among Documented Rohingya Refugees in Bangladesh", *Indian Journal of Gender Studies*, vol. 21, 225 – 246.

Virankabutra, Tresa Croson and **Kusakabe Kyoko** (2014) "Contesting and Complying: Gender and Ethnicity among Thai-Sikh Diaspora Youth on Bangkok", *Migration and Development*, 203-218. (selected as one of the most downloaded articles published in Routledge Social Sciences journals in 2014).

Gopal, Nikita, Williams, Meryl J., Porter, Marilyn, **Kusakabe, Kyoko** and Cho, Poh Sze (2014) *Gender in Aquaculture and Fisheries: Navigating Change*, *Asian Fisheries Science*, vol. 2, 1-14.

Kusakabe, Kyoko and Prak Sereyvath (2014) "Women Fish Border Traders in Cambodia: What shapes Women's Business Trajectories?", *Asian Fisheries Science*, vol. 27, 43-58.

Kusakabe, Kyoko, Lund, Ragnhild, Panda, Smith Mishra, Wang, Yunxian, Vongphakdy, Sengkham (in press) "Resettlement in Lao PDR: Motility Resistance and Gendered Impacts", *Gender, Place and Culture*, currently published online.

Ma, Agatha and **Kusakabe, Kyoko** (accepted) "Gender Analysis of Fear and Mobility in the Context of Ethnic Conflict in Kayah State, Myanmar", *Singapore Journal of Tropical Geography*.

Kusakabe, Kyoko (in press) "Framework to Analyze Borders from a Gender Perspective: Case Studies of Borders at the Mekong Region Lower Basin Countries", *Japan Border Review*, No.5, 169-186. (in Japanese).

Outreach Activities

Trainings/Conferences/Workshops

Conduct a workshop on Lessons Learned and Ways Forward, Pattaya, Thailand, organized by APMAS Project, 22 – 24 January 2014. (Dr Philippe Doney)s

Questionnaire pre-testing and giving training on data collection, Phnom Penh, Cambodia supported by the AusAid Project, 19 – 11 May 2014. (Dr Philippe Doney)s

Philippe Doney)s and Donna L. Doane, What is Essential is Invisible': Empowerment and Security in Economic Development Projects for Low-Income Women in Four Mekong Countries, ASEASUK 14 Conference, University of Brighton, September 12-14, 2014.

Development Research Writing,
Publication and Dissemination

Workshop from 11 – 12 October 2014, AIT Conference Centre, Thailand, supported by The Regional Center for Social Science and Sustainable Development (RCSD), Chiang Mai University (*Dr Philippe Doney*s).

Lorina Sthapit and Philippe Doney, Roles and experiences of female Maoist combatants during and after the People's War in Nepal, paper presented at the International Conference on Gender, Empowerment and Conflict in South Asia, Kolkata, 6-8 November, 2014.

Kusakabe, Kyoko and Ruth Pearson (2014) "Working through exceptional space: a case of women migrant workers in Mae Sot, Thailand", presented at the Mobilities and Exceptional Spaces in Asia Workshop, organized by Asia Research Institute, National University of Singapore, 8-9 July 2014.

Kusakabe, Kyoko (2014) "Women in fish value chain and collective business: Case of processed fish traders in Cambodia", 5th Global Symposium on Gender in Aquaculture and Fisheries (GAF5), Special Symposium at the 10th Indian Fisheries and Aquaculture Forum, Lucknow, India, November 13-15.

Kusakabe, Kyoko (2014) "Borders and relations across borders: women Fish traders at the Cambodia-Thai border", 4th conference of the Asian Borderlands research network, 8-10 December, Hong Kong

Kusakabe, Kyoko and Ruth Pearson (2014) "Working through exceptional space: a case of women migrant workers in Mae Sot, Thailand", Communities in between, IAS Workshop, 3-4 November, Lyon

Kusakabe, Kyoko (2014) "Role of local governments in accommodating migrants in Yokohama and Samut Sakorn", 3rd MMC regional conference, Transnational migration and border studies: Assessing threats and opportunities, 4-6 August 2014, Mahidol University, Thailand.

Kusakabe, Kyoko (2014) "Role of local governments in accommodating migrants: Comparative study of Yokohama and Samut Sakorn", presented at the International Sociological Association Yokohama Conference, RC31, July 19.

Kusakabe, Kyoko (2014) "Borderland as friction of terrain: Creating spaces for social reproduction of cross border migrant workers in Thailand", presented at the Global Border Research Collaboration, Paris workshop, June 10-12, organized by MIT Borders Research Initiative in collaboration with PRESAGE Sciences Po, and the Institute for the Study of Human Rights at Columbia University.

A four-day conference on *Gender, Development and Social Policy*, held in 15-18 October 2014 at the Beijing Normal University, Beijing, China. (*Dr Julaikha Hossain*)

Invited speakers/Resources person/Guest Lecturer

Plenary speaker, KANITA Postgraduate International Conference on Gender Studies (KPIGS) at the University Sains Malaysia (USM) Penang Malaysia, 12 – 14 August 2014. (*Dr Kyoko Kusakabe*)

Resource person, Center for Southeast Asian Studies Seminar, Kyoto University, Japan 25 July 2014, "Burmese women migrant workers in Thailand: Managing productive and reproductive responsibilities". (*Dr Kyoko Kusakabe*)

"Gender Empowerment and Social Entrepreneurship", short course for the Italian students for Advanced Diploma in Environmental Policy and Sustainable Development, Organized by Italian Diplomatic Academy, Bangkok, Thailand, November 2014 (Guest Lecturer). (*Dr Julaikha Hossain*)

"Gender and Development" Module, Beijing Normal University, Beijing, China, October 2014 (Guest Lecturer). (*Dr Julaikha Hossain*)

Other Academic Contributions

Member of the Issue-specific Supporting Committee on Development and Gender of Japan International Cooperation Agency (JICA). (*Dr Kyoko Kusakabe*)

Advisor for JICA's research project "Effective support for National Machineries". (*Dr Kyoko Kusakabe*)

Member of the Program Oversight Panel for the CGIAR Research Program on Aquatic Agricultural System. (*Dr Kyoko Kusakabe*)

External Examiner of Zebunnessa Laizu, Dissertation Title: Role of Information and Communication Technology: Women's Empowerment in Rural Bangladesh, School of Engineering and Information Technology, 30 December 2014, Murdoch University, Australia. (*Dr Kyoko Kusakabe*)

External Examiner of Yee Yee Swe, Dissertation Title: Living from Hand to Mouth: Lived Experiences of Construction Workers in Myanmar, Department of Geology, 1 June 2014 to 23 January 2015, Norwegian University of Sciences and Technology (NTNU), Trondheim, Norway. (*Dr Kyoko Kusakabe*)

External reviewer, Global Health Equity Scholars Review Committee, UC Berkeley, Florida International University, Stanford University and Yale University, 2014. (*Dr Philippe Doney*s)

External Examiner of Analiza Liezl Perez-Amurao, "Examining the Gendered Migration of Filipino Educators in Bangkok", PhD Qualifying Examination, PhD Program in Multicultural Studies, RILCA, Mahidol University, 20 March 2014. (*Dr Philippe Doney*s)

Associate Editor of Gender, Technology and Development, 1 January 2001 to present. (*Dr Kyoko Kusakabe*)

Editorial Board member of Review of Development and Cooperation Journal, 1 January 2006 to present. (*Dr Kyoko Kusakabe*)

Editorial Board member of Review of Applied Economics, 1 January 2011 to Present. (*Dr Kyoko Kusakabe*)
Special Issue Editor of Asian Fisheries Science, 1 January 2014 to November 2014. (*Dr Kyoko Kusakabe*)

Editorial Review Board member of Book Series: Global Political Economies of Gender and Sexuality, 1 January 2014. (*Dr Kyoko Kusakabe*)
Journal Coordinator of Gender, Technology and Development Journal 2012 to present (*Dr Julaikha B Hossain*)

AIT Program Director for Consortium of Development Studies in Southeast Asia (CDSSEA) scholarships 2012-2016 (*Dr Philippe Doney*)
Associate Editor of Gender, Technology and Development Journal, published by Sage Publications. (*Dr Philippe Doney*)

CHAPTER 3.2: ENVIRONMENT

3.2.1 Introduction

Environment is the surrounding things. It includes living things and natural forces. The environmental theme 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. Environment' is basically including 3 sub-sectors which are described below. First sub sector focuses on natural resource management, biodiversity conservation, land degradation, Forestry etc. Natural resource management refers to the management of natural resources such as land, water, soil, plants and animals, with a particular focus on how management affects the quality of life for both present and future generations. The Second sub sector focuses on industry, and waste issues, urbanization issues (waste to energy, resource efficiency, green growth and green economy, circular economy and sustainable consumption and production, waste reuse and recycling). Over all, the activities and action include waste management from its inception to its final disposal. This includes amongst other things, collection, transport, treatment and disposal of waste together with monitoring and regulation. It also encompasses the legal and regulatory framework that relates to waste management encompassing guidance on recycling. Lastly the Third sub sector focusses on water and wastewater, and sanitation – quantity and quality aspects (water use, reuse and recycling potential for achieving water security) – with a major focus on freshwater resources. The sections below are further divided into Research Projects and Publications. Projects are subdivided into ongoing projects and completed projects in 2014. The Publication comprises of

Book and chapters, International refereed papers in journals and conferences, Patents, other academic and outreach activities

3.2.2 Grants and Sponsored Research Completed in 2014

Assessment of Impacts of the AIT Green Campus Initiatives Project Support - Bioenergy

Duration: 01-Feb-2014 to 30-Sep-2014

Project Investigator(s): Prof. Nguyen Thi Kim Oanh, Dr. Didin Agustin Permadi, Dr. P. Abdul Salam

Sponsor: ADEME, France

Total Contracted Amount (THB): 100,000

AIT Green Campus Initiatives Project Support - Waste

Duration: 01-Feb-2014 to 30-Sep-2014

Project Investigator(s): Prof Ajit Annachatre

Sponsor: ADEME, France

Total Contracted Amount (THB): 100,000

AIT Green Campus Initiatives Project Support - Wetlands

Duration: 01-Feb-2014 to 30-Sep-2014

Project Investigator(s): Dr. Oleg Shipin, Dr. Vilas Nitivittananon

Sponsor: ADEME, France

Total Contracted Amount (THB): 100,000

Assessment of Co-benefits on Air Quality and Climate Resulted from Various Control Strategies in Southeast Asia

Duration: 1-Aug-10 to 31-Dec-14

Project Investigator(s): Prof.

Nguyen Thi Kim Oanh

Sponsor: French Ministry of Foreign Affairs

Total Contracted Amount (THB): 1,704,000

Characterization of Municipal Solid Waste in Phetchaburi Province, Thailand

Duration: 1-Oct-13 to 30-Jun-14

Project Investigator(s): Prof. C. Visvanathan

Sponsors: Phetchaburi Green Energy Co. Ltd., SMC Power PCL, Thailand

Total Contract Amount (THB): 450,000

Green Hotel

Duration: 25-May-10 to 31-Jan-14

Project Investigator(s): Dr.

Thammarat Koottatep

Sponsor: French Development Agency

Total Contracted Amount (THB): 1,123,409

Inter Laboratory Comparison for Implementing Phase III of the Male Declaration

Duration: 1-Jun-07 to 30-Jun-14

Project Investigator(s): Prof.

Nguyen Thi Kim Oanh

Sponsor: UNEP-EAP/AP

Total Contracted Amount (THB): 1,032,150

Pollution Mitigation in Coastal Communities via the Multi-functional Wetland (Mangrove) Approach with Biodiversity and Sustainable Agri-Business Co-benefit

Duration: 10-Mar-12 to 31-Dec-14

Project Investigator(s): Dr. Oleg Shipin

Sponsor: UNEP

Total Contracted Amount (THB): 900,000

Professional Masters in Environmental Engineering Batch II

Duration: 1-Sep-11 to 31-Dec-14

Project Investigator(s): Prof.

Nguyen Thi Kim Oanh

Sponsor: Multi donors

Sponsor: Multi donors
Total Contracted Amount (THB):
2,446,150

Research Mission Trips of AIT Faculty

Duration: 1-Sep-10 to 31-Aug-14
Project Investigator(s): Prof. Ajit
P. Annachatre
Sponsor: SDCC AIT France
Network
Total Contracted Amount (THB):
288,000

Technical Assistance for the setup of a Credit Facility to support Ecosystems friendly Accommodations in Coastal areas of Thailand

Duration: 25-Mar-10 to 31-Jan-14
Project Investigator(s): Dr.
Thammarat Koottatep
Sponsor: French Development
Agency AFD
Total Contracted Amount (THB):
1,950,000

Zero Waste Discharge in Industries- Training program

Duration: 1-Oct-13 to 31-Mar-14
Project Investigator(s): Prof. C.
Visvanathan
Sponsor: Participants
Total Contracted Amount (THB):
88,450

Enabling sustainable land management for sustainable use of soil and land resources

Duration: Dec 2012 – June 2014
Project Investigator(s): Rajendra.P.
Shrestha
Sponsor: FAO RAP
Contracted Amount (THB): 900,000

Climate technology center and networking

Duration: Sep 2013 – Dec 2014
Project Investigator(s): M Babel, S
Shrestha and Rajendra P. Shrestha
Sponsor: UNEP
Contracted Amount
(THB): 3,900,000

Land tenure and disaster and its social and gender impact

Duration: Jul to Mar-2014

Project Investigator(s): K.
Kusakabe and Rajendra P.
Shrestha
Sponsor: FAO RAP
Total Contracted Amount
(THB): 1,577,000

Developing Multi-scale Climate Change Adaptation Strategies for Farming Communities in Cambodia, Lao PDR, Bangladesh and India

Duration: 1-Apr-2012 to 30-Nov-
2014
Project Investigator(s): Dr.
Clemens Grunbuhel
Sponsor: CSIRO
Total Contracted Amount
(THB): 922,731

2010_Vulnerability and Adaptation to Climate Change in Coastal Cities of Southeast Asia

Duration: 10-Jan-2011 to 31-Dec-
2014 Project Investigator(s): Dr.
Vilas Nitivattananon
Sponsor: Federal Ministry for the
Environment, Nature
Conservation and Nuclear Safety
(BMU)
Total Contracted Amount (THB):
3,787,200

Measuring the Influence of Sound Materials Society in Thailand

Duration: 18-Apr-2013 to 30-Apr-
2014
Project Investigator(s): Dr. Vilas
Nitivattananon
Sponsor: Sumitomo Foundation
Total Contracted Amount (THB):
218,576

AIT Green Campus Initiatives project support-Wetlands

Duration: 1-Feb-2014 to 30-Sep-
2014
Project Investigator(s): Dr. Oleg
Shipin, Dr. Vilas Nitivattananon
Sponsor: ADEME, France
Total Contracted Amount (THB):
100,000

A Study of Post Consumer Carbon (PCC) in Recyclable Streams in Bangkok and Regional cities

Duration: 7-July-2014 to 30-Nov-
2014
Project Investigator(s): Dr. Vilas
Nitivattananon
Sponsor: Tetra Pack Co. Ltd.
Total Contracted Amount (THB):
773,440

Training course on Project Management

Duration: 8-Mar-2013 to 31-Dec-
2014
Project Investigator(s): Jayant K
Routray
Sponsor: State Institute for
Urban Development, Government
of Karnataka, India
Total Contracted Amount
(THB): 1,186,208.50

Training on Disaster Management

Duration: 1-Sep-11 to 31-Dec-14
Project Investigator(s): Jayant K
Routray
Sponsor: ECRRP PCMU,
Planning Commission, World Bank
Project Aid
Total Contracted Amount (THB):
571,942.31

3.2.3 On-going Grants and Sponsored Research

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 28-Dec -15
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

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-Dec-15
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): 5,542,800

Development and Dissemination of Fecal Sludge Management Toolkit for Investors, Planners and Consultants

Duration: 1-Oct-14 to 31-Mar-16
Project Investigator(s): Dr. Thammarat Koottatep
Sponsor: Bill & Melinda Gates Foundation
Total Contracted Amount (THB): 23,592,320

Development of a Membrane Based Treatment of TEG for Gas Separation Plant's Wastewater

Duration: 20-Feb-13 to 31-Dec-15
Project Investigator(s): Prof. C. Visvanathan
Sponsor: Petroleum Authority of Thailand (PTT) Public Company Limited
Total Contracted Amount (THB): 2,287,500

Development of Innovative Technology and Integrate Management Systems for Sustainable Sanitation in ASEAN

Duration: 10-Dec-13 to 31-Dec-15
Project Investigator(s): Dr. Thammarat Koottatep
Sponsor: Korea Institute of Science and Technology (KIST)
Total Contracted Amount (THB): 2,420,000

Emission Inventory Elaboration for Phnom Penh Municipality, Cambodia

Duration: 20-Sept-14 to 30-May-15
Project Investigator(s): Prof. Nguyen Thi Kim Oanh
Sponsor: German Federal Enterprise for International Cooperation

Total Contracted Amount (THB): 786,000

Evaluation of Two Technologies for Heavy Metals Removal under Tropical Condition

Duration: 1-Oct-12 to 30-Apr-15
Project Investigator(s): Prof. Ajit P. Annachhatre
Sponsor: UNESCO-IHE Partnership Research Fund (UPaRF), The Netherlands
Total Contracted Amount (THB): 487,500

Impact, Treatment and Management of Acid Mine Drainage

Duration: 1-Apr-13 to 28-May-15
Project Investigator(s): Prof. Ajit P. Annachhatre
Sponsor: UNESCO-IHE Partnership Research Fund (UPaRF), The Netherlands
Total Contracted Amount (THB): 156,000

Investigating the Impact of Effective Microorganisms on Health/Ecology and Water Safety Plans

Duration: 1-Jun-12 to 31-Dec-15
Project Investigator(s): Dr. Oleg Shipin
Sponsor: WHO, SEARO
Total Contracted Amount (THB): 316,200

Investigation and Optimization of TEG Waste Minimization System for Real Application

Duration: 1-May-14 to 30-Apr-15
Project Investigator(s): Prof. C. Visvanathan
Sponsor: Participants
Total Contracted Amount (THB): 1,000,000

Outreach on Environmentally Sound Treatment of Hazardous Chemicals in Asia

Duration: 1-Jul-11 to 31-Jul-15
Project Investigator(s): Prof. Nguyen Thi Kim Oanh
Sponsor: The Norwegian Ministry of Foreign Affairs

Total Contracted Amount (THB): 9,291,686

Professional Masters in Environmental Engineering and Management Batch III

Duration: 1-May-14 to 31-Dec-16
Project Investigator(s): Prof. Nguyen Thi Kim Oanh
Sponsor: Multi donors
Total Contracted Amount (THB): 2,169,000

Stimulating Local Innovation on Sanitation for the Urban Poor in Sub-Saharan and Southeast Asia

Duration: 8-Feb-12 to 16-Jun-16
Project Investigator(s): Dr. Thammarat Koottatep
Sponsor: Bill & Melinda Gates Foundation
Total Contracted Amount (THB): 26,124,360

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-Nov-15
Project Investigator(s): Dr. Thammarat Koottatep
Sponsor: United Nations Economic and Social Commission for Asia and the Pacific (ESCAP)
Total Contracted Amount (THB): 1,159,308.90

Study of Ground-level Ozone in Bangkok Metropolitan Region by Advance Mathematical Modeling for Air Quality Management

Duration: 1-Oct-12 to 31-Jul-15
Project Investigator(s): Prof. Nguyen Thi Kim Oanh
Sponsor: Petroleum Authority of Thailand (PTT) Public Company Limited
Total Contracted Amount (THB): 1,797,600

Sustainability Issues due to Coal Ash from Coal fired Power Plants

Duration: 1-Sep-10 to 31-Aug-15
Project Investigator(s): Prof. Ajit P. Annachhatre

Sponsor: SDCC AIT France Network
Total Contracted Amount (THB):
1,800,000

Sustainable Wastewater Management in Decentralized Developing Countries

Duration: 15-Oct-11 to 16-Jun-16
Project Investigator(s): Dr. Thammarat Koottatep
Sponsor: Bill & Melinda Gates Foundation
Total Contracted Amount (THB):
149,991,660

The National Centre of Competence in Research (NCCR) North-South

Duration: 2002 to 31-Dec-15
Project Investigator(s): Dr. Thammarat Koottatep
Sponsor: NCCR North-South Center for Development and Environment, Switzerland
Total Contracted Amount (THB):
40,817,025.79

Turning Rice Straw into Cooking Fuel for Air Quality and Climate Co-benefit in Selected GMS Countries

Duration: 15-Dec-14 to 31-Aug-16
Project Investigator(s): Prof. Nguyen Thi Kim Oanh
Sponsor: Multi donors
Total Contracted Amount (THB):
1,920,000

Making the Mekong Connected: Developing carbon and multidiversity assets for multifunctional landscapes in upper Mekong

Duration: 1-Mar-09 to 30-June-2015
Project Investigator(s): Rajendra P.Shrestha
Sponsor: World Agroforestry center
Total Contracted Amount (THB): 2,187,588

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

Making the Mekong Connected: Developing carbon and multidiversity assets for multifunctional landscapes in upper mekong

Duration: 1-Mar-09 to 31 August 2015
Project Investigator(s): Rajendra P.Shrestha
Sponsor: World Agroforestry center
Total Contracted Amount (THB):
2,187,588

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

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-Dec-16
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 Forestry

Duration: 15-Jul-09 to 31-Dec-16

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-Jun-2013 to 31-Dec-2016
Project Investigator: Dr. Clemens Grunbuhel
Sponsor: ACIAR
Total Contracted Amount (THB):
16,449,382

Professional Master's Program (PM-UM1) AITVN

Duration: 1-Apr-2012 to 30-Apr-2015
Project Investigator(s): Dr. Vilas Nitivattananon
Sponsor: Government Officials, private individuals
Total Contracted Amount (USD):
323,035

Professional Master's Program (PM-UM2) AITVN

Duration: 1-Jan-2014 to 31-July-2015
Project Investigator(s): Dr. Vilas Nitivattananon
Sponsor: Government Officials, private individuals
Total Contracted Amount (USD):
139,700

Community Based Low Carbon Tourism Development in Designated Areas

Duration: 1-Mar-2014 to 28-Feb-2015
Project Investigator(s): Dr. Vilas Nitivattananon
Sponsor: Tourism Authority (DASTA)/SIIT
Total Contracted Amount (THB):
500,000

Managing Water Resources and Land Use for People's Livelihood in Peri-Urban areas of South Asian region

Duration: 1-Nov-2014 to 30-Mar-2015
Project Investigator(s): Dr. Sohee Minsun Kim
Sponsor: Office of the VPAA, AIT
Total Contracted Amount (THB): 49,000

3.2.4 Publications

Patent

Mr. Tatchai Pussayanavin, **Dr. Thammarat Koottatep**, Prof. Chongrak Polprasert, Mr. Boonmee Boonyapalanant, "Enhanced sludge reduction in septic tank by increasing temperature" Department of Intellectual Property, Thailand, 7 March 2014.

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Chapter 3.3: Energy

3.3.1 Introduction

Asia drives global economy and its influence is expected to only rise. Faster growth needs greater energy sources to sustain it. In the last decade, energy demand growth trends are already shifting decisively away from OECD countries and to Asia. While energy resources itself might not be of too much problem at global and regional scale, the accessibility, distributional aspect, and infrastructure for energy sources and key energy carriers are key problems for Asia which requires to deliver energy services at a reasonable cost and with least implications to the environment. For these reasons Asia needs a better energy transition to next decades characterized by universal energy access, least cost energy services, enhanced energy security and least pollution. This transition must also dampen the energy demand which necessitates better energy efficiency and the lifestyle choices. This theme represents the publication and project AIT has done significant research in the area of energy and the listing of the projects and publications are provided. The sections below are further divided into Research Projects and Publications. Projects are subdivided into ongoing projects and completed projects in 2014. The Publication comprises of Book and chapters, International refereed papers in journals and conferences, Patents, other academic and outreach activities

3.3.2 Grants and Sponsored Research Completed in 2014

Preparation of the country specific issue papers on

renewable-powered micro-grid/minigrid generation system

Duration: 24-Dec-2012 to 30-Jun-2014

Project Investigator(s): J G Singh, P Abdul Salam

Sponsor: IRENA

Total Contracted Amount (THB): 241,940

Capacity Development of the Assam Power Sector Utilities, Overseas Study Tour in Bangkok

Duration: 1-Oct-2012 to 30-Jun-2014

Project Investigator(s): J G Singh

Sponsor: Energy Division, South Asia Department, ADB

Total Contracted Amount (THB): 294,900

Provincial Electricity Authority (PEA)-AIT Cooperation Project

Duration: 1-Jan-2009 to 31-Dec-2014

Investigator: Dr. Weerakorn Ongsakul

Sponsor: Provincial Electricity Authority (PEA), Thailand

Total contracted amount (THB): 27,374,000

Partnership for Market Readiness

Duration: 1-Mar-2013 to 31-May-2014

Investigator: Prof. S. Kumar and Dr. Abdul Salam

Sponsor: TGO (Thailand

Greenhouse Gas Management)

Total contracted amount (THB): 180,000

ICUE 2014-Green Energy for Sustainable Development International Conference

Duration: 1-Jun-2013 to 31-Dec-2014

Investigator: Dr. Shobhakar Dhakal

Sponsor: Registration revenues/sponsorships/grants

Total contracted amount (THB): 1,859,790

Sustainable Mekong Research Network II

Duration: 10-Aug-2013 to 31-Jan-2014

Investigator: Prof. Sivanappan Kumar and Dr. Kyoko Kusakabe

Sponsor: Stockholm

Environment Institute (SEI)

Total contracted amount (THB): 232,000

Subnational Climate Compatible Development Project

Duration: 1-Jun-2013 to 30-Jun-2014

Investigator: Prof. Sivanappan Kumar and Dr. Kyoko Kusakabe

Sponsor: CDKN-ICLEI

Secretariat GmbH

Total contracted amount (THB): 665,400

AIT green campus Initiatives project support -Electrical Energy

Duration: 01-Feb-2014 to 30-Sep-2014

Project Investigators Dr J G Singh

Sponsor ADEME, France

Total Contracted Amount (THB): 100,000

Testing and Training on Improved Cookstoves

Duration: 19-Sep-2014 to 15-Dec-2014

Project Investigators Dr P Abdul Salam

Sponsor UNDP-Bhutan

Total Contracted Amount (THB): 240,000

Professional Master in Energy Business Management (PMEBM)

Duration: 1-Sep-2012 to 31-Dec-2014

Investigator: Prof. Nazrul Islam and Dr. P. Abdul Salam

Sponsor: World Bank (EDMAT)
Total contracted Amount [THB]: 9,990,728

King HRD Scholarship Project

Duration: 1-Oct-2009 to 31-Dec-2014
Investigator: Dr. Weerakorn Ongsakul
Sponsor: Energy Planning and Policy Office (EPPO), Thailand
Total contracted Amount [THB]: 12,753,200

3.3.3 On-going Grants and Sponsored Research

Energy Publications Project

Duration: 1-Jan-2013 to 31-Dec-2017
Investigator: 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

AIT's Green Campus Initiatives

Duration: 1-Dec-2013 to 30-Jun-2015
Investigator: Prof. Sivanappan Kumar and Prof. C. Visvanathan
Sponsor: ADEME, France
Total contracted amount (THB): 2,200,000

Urban Energy Access in Myanmar: Knowledge and Outreach

Duration: 4-Nov-2013 to 31-Jun-2015
Investigator: Prof. S. Kumar and Dr. Abdul Salam
Sponsor: Global Network on Energy for Sustainable Development (GNESD)
Total contracted amount (THB): 980,000

Understanding and Quantifying the Water-Energy-Carbon Nexus for Low Carbon Development in Asian Cities

Duration: 3-Jun-2013 to 30-Jun-2015
Investigator: Dr. Shobhakar Dhakal
Sponsor: APN, Japan
Total contracted amount (THB): 2,337,400

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

IEEE Innovative Smart Grid Technologies 2015, International conference

Duration: 01-Oct-2014 to 31-Jan-2016
Project Investigators Dr Weerakorn Ongsakul
Sponsor Registration revenues/sponsorship/grants
Total Contracted Amount (THB): 797,851

Engendering livable low carbon smart cities in ASEAN as in inclusive green growth model and the opportunities for regional cooperation

Duration: 01-Nov-2014 to 01-Sep-2015
Project Investigators Prof. S. Kumar
Sponsor Asean economic Institute for ASEAN and East Asia (ERIA)
Total Contracted Amount (THB): 256,000

Assignment on technology adaptation and national capacity building for climate technology centre and network (CTCN) in Thailand

Duration: 22-Aug-2014 to 21-Mar-2015
Project Investigators Dr Sobhakar Dhakal, Dr P Abdul Salam, Prof. S. Kumar
Sponsor IGES-Japan
Total Contracted Amount (THB): 1,200,000

Capacity building on climate change mitigation for Bhutan

Duration: 01-Nov-2014 to 30-Mar-2015
Project Investigator Dr P Abdul Salam, Prof S Kumar, Dr Sobhakar Dhakal

Sponsor National Environment commission Bhutan
Total Contracted Amount (THB): 1,088,000

Assessment of Potential use of EFB Fly Ash

Duration: 01-Sep-2014 to 31-Aug-2015
Project Investigator Dr P Abdul Salam, Dr Avishek Datta
Sponsor Valmet Co Ltd, Thailand
Total Contracted Amount (THB): 856,000

3.3.4 Publications

Book Chapters

Kumar S., Kusakabe Kyoko, Pradhan Pravakar, Shrestha Pujan, Srujana Goteti, Tran Anh Tuan, Ekawit Meteejaroenwong, Trinnawat Suwanprik, Khanh Linh, "Greenhouse Gas Emissions from Tourism Service Providers: Case Studies in Chiang Mai, Thailand and Hue, Vietnam", in "Livelihoods, Ecosystem Services and the Challenges of Regional Integration in the Mekong Region", edited by Louis Lebel, Chu Thai Hoanh, Chayanis Kittasudthacheewa and Rajesh Daniel, and published by Strategic Information and Research Development Centre (SIRD), Selangor, Malaysia. 2014

Seto K. C., **Dhakal S.,** A. Bigio, H. Blanco, G. C. Delgado, D. Dewar, L. Huang, A. Inaba, A. Kansal, S. Lwasa, J. E. McMahon, D. B. Müller, J. Murakami, H. Nagendra, and A. Ramaswami, 2014: Human Settlements, Infrastructure and Spatial Planning. In: Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Edenhofer, O., R. Pichs-Madruga, Y. Sokona, E. Farahani, S. Kadner, K. Seyboth, A.

Adler, I. Baum, S. Brunner, P. Eickemeier, B. Kriemann, J. Savolainen, S. Schlömer, C. von Stechow, T. Zwickel and J.C. Minx (eds.)). Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

Kumar S. and Amandeep Sangha, Innovative Pedagogies for poverty reduction, in “Prosper.Net: Transforming higher education and creating sustainable societies”, Edited by Aurea Christine Tanaka and Mario Tabucanon, UNU-IAS, Japan, 118-127, 2014

International refereed Journals

Prasartkaew, Boonrit and **Kumar. S.** (2014) Design of a Renewable Energy Based Air-conditioning System, *Energy and Buildings*, 68, Part A, 156-164, January 2014. (IF: 6.679)

Singh, Jai Govind, Thakurta, Priyanko Guha and Soder, Lennart. Load Curtailment Minimization by Optimal Placement of SVC, *International Transactions on Electrical Energy Systems*, September 2014. (ISI IF: 0.654)

Udomsirichakorn, Jakkapong, Basu, Prabir, **Salam, P. Abdul** and Acharya, Bishnu Acharya. (2014) CaO-based chemical looping gasification of biomass for hydrogen-enriched gas production with in situ CO₂ capture and tar reduction. *Fuel Processing Technology*. Vol. 127 (2014), pp 7-12.

Udomsirichakorn, Jakkapong and **Salam, P. Abdul**. Review of hydrogen-enriched gas production from steam gasification of biomass: The prospect of CaO-based chemical looping gasification. *Renewable and Sustainable Energy Review*. Vol.30 (2014), pp 565 -579.

Martchamadol, Jutamanee and **Kumar, S.** The Aggregated Energy Security Performance Indicator (AESPI) at National and Provincial

Level, *Applied Energy*, 127, 219-238, May 2014. (IF: 4.781)

Kyoko Kusakabe, Pujan Shrestha, **Kumar, S.** and Khanh Linh Nguyen, Pathways to sustainable urban tourism: garden houses in Hue, Vietnam, *International Journal of Sustainable Society*, (accepted for publication), May 2014.

Uddin, Md. Shazib and **Kumar, S.**, Energy, Emissions and Environmental Impact Analysis of Wind Turbine Using Life Cycle Assessment Technique, *Journal of Cleaner Production*, 69, 153 -164, 2014. (IF: 3.5)

Noipin, Kate Natee and **Kumar, S.**, Optimization of Ethyl Ester Production from Palm Oil, *Ultrasonic Sonochemistry*, 22, 548 – 558, 2014. (IF: 3.816)

Pooyoo N, **Kumar, S.**, J. Charoensuk, Suksangpanomrung, A.. Numerical simulation of cylindrical heat pipe considering non-Darcian transport for liquid flow inside wick and mass flow rate at liquid-vapor interface, *International Journal of Heat and Mass Transfer*, 70, 965 – 978, 2014. (IF: 2.522)

Phutthard Vicharnakorn, Rajendra P. Shrestha, Masahiko Nagai, **Salam P. Abdul** and Somboon Kiratiprayoon. Carbon Stock Assessment Using Remote Sensing and Forest Inventory Data in Savannakhet, Lao PDR. *Remote Sensing*. 2014, 6, 5452-5479; doi: 10.3390/rs6065452.

Charoenk, Sasima and **Kumar, S.**, Environmental Sustainability Assessment Tools for Low Carbon and Climate Resilient Low Income Housing Settlements. *Renewable & Sustainable Energy Reviews* (38), accepted for publication, June 2014. (Impact Factor: 5.510)

Ongsakul, Weerakorn, Dieu, Vo Ngoc, Le, Dung Anh, “Stochastic

Weight Trade-Off Particle Swarm Optimization for Optimal Power Flow” *Journal of Automation and Control Engineering*, Vol 2, 2014.

Polprasert, Jirawadee, **Ongsakul, Weerakorn**, Dieu, Vo Ngoc, “Security Constrained Optimal Power Flow Using Self-Organizing Hierarchical PSO with Time-Varying Acceleration Coefficients”, *Global Journal of Technology & Optimization*, Vol 5, 2014.

Prommee, Witton, **Ongsakul, Weerakorn**, “Optimal Multiple Protective Devices Placement for Microgrid Distribution System by Improved Binary Multi-Objectives Particle Swarm Optimization”, *International Transactions on Electrical Energy Systems*, 2014.

Noipin, Kate Natee, **Kumar, S.**, “Optimization of Ethyl Ester Production from Palm Oil”, *Ultrasonics Sonochemistry*, Vol 22, 2014, Impact Factor: 3.816

Conference proceedings

Chaweewat, P.; **Singh, J.G.**; **Ongsakul, W.**; Srivastava, A.K., Synchronization control and droop control of microgrid operation, *International Conference and Utility Exhibition on Green Energy for Sustainable Development (ICUE)*, 19-21 March 2014.

Grewal, G.S.; Rajpurohit, B.S.; **Singh, J.G.**, Energy management in Steel rolling plant, *International Conference and Utility Exhibition on Green Energy for Sustainable Development*, 19-21 March 2014.

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Das, Karabee and **Salam P. Abdul**. Development of a Generic Methodology for Assessment of Microalgae Cultivation Potential Using GIS. International Conference and Utility Exhibition on Green Energy. 19-21 March 2014. Pattaya, Thailand.

Man-Im, A; **Ongsakul, W.; Singh, J.G.**; Boonchuay, C., Multi-objective economic dispatch considering wind generation uncertainty using non-dominated sorting particle swarm optimization, *International Conference and Utility Exhibition on Green Energy for Sustainable Development (ICUE)*, 19-21 March 2014.

Mohanty B. , Methods and tools to assist in designing and implementing urban energy and climate policy in France, Singapore-France Joint Seminar on Integrated Urban Development, 3-12 November 2014, Singapore

Mohanty B., Current efforts to achieve resource efficiency through the next wave of innovation, Regional seminar on innovative technology for excellence in engineering, 11 October 2014, Colombo

Mohanty B., Managing Resources: Integrated approach to energy and water conservation, AIT Green Technology Workshop 2014, AIT Consulting, 28-29 August 2014, Bangkok.

Mohan, V.; Madhu, N.; **Ongsakul, W.; Singh, J.G.**; Reshma Suresh, M.P. Design of strategic information in the deregulated Indian power market: An agent-based approach. *International Conference and Utility Exhibition on Green Energy for Sustainable Development (ICUE)*, 19-21 March 2014.

Wongwantanee, Nachapol, **Singh Jai Govind** and Rajpurohit Bharat Singh. Generation Cost and Loss Power Minimization in Intentional Islanded Networks Based on BPSO. 6th IEEE Power India International Conference 2014, 5-7 December 2014, New Delhi, India.

Pisanupoj, S.; **Ongsakul, W.; Singh, J.G.** Potential of smart grid in Thailand: A development of WADE smart grid model. *International Conference and Utility Exhibition on Green Energy for Sustainable Development (ICUE)*, 19-21 March 2014.

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Chapter 3.4: FOOD

3.4.1 Introduction

Global food system today is beset by serious challenges and risks. Food demand is on rise due to population growth and changing consumption patterns; production and prices have become more volatile; hunger and poverty levels remain high and unsustainable practices exacerbate environmental challenges. Agriculture is increasingly called upon to address a wide range of critical needs; safe and nutritious food for nine billion people by 2050; and higher and more resilient incomes for livelihoods. The fundamental needs 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 agriculture is challenged by accelerating climate change. World food production needs to be multifold in coming decades, with far less resources (land, water, farmers, energy) available than today. Sustainable agricultural production in developing countries is facing ever increasing challenges from high use rate of synthetic fertilizers, over reliance on pesticides, very low adoption of biological pest control, low use rate of animal and green manure, and low level of farm diversification. To address these issues the conventional intensification solutions need to be re-visited for their unsustainable effects; and rather more sustainable yet appropriate solutions need to be prescribed in the decades to come to attain self-sufficiency in food production. The sections below are further divided into Research Projects and Publications. Projects are subdivided into ongoing projects and completed projects in 2014. The Publication comprises of

The

Book and chapters, International refereed papers in journals and conferences, Patents, other academic and outreach activities

3.4.2 Grants and Sponsored Research Completed in 2014

Short-term training/internship program on agribusiness and agro-industries

Duration: 1-Aug-11 to 31 Dec-2015

Project Investigator(s): Peeyush Soni

Sponsor: Sam Higginbottom Institute of Agriculture, Technology and Sciences, India

Total Contracted Amount (THB):

1,482,562

Taking Stock of How Smart Food Production Can Reduce Food Losses and GHG Emission (Smart Food Processing)

Duration: 1-Dec 13 – 30 June 14

Project Investigator(s): Dr. Anil Kumar Anal

Sponsor: FAO (Food and Agriculture Organization)

Total Contracted Amount (THB):

480,000

Laboratory Training Program in Food Engineering

Duration: 24-Sept-13 - 31-Jan-14

Project Investigator(s): Dr. Anil Kumar Anal and Mr. Imran Ahmad

Sponsor: Sultan Qaboos University, Oman

Total Contracted Amount (THB): 63,320

Internship in Aquaculture and Aquatic Resources Conservation

Duration: 1-Sep-10 to 31-Dec-14

Project Investigator(s): Ram C. Bhujel

Sponsor: Multi donors

Total Contracted Amount (THB): 7,941,535

3.4.3 On-going Grants and Sponsored Research

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

Promoting participatory homestead sustainable vegetable production to AIT community

Duration: February 2014–July 2015

Project Investigator(s): Avishek Datta and Anil Kumar Anal

Sponsor: French Agency for Environment and Energy Management, France

Total Contracted Amount (THB):100,000

Assessment of empty fruit bunches (EFB) fly ash as fertilizer

Duration: 1-Sep 2014–31-Jul 2015

Project Investigator(s): Abdul Salam and Avishek Datta

Sponsor: Valmet Private Ltd., Chonburi, Thailand

Total Contracted Amount (THB):856,000

Capacity building for the Moeyingyi wetland conservation in Myanmar in the context of climate change

Duration: January 2014–December 2015

Project Investigator(s): Sangam Shrestha and Avishek Datta

Sponsor: Ramsar Convention Secretariat, Switzerland

Total Contracted Amount (THB): 1,246,050

Horticulture Collaborative Research Support Program (Ph.D.)

Duration: 15-Nov-2011 to 15-Jul-2015

Project Investigator(s): Ganesh P. Shivakoti

Total Contracted Amount (US\$): 96,051

Sustain and Enhance Cooperation on Sustainable Development Research for Local Resource Utilization and Efficiency.

Duration: 1-Jul -13 – 30 June 16
Project Investigator(s): Dr. Anil Kumar Anal

Sponsor:SUSTAIN EU-ASEAN
Total Contracted Amount (THB):2,469,810

The Effect of Shrimp Waste Fermented Products on Growth and Disease Protection of Rice and Chili.

Project Investigator(s): Dr. Anil Kumar Anal, Dr. Rostaman, Dr. Budi Prakoso and Dr. Trang Si Trung
Duration: April 2012- March 2015
Sponsor:Govt of Indonesia
Total Contracted Amount (THB): 900,000 (30,000 US\$)

EU-ASEAN Science and Technology Cooperation to Jointly Tackle Societal Challenges (SEA-EU-NET2)

Duration: 1-Nov-2012 to 31-Oct-2016
Project Investigator(s): Anil Kumar Anal, P.Abdul Salam, Sangam Shrestha
Sponsor;European Union FP7
Total Contracted Amount (THB): 8,779,888

Development of low cost microfluidic sensing platforms for point of care food safety

Duration: 01-Dec-2014 to 01-May-2015
Project Investigators Loc T Nguyen
Sponsor AIR reasearch initial grant
Total Contracted Amount (THB): 50,000

Internship and training at FEBT

Duration: 01-May-2014 to 31-May-2015
Project Investigators Dr Anil Kumar Anal
Sponsor various
Total Contracted Amount (THB): 71,823.65

AIT green campus Initiatives project support -FOOD

Duration: 01-Feb-2014 to 30-Sep-2014
Project Investigators Dr Anil Kumar Anal, Dr Avishek Datta
Sponsor ADEME, France

Total Contracted Amount (THB): 100,000

Laboratory training program instrumentation and advanced technology

Duration: 24-Nov-2014 to 30-Jan-2015
Project Investigators Dr Anil kumar Anal, Imran Ahmad
Sponsor
Total Contracted Amount (THB): 74,431

Development of low-cost microfluidic sensing platforms for point-of-care food safety.

Duration: December 2014 – July 2015
Project Investigator(s): Dr. Loc Thai Nguyen
Sponsor: AIT Research Initiation Grant
Total Contracted Amount (THB): 50,000.00

Capacity Development in Fisheries/ Aquaculture for Sustainable Food Security and Livelihoods Programme in Rakhine state of Myanmar

Duration: 01-Jan-2014 to 31-Dec-2015
Project Investigators Dr Ram C Bhujel
Sponsor OXFAM, GB
Total Contracted Amount (THB): 3,200,000

Aqua culture development through Training, outreach and consultancy

Duration: 01-Nov-2014 to 31-Dec-2016
Project Investigator Dr Ram C Bhujel
Sponsor Trainess students Pvt Companies and public companies
Total Contracted Amount (THB): 5,845,500

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

Studying patterns of genetic diversity in Farmed red tilapia strains

Duration: 01-Dec-2014 to 30-Dec-2015
Project Investigators Dr. K R Salin

Sponsor Uddaraju Ananda Raju Foundation Ananda Group Andhra Pradesh, India
Total Contracted Amount (THB): 160,000

Evaluation of genetic quality tilapia stocks farmed in ait

Duration: 01-Dec-2014 to 30-Jul-2015
Project Investigators Dr. K R Salin
Sponsor AIT
Total Contracted Amount (THB): 50,000

Development of Rural Aquaculture through Entrepreneurship in Women, in Myanmar

Duration: 1 Jan-13 – 31-Dec-15
Project Investigator:Dr. Ram C. Bhujel
Sponsor: Ministry of Foreign Affairs, the Government of Italy, in partnership with the University of Tuscia (UoT)- Italy and the Environmental and Economic Research Institute (EERI) - Myanmar
Total Contracted Amount: 117,533 EUROS

Aquaculture Development

Duration: 1-Jan-15 – 31-Dec-15
Project Investigator(s):Dr. Ram C. Bhujel
Sponsor: University students, Private farms, NGOs, Government Agencies
Total Contracted Amount (THB):1,486,701

3.4.4 Publications

Book

Mrema, Geoffrey C. Soni Peeyush and Rolle Rosa (2014). "A REGIONAL STRATEGY FOR SUSTAINABLE AGRICULTURAL MECHANIZATION: SUSTAINABLE MECHANIZATION ACROSS AGRI-FOOD SUPPLY CHAINS IN ASIA AND THE PACIFIC REGION". FAO of the United Nations – Regional Office for Asia and the Pacific (FAO-RAP). RAP Publication 2014/24. ISBN: 978-92-5-108676-6

A.Noormhorm, I. Ahmad, A. K. Anal; Functional Foods and Dietary Supplements: Processing Effects and Health Benefits; Wiley-Blackwell, John Wiley and Sons Ltd. (2014).

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Use of Statistical Downscaling and Water Planning Tools. In: Shrestha, S., **Anal, A.K.**, Salam, A.P., Valk, M. (2014). Managing Water Resources under Climate Uncertainty: Examples from Asian and Europe.

Book Chapters

Fennimore SA, Hanson BD, Sosnoskie LM, Samtani JB, **Datta A**, Knezevic SZ, Siemens MC. (2014). Field Applications of Automated Weed Control: Western Hemisphere. In: SL Young, FJ Pierce (Eds.), Automation: The Future of Weed Control in Cropping Systems. 2014, XIII, pp. 151–169. Springer, ISBN 978-94-007-7512-1

Noomhorm A., Anal Anil K., and I. Ahamd; Functional Foods, Nutraceuticals and Probiotics as Functional Food Components; In: Functional Foods and Dietary Supplements: Processing effects and Health Benefits: A. Noomhorm, I. Ahmad and A.K. Anal (Eds) Wiley-Blackwell, John Wiley and Sons. Ltd., ; pp 3-20; 2014

K. K. Kumaree, M. Thapa, **Anal A. K.**; Bioactive Components in Foods: In: Functional Foods and Dietary Supplements: Processing effects and Health Benefits: A. Noomhorm, I. Ahmad and A.K. Anal (Eds) Wiley-Blackwell, John Wiley and Sons. Ltd., pp 21-62; 2014

N. K.M. Alparce, **Anal A. K.**; Food Processing By-products as Functional Foods and Nutraceuticals; In: Functional Foods and Dietary Supplements: Processing effects and Health Benefits: A. Noomhorm, I. Ahmad and A.K. Anal (Eds) Wiley-Blackwell, John Wiley and Sons. Ltd. Pp 159-186. 2014

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Tuladhar Alisha and **Anal Anil K.**; Recent Advances in Applications of Encapsulation Technology for the Bioprotection of Phytonutrients in Complex Food Systems; In: Functional Foods and Dietary Supplements: Processing effects and Health Benefits: A. Noomhorm, I. Ahmad and A.K. Anal (Eds) Wiley-Blackwell, John Wiley and Sons. Ltd., pp 363-386. 2014

Tanaka A.C., Doll C.N.H., Dalton T., Y., Suzuki M. Hapsari, H. Kusnanto, **Anal Anil K.**, R. Dornsawasdi and B. Pulpoka; ProSPER.Net Young Research School: Building Research Capacity for Sustainable Development; In: ProSPER.Net: Transforming Higher Education and Creating Sustainable Societies; Aurea C. Tanaka and Mario Tabucanon (Eds); UNU-IAS Japan pp 127-144 (2014)

Nguyen, Ha H.H, **Nguyen, Loc T**, “Carrot Processing”, Handbook of Vegetable Preservation and Processing, CRC Press

International Journal Articles with Impact factor

Ranamukhaarachchi SL. (2014). Factors determining adoption of integrated pest management by vegetable growers in Nakhon Ratchasima Province, Thailand. Crop Protection 62:32–39. Publisher: Elsevier, [Impact Factor: 1.539]

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H, Jung, R.E, Lyons, Y, Li, N.M, Thanh, H, Ding, D.A, Hurwood, **Salin K.R.**, , P.B, Mather, 2014,” A Candidate Gene Association Study for Growth Performance in an Improved Giant Freshwater Prawn (*Macrobrachium rosenbergii*) Culture Line ” Marine Biotechnology, Vol 16, 2014.

Nair, C.M., **Salin, K.R.**, Joseph, J., Aneesh, B., Geethalakshmi, S 2014., New, M.B. Organic rice-prawn farming yields 20% higher revenues. *Agronomy for Sustainable Development*, Vol 34(3), 569-581. 2014.

Hurwood, D.A., Dammanagoda, S., Krosh, M.N., **Salin, K.R.**, Youssef, A-B-H 2014., de Bruyn, M., Impacts of climatic factors on evolution of molecular diversity and natural distribution of wild stocks of the Giant Freshwater Prawn (*Macrobrachium rosenbergii*), *Freshwater Science*, Vol 33(1), 217-231, 2014.

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Ryadin, Aisjah Rachmawaty, Ranamukaarachchi, S. L., **Soni, Peeyush** and Shrestha, Rajendra P. (2014). “Vegetative Propagation of Five Local Cultivars of Malay Apple (*Syzygium malaccense* spp.) in Ternate Island”. International Journal on Advanced Science, Engineering and Information Technology, 4 (2): 35-39. Publisher: INSIGHT - Indonesian Society for Knowledge and Human Development, ISSN: 2088-5334

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Imtiyaz, Hena and **Soni, Peeyush** (2014). Marketing Supply Chain Management of Brinjal: Challenges and Opportunities.

International Journal of Management, 5(2): 116-125. Publisher: International Association of Engineering and Management Education (IAEME). ISSN 0976-6502

Imtiyaz, Hena and **Soni, Peeyush** (2014). Evaluation of Marketing Supply Chain Performance of Fresh Vegetables in Allahabad District, India. International Journal of Management Sciences and Business Research, 3(1): 72-83. Publisher: QS Publisher, UK, ISSN 2226-8235

Suvittawat, Adisak, **Soni, Peeyush, Igel, Barbara** and Khang, Do Ba (2014). "Cassava Root Supply Chain in Nakhornratchasima Province: Challenges and Opportunities for Local Starch Mills" Journal of Food, Agriculture and Environment, 12(1): 332-338. Publisher: WFL [IF: 0.517] ISSN: 1459-0255.

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Chapter 3.5: Water

3.5.1 Introduction

Globally, an estimated 2,000 children under the age of five die every day from diarrheal diseases and of these some 1,800 deaths are linked to water, sanitation and hygiene. Today, 2.5 billion people remain without basic sanitation and at least 748 million people lack access to safe drinking water. Feeding a planet of 9 billion by 2050 will require approximately 50% more water in 2050. More than half of the world's population now lives in urban areas. And the number is growing fast; putting pressures on urban water systems. Currently, 2 billion people live in countries with absolute water scarcity and the number is expected to rise to 4.6 billion by 2080. The thematic area of "water" at AIT broadly covers the following areas: Agricultural Water: Rural water supply and sanitation; Irrigation and drainage, Coastal Water: Protecting vital coastal ecosystems, Urban Water: Urban water supply, sanitation and wastewater management, Water Resources: Water resources development and management; Hydropower; Watershed and wetlands protection, Extreme Events and Risk Management: Floods and droughts; Climate variability and change. The sections below are further divided into Research Projects and Publications. Projects are subdivided into ongoing projects and completed projects in 2014. The Publication comprises of Book and chapters, International refereed papers in journals and conferences, Patents, other academic and outreach activities

3.5.2 Grants and Sponsored Research Completed in 2014

Hydraulic Model Studies of Shweli 3 Hydropower Project, Republic of the Union of Myanmar

Duration: 01-Nov-2012 to 30-Oct-2014

Project Investigator: Arturo G. Roa
Sponsor: AF-Consults Switzerland Ltd., Switzerland

Total Contracted Amount (THB): 5,346,000

Pilot Model Tests of Filter Nozzles

Duration: 19-Nov-2013 to 30-June-2014

Project Investigator Arturo G. Roa
Sponsor: FIRM Products Co. Ltd., Thailand

Total Contracted Amount (THB): 215,832

Hydraulic Model Study of Terminal Chute for Downstream Fish Migration, Xayaburi Hydroelectric Power Project, Lao PDR

Duration: 1-Nov-2013 to 30-April-2014

Project Investigators: Arturo G. Roa

Sponsor: TEAM Consulting Engineering and Management Co. Ltd, Thailand

Total Contracted Amount (THB): 1,893,900

Physical Hydraulic Model Study of Xayaburi Hydroelectric Power Project, Lao PDR

Duration: 01-May-2012 to 30-April-2014

Project Investigators: Arturo G. Roa, Sutat Weesakul

Sponsor: TEAM Consulting Engineering and Management Co. Ltd., Thailand

Total Contracted Amount (THB): 6,297,196

Hydraulic Model Study of Side Channel Spillway of Nam Ken for Hongsa Mine Mouth Power Project, Lao PDR

Duration: 01-May-2011 to

Project Investigators: Sutat Weesakul, Arturo G. Roa

Sponsor: Thaiwat Engineering Co. Ltd., Thailand

Total Contracted Amount (THB): 4,250,000

Adaptation to Global Change in Agricultural practices

Duration: 1-Aug-10 to 31-Dec-14
Project Investigator(s): Mukand S. Babel

Sponsor UNESCO IHE Delft Netherlands

Total Contracted Amount (THB): 1,455,840

Hydrology Measurement and Analysis

Duration: 1-Oct-13 to 30-Sep-14

Project Investigator(s): Dr.

Sangam Shrestha

Sponsor: Ministry of Energy and Water, Afghanistan

Total Contracted Amount (THB): 1,033,286

Enhancing the Groundwater management Capacity in Asian Cities through the Development and Application of Groundwater Sustainability Index in the context of Global Change

Duration: 1-Sep-13 to 31-Dec-14

Project Investigator(s): Dr.

Sangam Shrestha

Sponsor: APN, Japan

Total Contracted Amount (THB): 1,338,970

Flood Risk Assessment and Development of a Disaster Risk Mitigation Plan for the Historic City of Ayutthaya

Duration: 01-Dec-2013 to 01-Dec-2014

Project Investigators Dr. Sutat Weesakul

Sponsor UNESCO-IHE

Total Contracted Amount (THB): 750,664.8

3.5.3 On-going Grants and Sponsored Research

Hydraulic model studies of Upper Yeywa hydroelectric power project, Republic of the Union of Myanmar

Duration: 01-July-2014 to 1-July 2016

Project Investigator Arturo G. Roa
Sponsor: Builder's Trading International Co. Ltd, Thailand
Total Contracted Amount (THB): 7,051,300

Hydraulic model study of overflow spillway for Nam Bak 1 Hydroelectric power project, Laos PDR

Duration: 01-Apr-2014 to 30-Dec-2015
Project Investigators Arturo G Roa
Sponsor: Nam Gum 2 Power Company limited, Lao PDR
Total Contracted Amount (THB): 5,546,000

Hydraulic model tests for improving the efficiency of the navigation lock fish migration facilities of Xayaburi hydroelectric power project, Lao PDR

Duration: 10-Oct-2014 to 1-Sep-2015
Project Investigator: Arturo G. Roa
Sponsor: TEAM Consulting Engineering and Management Co. Ltd, Thailand
Total Contracted Amount (THB): 363,500

Pilot Model Tests of Filter Nozzles for Bangkhaen and Mahasawat Water Treatment Plants

Duration: 7-Jun-2013 to 1-Sep-2015
Project Investigator: Arturo G. Roa
Sponsor: ASTRA Marketing Ltd., Thailand
Total Contracted Amount (THB): 363,500

Capacity Delopment of Higher Education on IWRM at CUET

Duration: 1-Sep-13 to 31-Aug-16
Project Investigator(s): Mukand S. Babel
Sponsor: UNESCO-IHE, the Netherlands
Total Contracted Amount (THB): 3,816,280

Capacity Development on Adaptation and Disaster Management of the Water Section related to Climate Change

Duration: 1-Mar-13 to 31-Dec-15
Project Investigator(s): Mukand S. Babel

Sponsor: Wageningen University (WU), The Natherlands
Total Contracted Amount (THB): 2,529,280

Post-doctoral Research Programme on Adaptation to Climate Change (PRoACC2)

Duration: 1-Mar-13 to 28-Feb-15
Project Investigator(s): Prof. Mukand S. Babel
Sponsor: UNESCO-IHE, Delif, The Netherlands
Total Contracted Amount (THB): 1,086,800

Workshop on towards sustainable water and environmental management role of international community and Higher learning institute

Duration: 01-Oct-2014 to 31-Mar-2015
Project Investigators Dr Mukund S Babel
Sponser UNESCO-IHE, The Netherlands
Total Contracted Amount (THB): 400,000

Capacity building of Moeyingyi wetland conservation in Myanmar in the context of climate change

Duration: 01-Jan-2014 to 31-Dec-2015
Project Investigators Dr Sangam Shrestha, Dr Avishek Datta
Sponser Ramsar Conventional secretariat, switzerland
Total Contracted Amount (THB): 1,246,050

Setting up of a hydraulic Laboratory at CUET, Bangladesh

Duration: 01-Jun-2014 to 30-Aug-2015
Project Investigators Prof mukund s Babel
Sponser UNESCO-IHE, The Netherlands
Total Contracted Amount (THB): 814,000

Deeveloping rain forecasting platform in Bangkok

Duration: 01-Jun-2014 to 30-

Jun-2015
Project Investigators Dr Sutat Weesakul
Sponser NECTEC
Total Contracted Amount (THB): 490,000

Prepare extreme and rare events in coastal regions

Duration: 01-Jan-2014 to 31-Dec-2017
Project Investigators Dr Sutat Weesakul
Sponser UNESCO-IHE, The Netherlands
Total Contracted Amount (THB): 1,212,588

Capacity building of Moeyingyi wetland conservation in Myanmar in the context of climate change

Duration: 01-Jan-2014 to 31-Dec-2015
Project Investigators Dr Sangam Shrestha, Dr Avishek Datta
Sponser Ramsar Conventional secretariat, Switzerland
Total Contracted Amount (THB): 1,246,050

3.5.4 Publications

book

Climate Change and Water Resources, Sangam Shrestha, Mukand S. Babel and Vishnu P. Pandey 2014, (CRC Press of Taylor and Francis Group LLC, <http://www.amazon.com/Climate-Change-Resources-Sangam-Shrestha/dp/1466594667>)

Managing Water Resources under Climate Uncertainty: Examples from Asian and Europe, Sangam Shrestha, Anil Kumar Anal, Abdul P. Salam and Dr. Michael van der Valk, 2014 (In press, Springer, Publications, <http://www.springer.com/environment/global+change+climate+change/book/978-3-319-10466-9>)

Climate Change Impacts and Adaptation in Water Resources and Water Use Sectors, Sangam

Shrestha, 2014 (In Press, Springer Publications) <http://www.springer.com/environment/global+change+climate+change/book/978-3-319-09745-9>

Book Chapters

Babel, M.S., Anusart, K., Shinde, Victor R., **Shrestha, S.**, (2014) Water and Energy Nexus: A Case of Bangkok Water Supply System MA1Xfit Bahadir & Andreas Haarstrick, FIVE YEARS OF EXCEED: Sustainable Water Management Braunschweig Germany Beyrich Digitalservice GmbH & Co KG, 38106 Braunschweig, <http://www.exceed.tu-braunschweig.de> ISBN: 978-3-00-046519-2.

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Datta A, **Shrestha S.**, Ferdous Z, Win CC. 2014. Strategies for enhancing phosphorus efficiency in crop production systems. Springer

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Chapter 3.6: INDUSTRY

3.6.1 Introduction

Industry is a major factor in countries regional developments. Industrial revolution has shown abrupt development of world economics. The nation's GDP has had a big influence from industrial production creating jobs and employment and lead to societal development. AIT strength in the theme comes with its rich experience from its engagements with the industrial sector with the development, and implementation of integrated systems. It includes the areas of technology, finance, information, materials, analysis and synthesis, as well as the application of social sciences together with the principles and methods of engineering design to specify, predict, and evaluate the results to be obtained from such industrial processes. There are many current fields of study and programs which are under the umbrella of the theme "Industry"; namely Industrial Engineering and Management, Mechatronics, Microelectronics and Embedded System and the School of Management. The sections below are further divided into Research Projects and Publications. Projects are subdivided into ongoing projects and completed projects in 2014. The Publication comprises of Book and chapters, International refereed papers in journals and conferences, Patents, other academic and outreach activities.

3.6.2 Grants and Sponsored Research Completed in 2014

NSTDA Investorday Award 2013
Duration: 1-Jun-2013 to 31-Mar-2014
Project Investigator (s): Dr. Mongkol Ekpanyapong and Matthew N. Dailey

Sponsor: National Science and Technology Development Agency
Total Contracted Amount (THB): 500,000

MoU between AIT and Univ of Cordilleras

Duration: 1-May-2013 to 1-Apr-2014

Project Investigator (s): Dr. Nitin Afzulpurkar

Sponsor: University of Cordilleras
Total Contracted Amount (THB): 678,600

Automated Traffic Violation Monitoring System for Road Safety (Police Eyes Phase II)

Project Investigator (s): Dr. Mongkol Ekpanyapong

Duration: June 2012-December 2013

Sponsor: National Science and Technology Development Agency
Total Contracted Amount (THB): 1,360,000

DTNC-CAST: A DTN-NC overlay service for many-to-many bulk file dissemination among OLSR-driven mobile ad hoc network partitions for disaster emergency responses", Sponsor (s): CISCO (through the Silicon Valley Community Foundation),
Duration: 1 Feb 2012 to 31 Jan 2013

Project investigator (s): Dr. Apinun (IntERLab), Dr. Mongkol Ekpanyapong (ISE), Dr. Mahtab (IntERLab)

Total Contracted Amount (THB): 1,600,000

Car talk as a Service (CaaS)

Sponsor (s): NSTDA

Duration: 18 June 2012 to 17 June 2013

Project Investigator (s): Professor Kanchana, Dr. Teerapat (TC), Dr. Donya (SOM), Dr. Apinun (IntERLab), Dr. Mongkol

Ekpanyapong (ISE), Dr. Saroch (KU), Dr. Wasan (NECTEC), Dr. Ravipat (NECTEC).

Total Contracted Amount (THB): 1,890,000

Life Cycle Assessment Fine Paper

Duration: June 2008-May 2013

Project Investigators Erik L.J.

Bohez

Sponsor Double A

Total Contracted Amount (THB): 1,275,000

Project on Human Resource Development in Multi-Axis CNC Machining for EGAT

Duration: February 2007-May 2013

Project Investigators Erik L.J. Bohez

Sponsor Electricity Generating Authority of Thailand

Total Contracted Amount (THB): 750,000

DBA Program in Bangkok 2008

Duration: 1-Jan-2008 to 31-Dec-2014

Project Investigator(s): Nicholas Dimmit, Do Ba Khang, Sundar Venkatesh, Sununta Siengthai, Nazrul Islam, Lalit Johri

Sponsor: Participants

Total Contracted Amount (THB): 16,848,000

DBA Program in Taiwan 2007

Duration: 1-Nov-2007 to 31-Dec-2014

Project Investigator(s): Indra Pandey, Nicholas Dimmit, Freidric Swirczek, Do Ba Khang, Sundar Venkatesh, Sununta Siengthai, Nazrul Islam, Ilkka Kauranen

Sponsor: Participants

Total Contracted Amount (THB): 14,025,000

DBA Program in HCMC 2007

Duration: 1-Feb-2007 to 31-Jan-2014

Project Investigator(s): Indra Pandey, Nicholas Dimmit, Freidric Swirczek, Do Ba Khang, Sundar Venkatesh, Sununta Siengthai, Nazrul Islam, Illka Kauranen

Sponsor: Participants

Total Contracted Amount (THB): 14,000,000

DBA Program in Bangkok 2007

Duration: 1-Feb-2007 to 31-Jan-2014

Project Investigator(s): Indra Pandey, Nicholas Dimmit, Freidric Swirczek, Do Ba Khang, Sundar Venkatesh, Sununta Siengthai, Nazrul Islam, Illka Kauranen

Sponsor: Participants

Total Contracted Amount (THB): 19,440,000

3.6.3 On-going Grants and Sponsored Research

Automated rice dropping system for reduction and productivity improvement in farming

Duration: 1-Aug-13 to 31-Aug-14

Project Investigator(s): Dr.

Mongkol Ekpanyapong

Sponsor: Agricultural Research Development Agency (ARDA)

Total Contracted Amount (THB): 812,480

The Development of Capacitance instrument, Capacitor bank Placement equipment and corrective maintenance from capacitance value capacitor unit

Duration: 01-Jan-2014 to 07-Jan-2015

Project Investigators Dr. Mongkol Ekpanyapong, Dr Manukid Parnichkun

Sponsor EGAT

Total Contracted Amount (THB): 1,606,500

Feasibility Study to industrialise direct rice seeding machines

Duration: 06-10-2014 to 05-10-

2015

Project Investigators Mongkol Ekpanyapong

Sponsor agricultural research development agency

Total Contracted Amount (THB): 3,867,710

Development of a Leg Exo Skeleton Robot for walking Rehabilitation Project

Duration: 01-Oct-2014 to 30-Sep-2016

Project Investigators Dr Manukid Parnichkun

Sponsor: TCELS

Total Contracted Amount (THB): 1,496,000

Development of Imbalance Monitoring and Balancing Control System for Two-Wheel Vehicle

Duration: 2011-Dec 15

Project Investigator (s): Manukid Parnichkun

Sponsor: National Science and Technology Development Agency

Total Contracted Amount (THB): 1,991,000

Master Degree in HDD Engineering Technology #5

Duration: 01 Jul 11 – 30 June 2015

Project Investigator(s): Nitin Afzulpurkar

Sponsor: Western Digital Co. Ltd.

Total Contracted Amount (THB): 9,776,000

Master Degree in HDD Engineering Technology #6

Duration: 01 Jul 12 – 31 Aug. 2016

Project Investigator(s): Nitin Afzulpurkar

Sponsor: Western Digital Co. Ltd.

Total Contracted Amount (THB): 6,016,000

The 10 international federation of Logistics and SCM systems

Duration: 01-01-2015 to 31-12-2016

Project Investigators Prof. Voratas Kachitvichyanukul

Sponsor conference participants

Total Contracted Amount (THB): 1,500,000

Professional master degree program in IEM and ISCM

Duration: 01-10-2014 to 31-12-2015

Project Investigators Dr. Huynh trung Luong

Sponsor HCM City_Vietnam

Total Contracted Amount (THB): 96,400

Optimal Design of Turbine Geometry for Small Hydroelectric Power Plant of PEA

Duration: May-2012 to May-2014

Project Investigator (s): Ir. Erik L.J. Bohez

Sponsor: Provincial Electricity Authority

Total Contracted Amount (THB): 12,762,000.00

for Hanoi#13.1 & Hanoi#13.2 Group

Duration: 1-Aug-2012 to 31-Dec-2017

Project Investigator(s): Barbara Igel

Sponsor: Multi-donor

Total Contracted Amount (THB): 12,246,000

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): 10,332,562.5

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): 8,801,812.5

International Executive MBA- Vietnam for Vung Tau#4th Group

Duration: 1-Jan-2012 to 31-Dec-2016

Project Investigator(s): Barbara Igel

Sponsor: Multi-donor

Total Contracted Amount

(THB): 9,119,749.275

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

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

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

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

Doctor of Business Administration

Duration: 1-Aug-2012 to 31-Jun-2019

Project Investigator(s): Winai

Wongsurawat

Sponsor: -

Total Contracted Amount

(THB): 19,440,000

3.6.4 Publications

Patent

S.Siddhichai, **M. Ekpanyapong**, J. Moonrinta, M. N. Dailey, R. Marikhu, Automated vehicle movement

detection and its process, (Thai Patent, submitted 30 Sep. 2014, jointly owned by NSTDA, and AIT)

Book

Wisittipanich, W. and Kachitvichyanukul, V. A Pareto-Archived Differential Evolution Algorithm for Multi-Objective Flexible Job Shop Scheduling Problems, In Logistics Operations, Supply Chain Management and Sustainability, Golinska P., Editor, Springer, 2014, 325-339.

International Journal Articles with Impact factor

Refereed Journals

Suppachai Howimanporn and **Manukid Parnichkun**. "Control of an X-Y Planar Inverted Pendulum Using PSO based SMC," International Journal of Robotics and Automation. ACTA Press, (2014), Impact Factor 0.44.

Kanjanapan Sukvichai and **Manukid Parnichkun**. "Double-Level Ball-Riding Robot Balancing: from System Design, Modeling, Controller Synthesis, to Performance Evaluation," International Journal of Mechatronics. Elsevier Science Ltd., Vol.24, pp.519-532. (2014) Impact Factor 1.823.

M.H. Aziz, **E.L.J. Bohez**, Roongrat Pisuchpen, M. Parnichkun, "Petri Net model of repetitive push manufacturing with Polca to minimize value added WIP," International Journal of Production Research, Taylor and Francis, (2014).

Kanchana Kanchanasut, Saroch Boonsiripat, Apinun Tunpan, Hoe K. Kim, **M. Ekpanyapong**, Internet of Cars through Commodity V2V Mobile Routers: Application for Developing Countries, KSCE

Journal of Civil Engineering, 2014, Impact factor 0.511

Krit Athikulwongse, **Mongkol Ekpanyapong**, Sung Kyu Lim, Exploiting Die-to-Die Thermal Coupling in 3-D IC Placement, , IEEE Transactions on VLSI (TVLSI), Vol. 22, Issues 10, 2014. Impact factor 1.218.

Gomes, Tiago, Garcia, Paulo, Salgado, Filipe, Monteiro, Joao, **Ekpanyapong, Mongkol**, Tavares, Adriano," Task-Aware Interrupt Controller: Priority Space Unification in Real-Time Systems", IEEE Embedded Letters, 2014

Jongwanich, J., Kohpaiboon, A., Yang, C.-H., Science park, triple helix, and regional innovative capacity: Province-level evidence from China (2014), Journal of the Asia Pacific Economy, 19 (2), pp. 333-352, IF: 0.264

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Hill, H., **Jongwanich, J.**, Emerging East Asian economies as foreign investors: An analytical survey (2014), Singapore Economic Review, 59 (3), 1450019, IF: 0.129

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Popaitoon, S., **Siengthai, S.**, The moderating effect of human resource management practices on the relationship between

knowledge absorptive capacity and project performance in project-oriented companies (2014), *International Journal of Project Management*, 32 (6), pp. 908-920, IF: 2.436

Sorakraikitikul, M., **Siengthai, S.**, Organizational learning culture and workplace spirituality Is knowledge-sharing behaviour a missing link? (2014), *Learning Organization*, 21 (3), pp. 175-192, IF: 1.3

Kungwansupaphan. C., **Siengthai. S.** Exploring entrepreneurs' human capital components and effects on learning orientation in early internationalizing firms (2014), *international entrepreneurship and management journal*, 10(3) pp. 561-587 , IF: 0.746

Wongsaroj, R., **Krairit, D.**, Khang,D.B., IT outsourcing and impacts in Thailand's financial institutions (2014), *Information Development*, 30 (3), pp. 256-275, IF: 0.62

Afsar, B., **Badir, Y.**, Saeed, B., Transformational leadership and innovative work behavior, *Industrial Management and Data Systems*, 114 (8), pp. 1270-1300,IF: 1.226

Sompong, K., Igel, B., Smith, H.L., Strategic alliance motivation for technology commercialization and product development (2014), *Management Research Review*, 37 (6), pp. 518-537, IF: .072

Astanti, R.D., Jin Ai T., **Luong, H.T.**, and Wee, H.M. (2014). Two techniques for solving non-linear decreasing demand inventory system with shortage backorders. *International Journal of Operational Research* (accepted).

Yu, V.F., Normasari, N.M.E., and **Luong, H.T.** (2014). Integrated Location-Production-Distribution Planning in a Multiproducts Supply Chain Network Design Model. *Mathematical Problems in Engineering*, Vol. 2015 (doi:10.1155/2015/473172).

Wisittipanich, W. and **Kachitvichyanukul, V.** Mutation Strategies toward Pareto Front for Multi-objective Differential Evolution Algorithm, *International Journal of Operational Research*, Vol. 19, No. 3, pp.315–337, 2014.

Truong, H. T., Nguyen, T. L., and **Kachitvichyanukul, V.** A Game Theory Approach for Value Co-creation Systems, *Production & Manufacturing Research*, Volume 2, Issue 1, pp 253-265, 2014. (DOI:10.1080/21693277.2014.913124)

Lapanaphan Nippon, **Bohez Erik L.J.**, High Impedance Actuator Fusion: A New Concept For A Haptic System, *International Journal of Robotics and Automation*, ISSN 0826-8185, Vol.30 ,No.4, 2015.

Tang Tran Duc & **Bohez Erik L. J.**, A new collision avoidance strategy and its integration with collision detection for five-axis NC machining *Int J Adv Manuf Technol*, Accepted 8 May 2015, DOI 10.1007/s00170-015-7293-x

Putthawong, S., **Koomsap, P.**, and Chansri, N., Image-Based Adaptive Crosshatching Process for Laminated Object Manufacturing, *Virtual and Physical Prototyping*, Volume 9, Issue 4, 2014, pp. 233-

249, DOI: 10.1080/17452759.2014.954823.

Chansri, N., and **Koomsap, P.**, " Sketch-Based Modeling from a Paper-Based Overtraced Freehand Sketch, *International Journal of Advanced Manufacturing Technology*, Volume 75, Issue 5-8, 2014, pp.705-729, DOI: 10.1007/s00170-014-6161-4.

Chanthakulchan, A., **Koomsap, P.**, Auyson, K., and Supaphol, P., Development of an Electrospinning-Based Rapid Prototyping for Scaffold Fabrication, *Rapid Prototyping Journal* Volume 21, Issue 3, 2015, pp. 329-339, DOI: 10.1108/RPJ-11-2013-0119.

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Conference Publications

S. Amornwongpeeti, N. Ono, and **M. Ekpanyapong**, Design of FPGA-Based Rapid Prototype Spectral Subtraction for Hands free Speech Applications, APSIPA2014

P. Thontirawong, **M. Ekpanyapong**, and P. Chongstitvatana, "SCFTL: an efficient caching strategy for page-level flash translation layer", ICSEC, 2014

F. Salgado, J. Mendes, A. Tavares, and **M. Ekpanyapong**, "Leveraging On-Chip Debug Features for Condition Codes Handling in Binary Translation", in *The Brazilian Symposium on*

- Computing System Engineering (SBESC), 2014
- S. Pinto, D. Oliveira, J. Pereira, N. Cardoso, **M. Ekpanyapong**, J. Cabral and A. Tavares, "Towards a Lightweight Embedded Virtualization Architecture Exploiting ARM TrustZone", to be appeared in IEEE International Conference on Emerging Technologies and Factory Automation (ETFA), Barcelona, 2014
- S. Pinto, J. Pereira, D. Oliveira, F. Alves, E. Qaralleh, **M. Ekpanyapong**, J. Cabral and A. Tavares, "Porting SLOTH System to FreeRTOS running on ARM Cortex-M3", International Symposium on Industrial Electronics (ISIE), Istanbul, 2014
- W. Sereethavekul, and **M. Ekpanyapong**, "The Design of a wristband screen application for interface with Android Systems", Electrical Engineering/Electronics, Computer, Telecommunications and Information Technology (ECTI-CON) 2014
- S. Sakjiraphong, A. Pinho, M. N. Dailey, **M. Ekpanyapong**, and A. Tavares, "Real-Time Road Lane Detection with Commodity Hardware", Invited paper, The 2014 International Electrical Engineering Congress (iEECon) 2014
- Sustainable Science & Technology , **Bohez, Erik L.J.** iEECON (international, Electrical Engineering Congress, 20-22 March 2014, Pattaya, Montien Hotel, Thailand
- Design and Development of Off-line Programming System for Welding Robot Cell, By Pramod Munasinghe, Nuwan Wickamasinghe, Than Lin, **Erik L.J. Bohez**, Liu Liang Bo, Proceedings of the 6th International Conference on Manufacture, Machine Design and Tribology, (ICMDT2015 Japan), April 22-25, 2015, Okinawa, Japan
- A new interactive-generative jewelry design system: hybrid of shape and evolutionary design, By Somlak Wannarumon Kieharova, **Erik L.J. Bohez**, Sixth International Conference on Swarm Intelligence (ICSI 2015) June 25-29, 2015, Beijing, China
- Liu, Jie, **Kachitvichyanukul, Voratas**, "Pareto-Based PSO Algorithm for Multi-Objective LRP ", The Asia Pacific Industrial Engineering & Management Systems Conference 2014, Jeju, Korea.
- Chanthakulchan, A., Parkhi, A.A., **Koomsap, P.**, and Supaphol, P., Environmental Effects in Fiber Fabrication Using Electrispinning-Based Rapid Prototyping, Proceedings of the 1st International Conference on Progress in Additive Manufacturing, Singapore, May 2014, pp. 428-433.
- Chansri, N., Janokul, K., Thamnitatsana, N., and **Koomsap, P.**, Experimental Study on Support Material Composition for Selective Vacuum Manufacturing RP Technique, Proceedings of the 1st International Conference on Progress in Additive Manufacturing, Singapore, May 2014, pp. 127-132
- Badir, Y.F.**, Degree and type of inter-organizational learning required in strategic alliance's first new product development project: The tradeoff between benefits and risks (2014), PICMET 2014 - Portland International Center for Management of Engineering and Technology, Proceedings: Infrastructure and Service Integration, 6921319, pp. 2288-2298
- Pradhan, R.P., **Badir, Y.**, Energy-growth nexus: Evidence from a panel of ASEAN regional forum countries (2014), Proceedings of the 2014 International Conference and Utility Exhibition on Green Energy for Sustainable Development, ICUE 2014, 6828947
- Badar, K., Hite, J.M., **Badir, Y.F.**, The moderating roles of academic age and institutional sector on the relationship between co-authorship network centrality and academic research performance, Aslib Proceedings: New Information Perspectives, 66 (1), pp. 38-53
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Chapter 3.7: INFRASTRUCTURE

3.7.1 Introduction

Infrastructure refers to the fundamental facilities and systems serving a country, city, or area, including the services and facilities necessary for its economy to function. It can be defined as “the physical components of interrelated systems providing commodities and services essential to enable, sustain, or enhance societal living conditions”, such as roads, rails, bridges, ports, housings, water supply, sewers, electrical grids, telecommunications, etc. It may also include social and infrastructure facilities such as educational networks and health services. The infrastructure needs are bound to evolve continuously with regards to the geographical, demographical, and political developments. AIT reinforces its capacity by have different field of studies to facilitate infrastructure development and capacity building which includes construction engineering, transport engineering, geotechnical and earth science engineering and structural engineering etc. This theme represents the physical components of interrelated systems providing commodities and services essential to enable, sustain, or enhance societal living conditions. The sections below are further divided into Research Projects and Publications. Projects are subdivided into ongoing projects and completed projects in 2014. The Publication comprises of Book and chapters, International refereed papers in journals and conferences, Patents, other academic and outreach activities.

3.7.2 Grants and Sponsored Research Completed in 2014

Structural Integrity Evaluation of the Burapa Withi Expressway (EXAT)

Duration: 1-Jun-10 to 28-Feb-14
Project Investigator(s): Pennung Warnitchai
Sponsor: Expressway Authority of Thailand
Total Contracted Amount (THB): 26,980,000

A Study on Seismic Design and Retrofit of Buildings in Thailand (TRF III)

Duration: 1-Jun-11 to 31-May-14
Project Investigator(s): Pennung Warnitchai
Sponsor: The Thailand Research Fund
Total Contracted Amount (THB): 5,181,000

Seismic Hazard and Risk Assessment of Six Cities in Bangladesh (CDMP II)

Duration: 1-Aug-12 to 31-Aug-14
Project Investigator(s): Pennung Warnitchai
Sponsor: The Thailand Research Fund
Total Contracted Amount (THB): 5,800,000

Seismic Hazard and Risk Assessment of Six Cities in Bangladesh

Duration: 01-Aug-2012 to 31-Aug-2014
Project Investigators Dr. Pennung Warnitchai
Sponsor Asian Disaster Preparedness Center (ADPC)
Total Contracted Amount (THB): 5,800,000

Motorcycle Accident Analysis: Phase 1

Duration: 15-Jul-13 to 31-Jan-14
Project Investigator(s): Dr. Kunawee Kanitpong
Sponsor: Yamaha Motor, Co., Ltd
Total Contracted Amount (THB): 612,000

Road Safety Watch-Central 2013

Duration: 15-Jul-13 to 14-May-14
Project Investigator(s): Dr. Kunawee Kanitpong
Sponsor: ThaiRoads Foundation
Total Contracted Amount (THB): 1,707,750

Professional Master Project Managment CanTho City 2013

Duration: 1-Jun-13 to 31-Dec-14
Project Investigator(s): Dr. BHW Hadikusumo and Dr. Pennung Warnitchai
Sponsor: Construction Corporations in Vietnam
Total Contracted Amount (THB) 5,021,250

AIT Green campus Initiatives project support-transportation

Duration: 01-02-2014 to 30-09-2014
Project Investigators Dr Djoen San Santoso
Sponser ADEME, France
Total Contracted Amount (THB): 100,000

3.7.3 On-going Grants and Sponsored Research

Road safety watch -central 2014

Duration: 15-Sep-2014 to 15-Feb-2015
Project Investigators Kunawee Kantipong
Sponser ThaiRoads foundation
Total Contracted Amount (THB): 1,026,850

Accident database development for BMA

Duration: 15-Mar-2014 to 15-Jan-2015
Project Investigators Kunawee Kantipong
Sponser Bangkok metropolitian administration
Total Contracted Amount (THB): 4,400,000

Setting up of a hydraulic Laboratory at CUET, Bangladesh

Duration: 01-06-2014 to 30-08-2015
Project Investigators Prof mukund s Babel
Sponser UNESCO-IHE, the Netherlands
Total Contracted Amount (THB): 814000

Professional Master in Project Management Ho Chi Minh City Class A Sept. 2013

Duration: 1-Sep-2013 to 30-Jul-2015
Project Investigator: BHW Hadikusumo

Sponsor: Construction Corporations in Vietnam

Total Contracted Amount (THB): 8,497,500

Professional Master Project Management Hanoi Sept 2013

Duration: 1-Sep-13 to 31-Jul-15

Project Investigator(s): Dr. BHW Hadikusumo

Sponsor: Construction Corporations in Vietnam

Total Contracted Amount (THB) 5,021,250

Professional master Project management Hanoi Sept 2014

Duration: 01-Sept-2014 to 31-Dec-2015

Project Investigators Dr. BHW Hadikusumo

Sponsor: Construction corporation in Vietnam

Total Contracted Amount (THB): 167,375

Professional master Project management in Naw Pyi Taw, Myanmar Oct 2014

Duration: 26-10-2014 to 31-05-2016

Project Investigators Dr. BHW Hadikusumo

Sponsor Ministry of construction Myanmar

Total Contracted Amount (THB): 206,000

Road safety watch -central 2014

Duration: 15-Sep-2014 to 15-Feb-2015

Project Investigators Kunawee Kantipong

Sponsor ThaiRoads foundation

Total Contracted Amount (THB): 1,026,850

Accident database development for BMA

Duration: 15-Mar-2014 to 15-Jan-2015

Project Investigators Kunawee Kantipong

Sponsor Bangkok metropolitan administration

Total Contracted Amount (THB): 4,400,000

Setting up of a hydraulic Laboratory at CUET, Bangladesh

Duration: 01-06-2014 to 30-08-2015

Project Investigators Prof mukund s Babel Sponser UNESCO-IHE, the Netherlands

Total Contracted Amount (THB): 814,000

Professional Master in Project Management Ho Chi Minh City Class A Sept. 2013

Duration: 1-Sep-2013 to 30-Jul-2015

Project Investigator: BHW Hadikusumo

Sponsor: Construction Corporations in Vietnam

Total Contracted Amount (THB): 8,497,500

Professional Master Project Management Hanoi Sept 2013

Duration: 1-Sep-13 to 31-Jul-15

Project Investigator(s): Dr. BHW Hadikusumo

Sponsor: Construction Corporations in Vietnam

Total Contracted Amount (THB) 5,021,250

Professional master Project management Hanoi Sept 2014

Duration: 01-Sept-2014 to 31-Dec-2015

Project Investigators Dr. BHW Hadikusumo

Sponsor: Construction corporation in Vietnam

Total Contracted Amount (THB): 167,375

Professional master Project management in Naw Pyi Taw, Myanmar Oct 2014

Duration: 26-10-2014 to 31-05-2016

Project Investigators Dr. BHW Hadikusumo

Sponsor Ministry of construction Myanmar

Total Contracted Amount (THB): 206,000

3.7.4 Publications

International Journal Articles with Impact factor

Refereed Journal Papers

Ahsen Maqsoom, **Chotchai Charoenngam**, (2014), "Motives and competitive assets of Pakistani international construction contracting firms", Journal of Financial Management of Property and Construction, Vol. 19 Iss 2 pp. 138 – 151.

Memon, S., **Hadikusumo, B.**, and Sunindijo, R. (2014). "Using Social Interaction Theory to Promote Successful Relational Contracting between Clients and Contractors in Construction." J. Manage. Eng., 10.1061/(ASCE) ME.1943-5479.0000344 , 04014095.

Sunindijo, R.Y., **BHW. Hadikusumo**, and Thanawat P. (2014), "Modelling Service Quality in the Construction Industry" International Journal Business Performance Management, Vol. 15 No. 3.

Pham Hong Linh and **BHW. Hadikusumo**, (2014) "Schedule Delays in Engineering, Procurement, and Construction Petrochemical Projects in Vietnam: A Qualitative Research Study", International Journal of Energy Sector Management, Vol. 8, No. 1, pp.3-26.

WM Sarath C Piyadasa and **BHW. Hadikusumo** (2014) "Risk Assessment in Non-Standard Forms of Civil Engineering Consulting Services" Journal of Civil Engineering and Management, Volume 20, Issue 5, pages 746-759

Surangkana Trangkanont **Chotchai Charoenngam**, (2014), "Critical failure factors of public-private partnership low-cost housing program in Thailand", Engineering, Construction and Architectural Management, Vol. 21 Iss 4 pp. 421 – 443.

Surangkana Trangkanont **Chotchai Charoenngam**, (2014), "Private partner's risk response in PPP low-cost housing projects", Property Management, Vol. 32 Iss 1 pp. 67 – 94 Leelakajonjit,

Amornchai, Brannolte, Ulrich, **Kanitpong, Kunawee**, Iamtrakul, Pawinee (2014) Analysis of Road Accident Hazardous Locations in Bangkok Police Station, Thailand, the Acta Technica Jaurinensis, Vol 7 page 33-35

Khampanit, A., Leelataviwat, S., Kochanin, J., and **Warnitchai, P.** (2014), "Energy-based seismic strengthening design of non-ductile reinforced concrete frames using buckling-restrained braces", *Engineering Structures*, Volume 81, December 05, 2014, Pages 110-122. (SCOPUS citation: 0, Journal's Impact Factor: 1.838, Publisher: Elsevier BV)

Phansri, B., Charoenwongmit, S., Yooprasertchai, E., Park, K.-H., **Warnitchai, P.**, and Shin, D.-H. (2014), "An experimental study on shaking table tests on models of a concrete gravity dam", *KSCE Journal of Civil Engineering*, Volume 19, Issue 1, 2014, Pages 142-150. (SCOPUS citation: 0, Journal's Impact Factor: 0.484, Publisher: Springer Verlag.

Refereed Proceedings

Ahsen Maqsooma, Chotchai Charoenngama, Rehan Masoodb, Muhammad Awaisc (2014), "Foreign Market Entry Considerations of Emerging Economy Firms: An Example of Pakistani Contractors" Fourth International Symposium on Infrastructure Engineering in Developing Countries, IEDC, Procedia Engineering 77, 222 – 228

Ahsen Maqsooma, **Chotchai Charoenngama**, Rehan Masoodb, Muhammad Awaisc (2014), "Foreign Market Entry Considerations of Emerging Economy Firms: An Example of Pakistani Contractors" Fourth International Symposium on Infrastructure Engineering in Developing Countries, IEDC, Procedia Engineering 77, 222 – 228.

Gunaratne, G.S., **Santoso, D.S.**, "User perception towards service quality of public bus transportation in Anuradhapura District, Sri Lanka". Proceedings of the 7th ATRANS Symposium – Young Researcher's Forum, 22-23 August 2014, Bangkok, Thailand

Phienweij, N., Amornfa, K., and Cheang, W. (2014), Comparative Analysis of Piled Foundation Design of a Highrise building in Bangkok Subsoils, Proc. International Conference on Geotechnical Engineering; Soil-Structure Interaction, Underground Structures and Retaining Walls, June, ST. Petersburg, Russia, pp. 180-185.

Cheang, W., **Phienweij, N.**, Tan, S.A. and Amornfa, K. (2014), Modelling of Combined Piled-Raft Foundation using 3-D FEM, Proc. Annual Seminar of Hong Kong Institute of Engineers, May, Hong Kong.

N. V. Trieu and **P. H. Giao (2014)**, Rose Diagrams for Design of Borehole Orientation in Fractured Granite Basement, *Proc. Intl' EAGE/FESM Joint Regional Conference Petrophysics Meets Geoscience "From Nano Pores to Mega Structures"*, European Association of Geoscientists and Engineers (EAGE), 17-18 February 2014, Kuala Lumpur, Malaysia.

Khin M.M. Latt1a and **P. H. Giao (2014)**, *Resistivity and Induced Polarization Survey for Bangkok Soft Clay*, Proc. EIT-JSCE Joint Intl' Symp. on International Human Resource Development for Disaster-resilient Countries, Au. 25-27, 2014, Imperial Queen's Park Hotel, Bangkok, Thailand

Krit S. & P. H. Giao (2014), *Soil Profile and Intrinsic Compression of Bangkok Clay along N-S Section of Chao Phraya Plain*, Proc. EIT-JSCE Joint Intl' Symp. on International Human Resource Development for Disaster-resilient Countries, Au. 25-27, 2014, Imperial Queen's Park Hotel, Bangkok, Thailand

P. H. Giao, T. T. Thoang, L. X. Thuyen and N. H. H, Vu (2014), Geotechnical Characterization of the Subsoil profile Underlying the Land Subsidence Monitoring Points in Southern Vietnam Delta, *Proc. of the 9th Intl' Symp. on Lowland Technology "Problems and Remedy measures of Lowland"*, pp.429-436, Sept 29 to Oct. 3, 2014, Saga University, Saga, Japan.

Chapter 3.8: INFORMATION AND COMMUNICATION TECHNOLOGIES

3.8.1 Introduction

Today's fast-booming world of Telecommunications and Computer networking plays a significant leadership role. This theme focuses on world-class teaching and research into the foundations and applications of computing systems, 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 and increasing the productivity and creativity of managers and executives who work with information resources. 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 collaboration; Home networking; ICT security; online communities; and voice over IP. The sections below are further divided into Research Projects and Publications. Projects are subdivided into ongoing projects and completed projects in 2014. The Publication comprises of Book and chapters, International refereed papers in journals and conferences, Patents, other academic and outreach activities.

3.8.2 Grants and Sponsored Research Completed in 2014

Automatic human and vehicle counting system

Duration: 15-Jan-2014 to 15-Jun-2014

Project Investigators Dr Mathew N. Dailey

Sponser

Total Contracted Amount (THB): 720,000

NSTAD Investorday Award 2013

Duration: 01-Jul-2013 to 31-Mar-2014

Project Investigators Mongkol Ekpanyapong and Matthew N. Dailey

Sponser National Science and Technology Development Agency

Total Contracted Amount (THB): 500,000

Winter Education Camp and Study Tour 2014 for JIS Group Educational Initiatives, India

Duration: 20-Dec-13 to 31-Dec-14

Project Investigator(s): Nitin Kumar Tripathi

Sponsor: JIS Group Educational Initiatives, India

Total Contracted Amount (THB) 500,000

Summer Education Camp and Study Tour 2013 for JIS Group Educational Initiatives, India

Duration: 1-Jul-13 to 30-Jun-14

Project Investigator(s): Nitin Kumar Tripathi

Sponsor: JIS Group Educational Initiatives, India

Total Contracted Amount (THB) 500,000

Yamaguchi University Summer Training Program 2013

Duration: 1-Sep-13 to 31-Mar-14

Project Investigator(s): Dr. Nitin Kumar Tripathi and Dr. Masahiko Nagai

Sponsor: Yamaguchi University, Japan

Total Contracted Amount (THB) 170,000

Asian Summer School for Geoinformatics and issues on Sustainable Development in Asia

Duration: 1-Aug-13 to 30-Jun-14

Project Investigator(s): Dr. Sarawut Ninsawat

Sponsor: Chubu University

Total Contracted Amount (THB) 600,000

Developing Mobile GIS Application on Tablet Device for iOS and Android Operating System

Duration: 6-May-13 to 30-Apr-14

Project Investigator(s): Dr. Sarawut Ninsawat

Sponsor: D.T.S. Technology Partnership Limited

Total Contracted Amount (THB) 1,000,000

GPS Trip Segmentation Data

Duration: 1-Apr-13 to 31-Mar-14

Project Investigator(s): Dr. Nitin Kumar Tripathi

Sponsor: The University of Tokyo

Total Contracted Amount (THB) 120,380

Summer Education Camp and Study Tour 2013 for United Group of institution

Duration: 1-Jun-13 to 31-May-14

Project Investigator(s): Nitin Kumar Tripathi

Sponsor: The University of Tokyo

Total Contracted Amount (THB) 950,000

MNNIT Training and Study Tour

Duration: 1-Oct-13 to 31-May-14

Project Investigator(s): Nitin Kumar Tripathi

Sponsor: Motilal Nehru National Institute of Technology, Allahabad

Total Contracted Amount (THB) 200,000

AIT Green campus initiative project support-water

Duration: 01-Feb-2014 to 30-Sep-2014

Project Investigators Dr Masahiko Nagai

Sponser ADEME France

Total Contracted Amount (THB): 100,000

Developing Mobile GIS Application on Tablet Device for iOS and Android Operating System

Duration: 06-May-2013 to 30-Apr-2014

Project Investigators Dr. Sarawut

Limited

Total Contracted Amount (THB):
1,000,000

Consultant and prototype development for web GIS Service system for Agriculture information

Duration: 01-Jul-2014 to 30-Nov-2014

Project Investigators Dr Masahiko Nagai

Sponsor National electronics and computer technology (NECTEC)

Total Contracted Amount (THB): 150,000

interLab IT Service

Duration: 16-May-2013 to 31-Jan-2014

Project Investigator(s): Viraphan Samadi

Sponsor: AIT

Total Contracted Amount (THB): 3,500,000

Internal AIT Internet Service

Duration: 18-Aug-2013 to 31-Dec-2014

Project Investigator(s): Viraphan Samadi

Sponsor: Administration, Schools and other Units at AIT

Total Contracted Amount (THB): 800,000

DUMBO III

Duration: 11-Sept-2011 to 31-Mar-2014

Project Investigator(s): Prof. Kanchana Kanchanasut

Sponsor: NECTEC

3.8.3 On-going Grants and Sponsored Research

Video analytics platform for CCTV Security

Duration: 01-Aug-2014 to 31-Jul-2015

Project Investigators Dr Mathew N. Dailey

Sponsor National science and technology Development agency (NSTDA)

Total Contracted Amount (THB): 994,000

Prototyping system development for Ontology-Based Data Retrieval Support System

Duration: 1-Apr-13 to 31-Mar-15

Project Investigator(s): Dr. Nitin Kumar Tripathi and Dr. Masahiko Nagai

Sponsor: The University of Tokyo

Total Contracted Amount (THB) 1,252,548

Prototyping system development for global Urban and infrastructure data

Duration: 1-Apr-13 to 31-Mar-15

Project Investigator(s): Dr. Nitin Kumar Tripathi and Dr. Masahiko Nagai

Sponsor: The University of Tokyo

Total Contracted Amount (THB) 1,100,724

Basic Investigation and Prototyping for Overseas

Duration: 1-Apr-12 to 31-March-15

Project Investigator(s): Dr. Masahiko Nagai

Sponsor: The University of Tokyo

Total Contracted Amount (THB) 1,760,822.06

Survey for Information Distribution and Decision

Duration: 1-Apr-12 to 31-March-15

Project Investigator(s): Dr. Masahiko Nagai

Sponsor: The University of Tokyo

Total Contracted Amount (THB) 1,546,392.12

Design and Prototype development for Ontology-Based Data Retrieval Support System

Duration: 1-Apr-12 to 31-March-15

Project Investigator(s): Dr. Masahiko Nagai

Sponsor: The University of Tokyo

Total Contracted Amount (THB) 1,760,822.08

Development of Web Service and Survey of Analytical Model and Data Flow for Critical Earth Observation Parameters

Duration: 1-Apr-12 to 31-March-15

Project Investigator(s): Dr. Masahiko Nagai

Sponsor: The University of Tokyo

Total Contracted Amount (THB) 883,652.79

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

Jaxa-Capacity Building 2014-15

Duration: 01-Sep-2014 to 31-Dec-2015

Project Investigators Dr Lal samarakoon

Sponsor Japan aerospace exploration company

Total Contracted Amount (THB): 5,620,000

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

Sentinel Asia

Duration: 01-Oct-2014 to 01-Oct-2015

Project Investigators Dr Lal samarakoon

Sponsor Japan aerospace exploration company

Total Contracted Amount (THB): 2,344,752

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

Asian summer school for geoinformatics and issues on sustainable development in Asia

Duration: 01-Aug-2014 to 31-Jul-2015

Project Investigators Dr sarawut Ninsawat

Sponsor Chubu university

Total Contracted Amount (THB): 600,000

ADB-RETEC Project

Duration: 01-Sep-2014 to 30-Oct-2016

Project Investigators Dr Lal samarakoon

Sponser ADB, Remote sensing technology of Japan

Total Contracted Amount (THB): 3,200,000

Developing GIS based sugar system for sugar cane management

Duration: 25-Jul-2014 to 24-July-2015

Project Investigators Dr Sarawut Ninsawat

Sponser mitr phol sugarcane reasearc center

Total Contracted Amount (THB): 796,000

Eduction campand study tour for JIS Group of institutions

Duration: 01-Jul-2014 to 31-Jul-2016

Project Investigators Nitin Kumar Tripathi

Sponser United group of institutions , inda

Total Contracted Amount (THB): 950,000

Upgrade and improvement of MRC information system

Duration: 01-Apr-2014 to 31-Dec-2015

Project Investigators Dr Lal samarakoon

Sponser Mekong river commision /MRC

Total Contracted Amount (THB): 3,446,592

Operational Design of Ontology-based data retrieval support system

Duration: 01-Apr-2014 to 31-Mar-2016

Project Investigators Dr Masahiko Nagai

Sponser University of Tokyo

Total Contracted Amount (THB): 618,156

CANAsia

Duration: 01-Oct-2011 to 31-Oct-2015

Project Investigators Lal Samarakoon
Sponser CANAsia Geoinformatics

Solution Ltd

Total Contracted Amount (THB): 870,000

Growing NAVIS

Duration: 01-Jul-2012 to 30-Apr-2015

Project Investigators Dr. Lal Samarakon

Sponser Navigation Technologies

Research Area Institute Superio Mario Boella, Italy

Total Contracted Amount (THB): 1,174,080

Design and Prototype development for Ontology-Based Data Retrieval Support System

Duration: 01-Apr-2012 to 31-Mar-2015

Project Investigators Dr. Masahiko Nagai

Sponser the University of Tokyo

Total Contracted Amount (THB): 1,760,822.08

Survey for Information Disribution and Decision Making during Flood in Thailand

Duration: 01-Apr-2012 to 31-Mar-2015

Project Investigators Dr. Masahiko Nagai

Sponser The University of Tokyo

Total Contracted Amount (THB): 1,546,392.12

Basic Investigation and Prototyping for Overseas Preparation Systems of Urban and Infrastructure Data

Duration: 01-Apr-2012 to 31-Mar-2015

Project Investigators Dr. Masahiko Nagai

Sponser The University of Tokyo

Total Contracted Amount (THB): 1,760,822.06

DUMBO V

Duration: 01-01-2015 to 31-12-2015

Project Investigators Prof Kanchana

Kachanasut

Sponser NECTEC/ISIF

Total Contracted Amount (THB): 3,000,000

Interlab training 2015

Duration: 01-01-2015 to 31-12-2015

Project Investigators viraphan samadi

Sponser TEIN4 Engineers, Network engineers

Total Contracted Amount (THB): 2,000,000

Internet exchange

Duration: 01-05-2014 to 31-12-2014

Project Investigators Prof Kanchana Kachanasut, viraphan samadi

Sponser THNIC Foundation

Total Contracted Amount (THB): 1,000,000

Interlab IT service2015

Duration: 01-01-2015 to 31-12-2015

Project Investigators viraphan samadi

Sponser AIT

Total Contracted Amount (THB): 7,125,844

AIT internal development and maintanance

Duration: 01-01-2015 to 31-12-2015

Project Investigators viraphan samadi

Sponser AIT

Total Contracted Amount (THB): 1,500,000

AIT VOIP Telephone maintannace

Duration: 01-07-2014 to 31-12-2014

Project Investigators viraphan samadi

Sponser AIT

Total Contracted Amount (THB): 480,000

3.8.4 Publications

Book

S. Guha, Computer Graphics through OpenGL: From Theory to Experiments (Comprehensive Coverage of OpenGL 4.3), Second Edition, A K Peters, Taylor & Francis Group, published August 2014.

International Journal Articles with Impact factor

Chatchai Tantasirin, **Masahiko Nagai**, Taravudh Tipdecho, Nitin K. Tripathi, 18 February 2015, "Reducing hillslope size in digital elevation models at various scales and the effects on slope gradient estimation", Geocarto International, DOI:10.1080/10106049.2015.1004133.

- Masahiko Nagai**, Ashik Rajbhandari, Masafumi Ono, Ryosuke Shibasaki, 6 June 2014, "Earth Observation Data Interoperability Arrangement with Vocabulary Registry", Information Search, Integration, and Personalization Communications in Computer and Information Science, Volume 421, pp. 128-136.
- Ashik RAJBHNDARI, **Masahiko NAGAI**, Masafumi ONO, Ryosuke SHIBASAKI, 25 June 2014, "Integration of Disaster Information with Satellite Imagery Using Ontology", TRANSACTIONS OF THE JAPAN SOCIETY FOR AERONAUTICAL AND SPACE SCIENCES, AEROSPACE TECHNOLOGY JAPAN Vol. 12(2014) No. ists29, ONLINE ISSN: 1884-0485.
- Phutthard Vicharnakorn, Rajendra P. Shrestha, **Masahiko Nagai**, Abdul P. Salam, Somboon Kiratiprayoon, June 2014, "Carbon Stock Assessment Using Remote Sensing and Forest Inventory Data in Savannakhet, Lao PDR", Remote Sens. 2014, 6(6), 5452-5479; doi:10.3390/rs6065452.
- R. B. Reyes, **M. Nagai**, Y. Kamiya, T. Tipdecho, S. Ninsawat, May 2014, "Effect of sea level rise in the validation of geopotential/geoid models in Metro Manila, Philippines", Survey Review, Survey Review Ltd, Print ISSN: 0039-6265|Online ISSN: 1752-2706, DOI: <http://dx.doi.org/10.1179/1752270614Y.0000000102>.
- Kumpee Teeravech, **Masahiko Nagai**, Kiyoshi Honda, Matthew Dailey, 10 March 2014, "Discovering Repetitive Patterns in Facade Images using a RANSAC-Style Algorithm", ISPRS Journal of Photogrammetry and Remote Sensing, ISSN: 0924-2716, 10.1016/j.isprsjprs.2014.02.018.
- Sudniran Phetcharat, **Masahiko Nagai**, Taravudh Tipdecho, 29 January 2014, "Influence of surface height variance on distribution of ground control points", J. Appl. Remote Sens. 8(1), 083684 (Jan 29, 2014). doi:10.1117/1.JRS.8.083684.
- Mishra, Bhogendra, **Nitin K. Tripathi**, and Mukand S. Babel, 2014. Prediction of snow cover in the higher Himalayas based on non-linear autoregressive neural networks with exogenous inputs, *The Journal of Mountain Science*, 11 (4), 825-837. DOI 10.1007/s11629-014-2985-5, Springer, ISSN: 1672-6316 (print version) ISSN: 1993-0321 (electronic version) (Impact Factor: 1.0).
- Dibesh Khadka, Mukand S. Babel, Sangam Shrestha, **Nitin K. Tripathi**, 2014. Climate change impact on glacier and snow melt and runoff in Tamakoshi basin in the Hindu Kush Himalayan (HKH) region, *Journal of Hydrology* 01/2014; 511:49–60.
- Tripathi, K N**, Kitamoto, A, "Near real-time characterisation of urban environments: a holistic approach for monitoring dengue fever risk areas", International Journal of Digital Earth, Vol 11, 2014
- Mozumder, Chitrini and **Nitin K. Tripathi**, 2014. Geospatial scenario based modelling of urban and agricultural intrusions in Ramsar wetland Deepor Beel in Northeast India using a multi-layer perceptron neural network, *International Journal of Applied Earth Observations and Geoinformation*, DOI: <http://dx.doi.org/10.1016/j.jag.2014.03.002>, Elsevier, ISSN: 0303-2434, (Impact Factor: 2.557).
- Mozumder, Chitrini and **Nitin K. Tripathi**, 2014. Ecosystem evaluation (1989-2012) of a Ramsar wetland Deepor Beel using satellite derived indices", *Environmental Monitoring and Assessment*, Vol. 186, Springer, ISSN: 0167-6369, Online ISSN:1573-2959 (Impact Factor: 1.592).
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- Sanit Arunpold , **Nitin K. Tripathi**, V. Rajesh Chowdhary, Durairaju Kumaran Raju, 2014. Comparison of GPS-TEC measurements with IRI-2007 and IRI-2012 modeled TEC at an equatorial latitude station, Bangkok, Thailand, *Journal of Atmospheric and Solar-Terrestrial Physics*, Volume 117, September 2014, Pages 88–94, Elsevier, DOI: 10.1016/j.jastp.2014.06.001.
- Bhatti, S.S., **Tripathi, N.K.**, 2014, Built-up area extraction using Landsat 8 OLI imagery, *GIScience & Remote Sensing* 51 (4), 445-467 (Impact Factor: 1.4).
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- W Phonphan, **N. K. Tripathi**, T Tipdecho, A Eiumnoh. 2014. Modelling electrical conductivity of soil from backscattering coefficient of microwave remotely sensed data using artificial neural network,

Geocarto International, 1-18. Taylor and Francis. (Impact Factor: 1.4).

V. Rajesh Chowdhary, **N.K. Tripathi**, S Arunpold, DK Raju. 2014. Variations of Total Electron Content in the Equatorial Anomaly Region in Thailand, *Advances in Space Research*. Pergamon.

Shweta Sinha, and **Nitin Kumar Tripathi**, 2014. Assessment of crop insurance international practices, policies and technologies as risk mitigation tools in India and Thailand, *Int. J. of Adv. Res. 2 (9)*. [ISSN 2320-5407]. (Impact Factor: 1.659).

Ha Trang, N. and **Tripathi, N. K.**, 2014. Spatial Correlation Analysis between Particulate Matter 10 (PM10) Hazard and Respiratory Diseases in Chiang Mai Province, Thailand, *Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci.*, XL-8, 185-191, doi:10.5194/isprsarchives-XL-8-185-2014, 2014.

Muhammad Shahzad Sarfraz, **Tripathi, Nitin K.**, Fazlay S. Faruque, Usama Ijaz Bajwa, Asanobu Kitamoto, Marc Souris, 2014. Mapping urban and peri-urban breeding habitats of Aedes mosquitoes using a fuzzy analytical hierarchical process based on climatic and physical parameters, *Geospatial Health 8(3)*, 2014, pp. S685-S697

Ratchaphon Samphutthanon, **Nitin Kumar Tripathi**, Sarawut Ninsawat and Raphael Duboz, 2014. Spatio-Temporal Distribution and Hotspots of Hand, Foot and Mouth Disease (HFMD) in Northern Thailand, *Int. J. Environ. Res. Public Health*, 11, 312-336; ISSN 1660-4601

Mishra, B., **TRIPATHI, K. N.**, Babel, S M , "Analysis of climatic variability

and snow cover in the Kaligandaki River Basin, Himalaya, Nepal", *Theoretical and applied climatology*, Vol 116, 2014.

T, Nguyen D, Tripathi, K N , "Coastal and marine ecological changes and fish cage culture development in Phu Quoc, Vietnam (2001 to 2011)", *Geocarto International*, Vol 29, 2014

K. Teeravech, M. Nagai, K. Honda, and **M.N. Dailey** (2014) "Discovering Repetitive Patterns in Façade Images using a RANSAC-style Algorithm", *ISPRS Journal of Photogrammetry and Remote Sensing*, 92: 38-53, 2014.

C.W. Mak, N.V. Afzulpurkar, **M.N. Dailey**, and P.B. Saram (2014) "A Bayesian Approach to Automated Optical Inspection for Solder Jet Ball Joint Defects in the Head Gimbal Assembly Process", *IEEE Transactions on Automation Science and Engineering*, 11(4): 1155-1162, 2014.

S. Chaivivatrakul, L. Tang, **M.N. Dailey**, and A.D. Nakarmi (2014) "Automatic Morphological Trait Characterization for Corn Plants via 3D Holographic Reconstruction", *Computers and Electronics in Agriculture*, 109: 109-123, 2014.

J. Baber, **M.N. Dailey**, S. Satoh, N.V. Afzulpurkar, and M. Bakhtyar (2014), "BIG-OH: Binarization of Gradient Orientation Histograms", *Image and Vision Computing*, 32(11): 940-953, 2014.

S. Chaivivatrakul, and **M.N. Dailey** (2014), "Texture-Based Fruit Detection", *Precision Agriculture*, 2014 (In press).

A. Basit, W.S. Qureshi, **M.N. Dailey**, and T. Krajnik (2014), "Joint Localization of Pursuit Quadcopters and Target using Monocular Cues", *Journal of Intelligent and Robotic Systems*, 2014 (In press).

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R.A. Shah, **N. Rajatheva** and Y. Ji (2014). "Outage Analysis of a Dual-Hop OFDM Amplify-and Forward Relay System with Subcarrier Mapping in Rayleigh Fading", Eurasip Journal on Wireless Communications and Networking, Vol.2014, Issue 1, December 1st, 2014.

Conference Publications

N. Khaitiyakun, **T. Sanguankotchakorn** and A. Tunpan (2014). "Data Dissemination on MANET by using Content Delivery Network (CDN) Technique", 28th International Conference on Information Networking, ICOIN 2014, Phuket, Thailand, pp. 502-506, February 10th - 12th, 2014.

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R.A. Shah, **N. Rajatheva** and Y. Ji (2014). "Analysis of BER and Capacity for Dual-Hop OFDM Relay System with Subcarrier Mapping in

Nakagami-m Fading", IEEE International Conference on Communications Workshops, ICC 2014, Sydney, NSW, Australia, June 10th - 14th, 2014.

N. Khaitiyakun and **T. Sanguankotchakorn** (2014). "An Analysis of Data Dissemination on VANET by using Content Delivery Network (CDN) Technique", 10th Asian Internet Engineering Conference, AINTEC 2014, Chiang Mai, Thailand, pp. 37-42, November 26th - 28th, 2014.

SHINICHI NAKAMURA, "Conjunction Assesment Panel", Advanced Maui Optical and Space Surveillance Technokogies Conference, Hawaii, USA, Maui Economic Development Board Inc, 2014.

SHINICHI NAKAMURA, "Planning Satellite Misson Session", SpaceOps2014, Pasadena, USA, AIAA, 2014.

SHINICHI NAKAMURA, "The Role of SLR inGravitational Earth Modeling Session", 19th International Workshop on Laser ranging, Annapolis, USA, ILRS (International Laser Ranging Service) @ NASA, 2014.

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J. Panta, **P. Sangudomlert** and K. Sripimanwat (2014). "Optimization of Operating BW for Indoor Optical Wireless OFDM Transmission with IM/DD", 11th International Conference on Electrical Engineering/Electronics, Computer, Telecommunications and Information Technology, ECTI-CON 2014, Nakhon Ratchasima, Thailand, May 14th – 17th, 2014.

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N. Khaitiyakun and **T. Sanguankotchakorn** (2014). "An Analysis of Data Dissemination on VANET by using Content Delivery Network (CDN) Technique", 10th Asian Internet Engineering Conference, AINTEC 2014, Chiang Mai, Thailand, pp. 37-42, November 26th - 28th, 2014.

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T. Sanguanpuak, **N. Rajatheva** and Y. Ji (2014). "Precoder and Decoder Designs for a MIMO Interfering Broadcast Channel with Imperfect CSI", 20th European Wireless Conference, EW 2014, Barcelona, Spain, May 14th – 16th, 2014.

T. Sanguanpuak, **N. Rajatheva** and M. Latva-Aho (2014). "Co-Primary Spectrum Sharing with Resource Allocation in Small Cell Network", 1st International Conference on 5G for Ubiquitous Connectivity, 5GU 2014, Levi, Finland, November 26th – 27th, 2014.

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R.A. Shah, **N. Rajatheva** and Y. Ji (2014). "Analysis of BER and Capacity for Dual-Hop OFDM Relay System with Subcarrier Mapping in Nakagami-m Fading", IEEE International Conference on Communications Workshops, ICC 2014, Sydney, NSW, Australia, June 10th - 14th, 2014.

Chapter 4: SCHOOL OF ENGINEERING AND TECHNOLOGY

4.1.1 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.

4.1.2 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

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.ait.asia/>

4.1.3 Thematic Groups, Fields of Study and Multidisciplinary Programs

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)

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

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) Computer Science with specialization in Software Engineering
- 3) Information Management (IM)
- 4) Remote Sensing and Geo-graphic Information Systems (RSGIS)
- 5) Telecommunications (TC)

Interdisciplinary Programs

- 1) Disaster Preparedness, Mitigation and Management (DPMM)
- 2) Geo- Exploration & Petroleum Geoengineering (GEPG)
- 3) Information and Communications Technologies (ICT)
- 4) Offshore Technology and Management (OTM)

4.1.4 Strategic Research Areas

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

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

Computer Science and Information Management (CSIM)

Software Engineering and Development; Information and Knowledge Management

Industrial Systems Engineering (ISE)

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

Remote Sensing and Geographic Information Systems (RS&GIS)

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

Telecommunications, Information and Communications Technologies (TC, ICT)

Mobile Wireless Communications, Network Performance Analysis, Digital Communications

Geotechnical and Earth Resources Engineering (GTE).

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

Structural Engineering

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

Transportation Engineering (TRE)

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

Water Engineering and Management (WEM)

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

4.1.5 Academic outreach Centers

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

ACSIG: Asian Center for Soil Improvement and Geosynthetic

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

ACTS: Asian Center for Transportation Studies

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

Geo informatics Center

Geo informatics Center is dedicated to development and promotion of remote sensing research and activities in Asia-Pacific by sharing satellite data, research results and experiences with researchers in the region. Visit Geoinformatics Center <http://www.geoinfo.ait.asia/>

Information Center

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

Regional Network Office for Urban Safety

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

Thailand Accident Research Center

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

AIT Center of Excellence in Nanotechnology

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

4.1.6 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]

4.2: SET – COMPUTER SCIENCE and INFORMATION MANAGEMENT FIELDS OF STUDY



4.2.1 Introduction

Computer Science Field of Study

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.

Information Management Field of Study

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.

4.2.2 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.

Faculty and Research Staff

Full-time Faculty

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

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

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

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

SUMANTA GUHA, MS, PhD, University of Michigan, Ann Arbor, USA; PhD, Indian Statistical Institute, Calcutta,

India; BSc, MSc, University of Calcutta, India.

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

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

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

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

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

Visiting and Adjunct Faculty

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

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

RAPHAEL DUBOZ, MA, University of Marseille, France; MA, University of Paris 6, France; PhD, University of Littoral Cote d'Opale, France.

Visiting Assistant Professor and Researcher in Centre de Cooperation Internationale en Recherche Agronomique Pour Le Development (CIRAD) (*Computing Modeling and Simulation, with Applications in the Environmental Sciences*)

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

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

Research Staff

LAKINDU BOTEJU, B.Sc., Asian Institute of Technology, Thailand.

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

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

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

ANURAG TIWARI, B.Sc., Asian Institute of Technology, Thailand.

4.2.3 Doctoral Students' Dissertation

Computer Science

Machine Vision Platform for Agricultural Crop Monitoring and Phenotyping for Plant Breeding
By Miss Supawadee Chaivivatrakul
Supervisor: Dr. Matthew Dailey

Model-Based Target Tracking from Monocular Camera
By Mr. Abdul Basit
Supervisor: Dr. Matthew Dailey

Self Services and Disservices Improving Avatars with Co-Design
By Mr. Hakan K. Alm
Supervisor: Dr. Paul Janecek

4.2.4 Masters Students' Theses and Research Studies

Computer Science

An Analysis of a Chaos-based Fast Image Encryption Algorithm
By Miss Weny Mistarika Rahmawati
Supervisor: Dr. Matthew Dailey

Analysis and Evaluation of E-Government Services in Afghanistan
By Mr. Mohammad Anwer Anwer
Supervisor: Dr. Vatcharaporn Esichaikul

Analyzing Censorship Behavior in Facebook Pages.
By Mr. Sakares Saengkaew
Supervisor: Dr. Raphael Duboz

An Empirical Study of License Plate Detection and Recognition Algorithm for Automatic Traffic Law Enforcement.
By Miss Nasa Zata Dina
Supervisor: Dr. Matthew Dailey

Challenges to Implement E-Gov Application: National Identity (NID) Card in Nepal
By Mr. Prakash Subedi

Supervisor: Dr. Vatcharaporn Esichaikul

Cloud Service for Recognition of Specific 3D Objects
By Mr. Apiporn Simapornchai
Supervisor: Dr. Matthew Dailey

DisQover: Location-based Social Network with Content Consolidation Capability
By Mr. Phatsakorn Thaveekittikul
Supervisor: Prof. Sumanta Guha

Drivers and Barriers of E-Business Adoption for Small Medium Sized Enterprises (SMEs) in the Agricultural Sector: A Case Study Indonesia
By Mr. Faishal Mufied Al-Anshary
Supervisor: Dr. Vatcharaporn Esichaikul

Evaluation and Comparison of E-services in Myanmar and Thailand.
By Miss Aye Mya Moe
Supervisor: Prof. Sumanta Guha

Feature Point Mapping for Agricultural Environments Using an Airborne Quadcopter.
By Mr. Niraj Shakya
Supervisor: Dr. Matthew Dailey

Give Me Some Credit: Predictive Analysis on the Risk of Credits
By Mr. Paul Honore
Supervisor: Prof. Sumanta Guha

Healthcare Insurance Exchange System in Thailand.
By Miss Suwanna Xanthavanij
Supervisor: Prof. Phan Minh Dung

Logistic Regression Applied to Driver's Alertness Prediction
By Mr. Mohamed Karim Touhami
Supervisor: Prof. Sumanta Guha

Mining News Articles to Predict A Stock Trend
By Mr. Salih Khan
Supervisor: Prof. Sumanta Guha

Prognosis of Diabetes Disease using Data Mining Classification Techniques: A Case Study of Phra Pok Klao Chanthaburi Hospital
By Miss Shreya Pradhan
Supervisor: Prof. Sumanta Guha

Web-Based Interactive 3D Cartography: A Case Study of AIT
By Miss Watanee Jearanaiwongkul
Supervisor: Prof. Sumanta Guha

4.3: SET – CONSTRUCTION ENGINEERING AND INFRASTRUCTURE MANAGEMENT FIELD OF STUDY



4.3.1 Introduction

The Construction, Engineering and Infrastructure Management field trains professionals to play leading roles in the international construction industry and in infrastructure development and management. It offers courses in four levels - operations, project, strategic issues and corporate issues. It prepares students to become effective managers and decision-makers familiar with modern techniques of construction management, engineering management and infrastructure management.

The field's courses are delivered based on a hierarchical knowledge scale that considers principles and fundamentals, applications (tools and techniques), and emerging issues. In offering courses spanning fundamentals to advanced, the emphasis is on shifting from classical to innovative knowledge.

4.3.2 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*)

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

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

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

Assistant Professor (Infrastructure management in developing countries, construction project management,

public transportation, non-motorized transportation, risk management)

4.3.3 Doctoral Students' Dissertation

Building Trust in Contractor-Owner Relationship in Construction Projects: A Case Study of Vietnam
By Mr. Nguyen Thanh Tam
Supervisor: Dr. B. Harimurti W. Hadikusumo

Internationalization of Construction Contracting Firms: An Empirical Evidence from Pakistan
By Mr. Ahsen Maqsoom
Supervisor: Dr. Chotchai Charoenngam

Life Cycle Management for Sustainability of Community Infrastructure Project
By Mr. Preenithi Aksorn
Supervisor: Dr. Chotchai Charoenngam

Risk Management in the Public Private Partnership Low-Cost Housing Project Management in

Thailand: the Grounded Theory Approach

By Miss Surangkana Trangkanont

Supervisor: Dr. Chotchai Charoenngam

4.3.4 Masters Students' Theses and Projects

Adoption of Differentiation Strategy for Consulting Company: A Case Study of VNCC

By Mr. Doan Duc Phi

Supervisor: Dr. Bonaventura H.W. Hadikusumo

Airport Construction Project Management of Airports Corporation of Vietnam: A Case Study of Phu Quoc International Passenger Terminal Building Project

By Mr. Hoang Manh Chi

Supervisor: Dr. Bonaventura H.W. Hadikusumo

An Investigation into the Strategies for the Success of the Can Tho Technology Incubator Park Project

By Mr. Toai Minh Nguyen

Supervisor: Dr. Bonaventura H.W. Hadikusumo

Assessment of Operation and Maintenance of Nam Ngum 1 and 2 Hydropower Plants in Lao PDR

By Mr. Silichantho Khamvongsot

Supervisor: Dr. Djoen San Santoso

Business Strategies of Soc Trang Traffic Construction Joint Stock Company

By Mr. Le Quang Dung

Supervisor: Dr. Bonaventura H.W. Hadikusumo

Causes and Effects of Delay in Cambodian Road Projects

By Mr. Sothy Soeng

Supervisor: Dr. Djoen San Santoso

Causes and Effects of Delays to Contractor in Vietnam: A Case Study of Bitexco Financial Tower Project

By Mr. Nguyen Minh Hien

Supervisor: Dr. Bonaventura H.W. Hadikusumo

Challenges in Adopting Earned Value Management Concept for Contractors: A Case Study of Omron Healthcare Factory Project (Phase 2) at Vietnam Singapore Industrial Park 2 and Khang Hy Construction Company

By Mr. Nguyen Thanh Tin

Supervisor: Dr. Chotchai Charoenngam

Constraint Management in Construction Using Building Information Modeling (BIM)

By Mr. Mian Atif Hafeez

Supervisor: Dr. Bonaventura H.W. Hadikusumo

Contractual Risks in Official Development Assistance (ODA) Infrastructure Project: A Case Study of the Ho Chi Minh City Water System

By Mr. Sang Quang Vuong

Supervisor: Dr. Bonaventura H.W. Hadikusumo

Contractor's Project Quality Management in Design and Build Contracts: A Case Study of Aeon Shopping Center Project

By Mr. Truong Thien Tam

Supervisor: Dr. Bonaventura H.W. Hadikusumo

Commercial Contract Management in the EPC Construction Project: A Case Study of Vung Ang 1 Thermal Power Plant Project

By Mr. Tra Thanh Tran

Supervisor: Dr. Bonaventura H.W. Hadikusumo

Contractor's Project Quality Planning and Control: A Case Study of SC Vivo City Shopping Mall Project

By Mr. Nguyen Van Ngoc Quyen

Supervisor: Dr. Bonaventura H.W. Hadikusumo

Cost Escalation Behaviour of Building Development Projects: A Case Study

of the Diamond Island Project, District 2, Ho Chi Minh City

By Mr. Do Danh Chi

Supervisor: Dr. Chotchai Charoenngam

Cost Management System of Petrovietnam Subsidiary Contractor for EPC Project

By Mr. Doan Anh Vu

Supervisor: Dr. Chotchai Charoenngam

Critical Success Factors Affecting Contract Administration in Building Projects in Thailand

By Mr. Sebghatullah Lodin

Supervisor: Dr. Bonaventura H.W. Hadikusumo

Design Management and Integrated Design Approach in Hospital Project: A Case Study of 1000 Bed Hospital Project in Binh Duong New City

By Mr. Le Duy Luc

Supervisor: Dr. Bonaventura H.W. Hadikusumo

Design Management in Metro Project: A Case Study in Station Design Adjustment of the Metro Line 2, Ben Thanh-Tham Luong

By Mr. Tu Dang Anh Nguyen

Supervisor: Dr. Chotchai Charoenngam

Design Management Using Building Information Management (BIM): A Case Study of VNCC Consulting

By Mrs. Ngo Hoai An

Supervisor: Dr. Bonaventura H.W. Hadikusumo

Design Quality Management in Construction Projects: A Case Study of Becamex City Center

By Mr. Tan Hoang Nguyen

Supervisor: Dr. Bonaventura H.W. Hadikusumo

Document Controller in a Design Engineering Project: A Case Study of Capacity Extension of Dinh Vu LPG Storage in Hai Phong-Vietnam

By Mr. Luong Thanh Trung

Supervisor: Dr. Bonaventura H.W. Hadikusumo

Effective Contract Management in Condominium Projects for Afghanistan
By Miss Mariam
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Effectiveness of Relational Contracting Using Social Interaction Theory Approach in Construction Projects in Myanmar
By Mrs. Naw Nyein Nyein
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Enterprise Financial Management of Building Contractors in Myanmar
By Miss Ei Ei Soe Win
Supervisor: Dr. Chotchai Charoenngam

Factors Affecting Implementation of Conceptual and Planning Stages of Nuclear Power Plant Projects in Vietnam
By Mr. Nguyen Quang Chuong
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Factors Influencing Financial Outcomes of the Residential Real Estate Company in Thailand
By Mr. Trai Suntivich
Supervisor: Dr. Chotchai Charoenngam

Financial Modelling of Hotel Investment from Feasibility Study to Completion: A Case Study of Mixed Hotel and Karaoke in Tan Truong Son Project
By Mr. Tran Dinh Truong
Supervisor: Dr. Chotchai Charoenngam

Information Flow Model for Project Schedule and Resources Planning Management
By Mr. Tran Duc Hien
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Integrated Project Schedule and Resources Plan
By Mr. Nguyen Hoang Long

Supervisor: Dr. Bonaventura H.W. Hadikusumo

Implementation of the Quality Management System in Local and International Construction Contractors in Afghanistan
By Mr. Ghulam Rasool Sarwary
Supervisor: Dr. Djoen San Santoso

Improvement of Project Management Practices for an Oil Refining and Petrochemical Project under International Project Financing Scheme: A Case Study of NSRP Complex Project
By Mr. Tran Anh Tuan
Supervisor: Dr. Chotchai Charoenngam

Lessons Learnt in Owner's Acquisition of On-Going Project: A Case Study of a Residential Project in Ho Chi Minh City
By Miss Dang Trinh Thanh Phuong
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Model of Project Contract Strategy of Quang Trach 1 Thermal Power Plant Project
By Mr. Ha Dinh Nien
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Organization and Project Development Strategies: A Case Study of CADIF Investment Jointstock Company (CIC)
By Mr. Le Van Son
Supervisor: Dr. Chotchai Charoenngam

Organization and Project Structure for Implementing a Jack Up EPC Project: A Case Study of PVShipyard Project in Vietnam
By Mr. Khiem Do Dao
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Organisation Structure: A Case Study of an Industrial and Civil Design Joint Stock Consultancy
By Mrs. Nguyen Thi Minh Ha
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Owner's EPC Contract Management Process for Power Plant Project: A Case Study in Vung Ang 1 Power Plant Project
By Mr. Binh Thanh Nguyen
Supervisor: Dr. Chotchai Charoenngam

Owner's Contract Administration in Building Construction Projects: A Case Study of Fortuneland Hotel Can Tho Project
By Mr. Trinh Lam Xuan
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Owner's Quality Management in an EPC Process Plant Construction Project: A Case Study of Vung Ang 1 Thermal Power Plant Project
By Mr. Nguyen Van Hoanh
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Owner's Risks Management in Building Projects: A Case Study of an Administrative Building Project in Nga Bay Town, Hau Giang Province
By Mr. Do Hoang Nam
Supervisor: Dr. Djoen San Santoso

Real Estate Project Development during Financial Difficulty
By Mr. Tran Cong Hoang
Supervisor: Dr. Chotchai Charoenngam

Owner's Roles in the Design Stage: A Case Study of Alila Villas Resort and SPA Project in Binh Thuan Province
By Mr. Huynh Kim Tuong
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Portfolio Financial Management for Infrastructure Projects
By Mr. Viet Nhat Nguyen
Supervisor: Dr. Chotchai Charoenngam

Project Cost Management of Infrastructure in Real Estate and Housing Development: A Case Study in Nigeria
By Mr. Jidayi Ulam
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Project Development Strategy for Industrial Zone: A Case Study of Cai Mep Industrial Zone in Vietnam
By Mr. Dau Hong Quan
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Project Management Application in an Advertising Projects: A Case Study of Soft Drink Advertisement
By Mr. Be Quang Bui
Supervisor: Dr. Djoen San Santoso

Project Management Process for Multiple Renovation Projects of Government Building in Hanoi City
By Mrs. Dao Thuy Chi
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Project Management Process In Post-Disaster Building Renovation Project
By Mr. Inwang Akpan Udo
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Project Performance Management in Public Infrastructure Projects: A Case Study of Quang Trung Bridge Project (Unit 2) Cantho City
By Mr. Le Minh Cuong
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Public Private Partnership in Vietnam and Korea
By Mr. Seung Hyun Yang

Supervisor: Dr. Bonaventura H.W. Hadikusumo

Risk Management for New Residential Development Project: A Case Study of New Residential Projects in Long Thoi Nhon Duc
By Mr. Mai Hoang Hai
Supervisor: Dr. Chotchai Charoenngam

Safety Management in Public Construction Projects: A Case Study of a High School Project
By Mr. Bui Phuong Nam
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Schedule Management in Multiple Contracting Conditions: A Case Study of Nam Con Son No. 2 Gas Project (Phase 1)
By Mr. Nguyen Dang Hai
Supervisor: Dr. Chotchai Charoenngam

Subcontractor Management: A Case Study of "Ersnt & Young Interior Fitting Out" for an Office in Hanoi City, Vietnam
By Mr. Hoang Manh Khai
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Supervision Consultant Service Risk Management in Vietnam: A Case Study for Cantho Urban Upgrading

Project Under Component 2, Phase 2, Consultant Package No. CSPH3
By Mr. Nguyen Phat Truong
Supervisor: Dr. Bonaventura H.W. Hadikusumo

Supply Chain of Construction Materials in Border Towns under the Impact of ASEAN Economic Community (AEC)
By Mr. Run Sereyath
Supervisor: Dr. Chotchai Charoenngam

Total Quality Management Application in an Architecture Company in Ho Chi Minh City, Vietnam
By Mr. Le Chi Thien
Supervisor: Dr. Bonaventura H.W. Hadikusumo

The Relationship between Happiness, Motivation, Performance of Construction Workers, and Project Performance in Myanmar's Construction Industry
By Miss Thae Su Naing
Supervisor: Dr. Djoen San Santoso

Uncertainty and Flexibility Considerations in the Planning of Thilawa Port Development Project in Myanmar
By Mr. Ko Ko Naing
Supervisor: Dr. Djoen San Santoso

4.4 SET – GEOTECHNICAL AND GEOTECHNICAL EARTH RESOURCES ENGINEERING FIELD OF STUDY



4.4.1 Introduction

The Geotechnical and Earth Resources Engineering field of study (GTE) provides with the education and training on the following areas of specializations, i.e., Soil Engineering, Engineering and Applied Geology and an interdisciplinary program of Geoexploration & Petroleum Geoen-gineering (GEPG). Besides the traditional subjects such as soil mechanics, rock mechanics, foundation engineering, earth structures, underground excavations, land subsidence, and landslide mitigations etc., geotechnical engineers and researchers are nowadays much involved in ground improvement, geosynthetic engineering, land reclamation, lightweight materials and forensic geotechnical engineering etc. To meet the increasing demands of the mining industry and especially the upstream sector of oil and gas exploration and production (E & P) , the courses in the field have been developed to

equip geotechnical and exploration engineers with skills in exploration geophysics, petrophysics, drilling, petroleum engineering, hydrogeology, geochemistry, and oil and gas economics. Since 2008 the field had successfully opened and operated two professional programs in Geoexploration & Petroleum Geoen-gineering (PME-GEPG) and Geotechnical Engineering & Management (PME-GEM), respectively, in Vietnam to meet the increasing demands of Vietnam in these areas.

4.4.2 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 geo-synthetic 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 equipments for vane tests, Dutch

cone tests, piezocone tests, pressure-meter tests, screw plate tests, electric logging, and vibration measurements.

Rock Mechanics Laboratory

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

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

Engineering Geology Laboratory

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

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

Geophysics Laboratory

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

electrode resistivity and induced polarization (IP) imaging system.

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

Geoexploration and Petroleum Geoengineering 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, petrophysical 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.

4.4.3 Faculty and Research Staff

Emeritus Professor

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

Full-time Faculty

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

Associate Professor (Tunnelling 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)

4.4.4 Doctoral Students' Theses

Application of Risk Assessment in Design of a Long Mountain Tunnel in Northern Thailand

By Mr. Kan Kaewkongkaew

Supervisor: Dr. Noppadol Phien-wej

4.4.5 Masters Students' Theses

Application of Fiber Optic Sensor in of PHC Pile Testing: A Case Study in Busan, Korea

By Mr. Do Tran Nam

Supervisor: Dr. Pham Huy Giao

Applications of Near-Surface Geophysics to Detect a Buried Gas Pipe

By Mr. Pollathorn Chariprasit

Supervisor: Dr. Pham Huy Giao

Assessment of Subsoil Conditions and Behaviour of Axially Loaded Single Pile in the Subsoil of Lahore

By Mr. Salman Ali Suhail

Supervisor: Dr. Noppadol Phien-wej

A Study of Foundation on Arid Soil in Kandahar City, Afghanistan

By Mr. Abdul Wahid Wahidi

Supervisor: Dr. Noppadol Phien-wej

Characteristics of Lateral Wall Movements in Deep Excavations in Ho Chi Minh City

By Mr. Than Duc Quoc Viet

Supervisor: Dr. Noppadol Phien-wej.

Comparison of Geotechnical Properties between Hai Phong and Ninh Binh Clays
By Miss Tran Thi Phuc
Supervisor: Dr. Pham Huy Giao

Erosion and Control for Exploration Works at KTL Mine, Phonsavan, Lao PDR
By Mr. Nguyen Quy Huy
Supervisor: Dr. Noppadol Phien-wej

Facies Analysis Using Borehole Imaging Data for an Oligocene Clastic Reservoir in the Cuu Long Basin
By Miss Thuong Nguyen Phuong Trang
Supervisor: Dr. Pham Huy Giao

Investigation on the Characteristics of Geosynthetic Clay Liners in the Laboratory
By Mr. Ekramuddin Tamim
Supervisor: Dr. Noppadol Phien-wej

Mitigation of Wellbore Instability on the Upper Section of a North Eastern Natural Gas Field, Thailand
By Mr. Pongpatch Vongyimyong
Supervisor: Dr. Pham Huy Giao

Ngapali-Yenandaung Petroleum System Modelling
By Mr. Aung Thwin Thu Aye
Supervisor: Dr. Pham Huy Giao

Osterberg Cell Testing for Cable-Stayed Bridge in Mekong Delta River
By Mr. Nguyen Quoc Khanh
Supervisor: Dr. Pham Huy Giao

Prediction of Long-term Settlement of the Thi Binh Soft Clay Improved by PVDs and Vacuum
By Mr. Do Xuan Hoang
Supervisor: Dr. Pham Huy Giao

Preliminary Assessment of Potential Shale Gas Resources for some Sedimentary Basins of Thailand
By Miss Chittanan Somakettarin
Supervisor: Dr. Pham Huy Giao

Rock Slope Engineering for Stability Evaluation of South Block Area at Trubaindo Coal Mining company
By Mr. Pricha Sonkaeo
Supervisor: Dr. Noppadol Phien-wej

Safety Assessment and Rehabilitation of Lampao Dam
By Miss Bharadee Soontronrojna
Supervisor: Dr. Noppadol Phien-wej.

Settlement Analysis for Dinh Vu Soft Clay Improved by PVD
By Mr. Nguyen Dinh Cuong
Supervisor: Dr. Pham Huy Giao

Settlement Analysis of Soft Ground Improvement by CDM at the SP-PSA International Port, Ba Ria Vung Tau, Vietnam

By Mr. Vu Minh Tam
Supervisor: Dr. Noppadol Phien-wej

Soil Characterization for the UMRT Line from Nam Thang Long to Tran Hung Dao, Hanoi
By Mr. Nguyen Dang Han
Supervisor: Dr. Pham Huy Giao

Soft Computing-Based Prediction of Porosity for a Fractured Granite Basement Reservoir
By Mr. Nakaret Kano
Supervisor: Dr. Pham Huy Giao.

3-Dimensional Analysis of Pile Response to Tunneling using Hardening Soil Model
By Mr. Sai Zayar Kyaw
Supervisor: Dr. Noppadol Phien-wej

Undrained Shear Strength of Soft Clay Deposits Underlying Long Phu Thermal Power Plant
By Mr. Bui Anh Tuan
Supervisor: Dr. Noppadol Phien-wej

Well Logging Interpretation for Pongsaikham Oil Field
By Ms. Charinrut Noijiw
Supervisor: Dr. Pham Huy Giao

Well Test Analysis Using Pressure Derivative for Fractured Reservoir
By Mr. Vijak Khupviwat
Supervisor: Dr. Pham Huy Giao

4.5: SET – INDUSTRIAL AND MANUFACTURING ENGINEERING FIELD OF STUDY



4.5.1 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.

4.5.2 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 hardware and 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 also provides specialized training and consultancy services in CAD, CAM, CNC Machining, Reverse Engineering, Rapid Prototyping, Packaging Technology, Flexible Manufacturing Systems [FMS], and Development of Postprocessor for 5-axis CNC.

The CIM Laboratory is equipped with training CNC machines. The available CAD/CAM software includes UNIGRAPHICS NX4, Master CAM 9.1, Mechanical Desktop 6, AutoCAD Inventor Series, SolidWorks 2005, CAM 2000, Mimics 6.3 & Magic 5.4.

Metrology Laboratory

Metrology Laboratory provides the hardware and software support for teaching and research activities in Industrial Systems Engineering. Metrology Laboratory is equipped with Measuring Instruments (Zeiss CMM, Mitutoyo Profile Projector, Taylor Hobson Surface Roughness Tester, Lab View Hardware & Software).

Simulation Laboratory

This lab is equipped with networks of Pentium PC for general applications and internet access, high end CAD/CAM & Simulation software such as ARENA and AutoMOD. In addition, a high performance computer facility with

parallel cluster is also available for research use.

4.5.3 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]

ERIKL J BOHEZ, BurgerlijkWerktuigKundig Electro-TechnischIngenieur, RijksUniversiteit Gent (State University Ghent,Belgium);KandidatuurBurgerlijkIngenieur, RijksUniversiteit Gent (State University Ghent, Belgium); TechnischIngenieur Electro-Mechanica, HogerTechnischInstituutSint Antonius Gent, (High Technical Institute Saint Antonius Ghent; Belgium).

Associate Professor(Computer Aided Design; Computer Aided Manufacturing; Computer Graphics; Computer Numerical Control; Five Axis Machining; Robust Control; Simulation of Metal Removal; [CNC/CAD/CAM ; Mold and Die Design, Eco-Design, Biomechanics, Industrial Packaging]

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

Associate Professor[Emergency 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 KOOMSAP, BEng, ThammasatUniv, 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.Galla Venkata Rama Krishna Acharyulu, Ph.D in Supply Chain Management from Osmania University(India),

Visiting Professor, currently Associate Professor in Operations & Supply Chain Management, Coordinator- MBA (Healthcare & Hospital Management) at the School of Management Studies, University of Hyderabad, Central University, Hyderabad-500046, India

4.5.4 Doctoral Students' Dissertation

Industrial and Manufacturing Engineering

Particle Swarm Optimization for Location Routing Problems
By Miss Liu Jie
Supervisor: Prof. Voratas Kachitvichyanukul

4.5.5 Masters Students Theses and Projects

Industrial and Manufacturing Engineering

An Integrated Production Inventory Model of Deteriorating Items Subject to Random Machine Breakdown with a Stochastic Repair Time
By Mr. Rubayet Karim
Supervisor: Dr. Huynh Trung Luong

Forecasting Inflation in Indonesia Using Hybrid Arima and Artificial Neural Networks Ensemble
By Miss Mega Silfiani
Supervisor: Dr. Huynh Trung Luong

Improving Process Conditions of Electrospinning-Based Rapid Prototyping for Scaffold Fabrication
By Mr. Alok Anil Parkhi
Supervisor: Pisut Koomsap

Supply Chain Coordination with Customer Return Using Composite Contract based on Buy Back Contract and Quantity Flexibility Contract
By Mr. Udomsak Wacharapinchai
Supervisor: Dr. Huynh Trung Luong

Toolpath Optimization for a Turgo Turbine Runner
By Miss May Thant Sin Supervisor: Assoc. Prof. Erik L. J. Bohez

4.6: SET – MECHATRONICS and MICROELECTRONICS & EMBEDDED SYSTEMS

FIELDS OF STUDY



4.6.1 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. Miniaturisation of IC and the possibilities of completely new technologies like nanotechnology have also been introduced.

4.6.2 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 (S5, S7200/300/400, INDRAMAT, BOSCH), distributed control systems (PCS7), operator panels (OP5, OP17/DP and OP35), a PC-based human machine interface package (WINCC) and networked field buses (PROFIBUS, INTER-BUS and SERCOS). The lab has mobile robots (NOMAD, PIONEER 2), robot arms (CRS), an industrial robot (KUKAKR15), a self-made open architecture CNC machine, CNC control systems (MTC200, SINUMERIK 8100/8400), image processing systems (DVT, MATROX) and FPGA's (XILINX-1i VIRTEX PRO, ALTERA). Software such as SYNOPSIS IC Design, ANSYS, ADAMS and many types of special sensors and actuators are also available for research use.

The Integrated Circuit Design laboratory gives students access to a wide variety of professional software applications including ANSYS, Orcad, ModelSim SE, 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, microactuators and micro-sensors design, computational electronics, and so on. Fabrication facilities are available through the National Electronics Technology Center and the National Science and Technology Development Administration located in nearby Science Park.

Mechatronics faculty and students work in close collaboration with industry and government sectors in the areas of industrial automation, robotics, control, system design and integration. Some examples of ongoing projects include a medical tele-analyzer, automated visual inspection systems, MEMS design, an autonomous flying robot, automating centrifuge machines, an autonomous underwater robot and automating crystallization processes.

Simulation Laboratory

This lab is equipped with networks of Pentium PC for general applications and internet access, high end CAD/CAM & Simulation software such as ARENA and AutoMOD. In addition, a high performance computer facility with parallel cluster is also available for research use.

IC Design Laboratory

The Integrated Circuit Design laboratory gives students access to a wide variety of professional software applications including ANSYS, Orcad, ModelSim SE, 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, microactuators and micro-sensors design, computational electronics, and so on. Fabrication facilities are available through the National Electronics Technology Center and the National Science and Technology Development Administration located in nearby Science Park.

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-organisation 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.

4.6.3 Faculty and Research Staff

Full-time Faculty

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

Associate 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*]

MONGKOL EKPANYAPONG, B.Eng., Chulalongkorn, Univ, Thailand; M.Eng. Asian Institute of Technology, Thailand, M.Sc., Ph.D., Georgia Institute of Technology, USA

Assistant Professor[*Embedded Systems, Computer Architecture, VLSI design (Low power design), Physical VLSI design, High Performance Computing, GPGPU, DSP*]

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]

THIPPUR SREENIVAS, Ph.D. Indian Institute of Technology, Bombay, India

Professor at Indian Institute of Science, Bangalore, currently, Research Scholar at Tata Institute of Fundamental Research, Bombay India.

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

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

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

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

METHA JEERADIT, Ph.D. (*Electrical Engineering*) from Stanford University, USA

Adjunct Faculty [*Electrical Engineering*]

APINUNT THANACHAYANONT, Ph.D. in Analogue Integrated Circuit Design

Department of Electrical and Electronic Engineering, Imperial College of Science, Technology and Medicine, London, U.K.

Adjunct Faculty (*Analogue and mixed-signal integrated circuits and systems for wireless communications*)

4.6.4 Doctoral Students' Dissertation

Mechatronics

Development and Balancing Control of an X-Y Planar Inverted Pendulum

By Mr. Suppachai Howimanporn
Supervisor: Dr. Manukid Parnichkun

Development of Double-Level Mouse-Mechanism Ball-Riding Robot
By Mr. Kanjanapan Sukvichai
Supervisor: Dr. Manukid Parnichkun

Three-Dimensional Model Reconstruction from Industrial Computed Tomography Scanned Data for Reverse Engineering
By Mr. Sutipong Kiatpanichgij
Supervisor: Dr. Nitin V. Afzulpurkar

4.6.5 Masters Students' Theses and Projects

Mechatronics

A Comparison of HOG and SURF Methods for Vehicles Type Classification
By Mr. Boonthuang Yodon
Supervisor: Dr. Mongkol Ekpanyapong

Anodic Aluminium Oxide (AAO) Membrane Fabrication Under Different Conditions and Comparison of Results
By Mr. Om Prakash Gujela
Supervisor: Dr. Nitin V. Afzulpurkar

Automatic Stroke Measurement on a Multi Disks Writer

By Mr. Chaweng Sapapporn
Supervisor: Dr. Mongkol Ekpanyapong

Cleaning Efficiency Improvement and Defect Reduction in Slider Heads Cleaning Process with Ultrasonic Optimization by DOE Technique
By Miss Arunrat Sukruang
Supervisor: Dr. Nitin V. Afzulpurkar

Development and Stabilization of a Monocycle Robot
By Mr. Pornpop Patanadarong
Supervisor: Dr. Manukid Parnichkun

Development and Waypoint Tracking Control of an Unmanned Aerial Vehicle
By Mr. Phiset Sanglohapanth
Supervisor: Dr. Manukid Parnichkun

Development of a Ball-Riding Robot Using 3-Perpendicular-Driving Wheels
By Mr. Li Jia
Supervisor: Dr. Manukid Parnichkun

Development of a Computer-Based Control and Automation System for Kinda Hydropower Plant, Myanmar
By Mr. Yan Naing Aye
Supervisor: Assoc. Prof. Erik L. J. Bohez

Effect of Binder and Diamond Grain Size on Roughness and Optical Bow of a Hard Disk Slider Bar
By Mr. Jittipong Dangtip
Supervisor: Assoc. Prof. Erik L. J. Bohez

Machine Automation Design Specification Improvement by Modular Prototype Design Methodology
By Mr. Sunan Maliwong
Supervisor: Dr. Nitin V. Afzulpurkar

Touch Down Detection at Spin-Stand Level by Touch Down Sensor
By Mr. Raksak Ruchiphornkasem
Supervisor: Mr. Brent Bargmann

2D Irregular Shape Parts Recognition for Automatic Assembly

By Mr. Sakol Kitkasiwat
Supervisor: Dr. Pisut Koomsap

Unit per Hour Control of a Solder Jet
Bonding Machine
By Miss Nootcharee Tarasaeng
Supervisor: Dr. Mongkol
Ekpanyapong

Microelectronics and Embedded Systems

Flexible Conveyor System for Toy
Manufacturing
By Mr. Srinivasudu Nallagoppula
Supervisor: Assoc. Prof. Erik L. J.
Bohez

Hard Disk Drive's Scratch Pattern
Classification using Digital Image
Processing Techniques
By Mr. Teerawisit Seehapanya
Supervisor: Dr. Mongkol
Ekpanyapong

Speed Negotiation Improvement for
Hard Disk Drive Serial ATA Interface
by Considering Host Compatibility
By Mr. Apisak Srihamat
Supervisor: Dr. Mongkol
Ekpanyapong

Thin Diamond-like Carbon Film
Characterization by Conductive
Atomic Force Microscope

By Miss Shirley Domingo Mejia
Supervisor: Dr. Mongkol
Ekpanyapong

Spiral Quality Analysis at Seeder
Tester Using Drive PCB
By Chaisit Siricharoenchai
Supervisor: Dr. Nitin V. Afzulpurkar

Web Based Reporting, Monitoring
and Triggering System for HDD
Backend Manufacturing
By Somkeat Wangchanachai
Supervisor: Dr. Nitin V. Afzulpurkar

4.7: SET – NANOTECHNOLOGY FIELD OF STUDY



4.7.1 Introduction

Nanotechnology

The Nanotechnology Program at AIT consists of a research facility and the academic/research arm as follows:

1. the Center of Excellence in Nanotechnology (COEN) is the research facility— an institute-wide independent research center managed by the Director; and
2. The Nanotechnology Field of Study (FoS) housed at COEN and managed by the Nanotechnology FoS coordinator. The Nanotechnology FoS provides interdisciplinary knowledge required to support research at COEN. The Nanotechnology FoS (AT79) is under the auspices of the School of Engineering and Technology (SET) at AIT. Students that enter the Nanotechnology Program first complete coursework offered by the Nanotechnology FoS during the first year before embarking on research.

COEN nanotechnology academic program offers Master's Degree of Science, Master's Degree of Engineering, Doctoral degrees, diplomas and certificates. Thesis-based Master's degree students are required to complete 48 credit hours consisting of course work (24 credit hours) and

research (24 credit hours). Doctoral students are required to finish 18 hours of coursework and 66 hours of dissertation study for a total of 84 credits. For Master's Degree leading to a Doctoral Degree, no courses are required but 72 credits of dissertation are required.

Students have a choice between two tracks of study: 1. The Life Sciences Track, and 2. The Engineering Track. Required courses starting for the 2016 August intake include AT79.08, Nanomaterials and Nanotechnology; AT79.12, Characterization Tools for Nanotechnology; and AT79.15, Chemical Synthesis of Nanomaterials. **Life Sciences Track students** are encouraged to take AT79.16 and AT79.17 Fundamentals of Nano-Biotechnology (I & II) and AT79.18, Nanotechnology for the Life Sciences. **Engineering Track Students** focus on AT79.10, Micro-Nano-Fabrication and AT79.11, MEMS and NEMs Technology as well as AT79.19, Solid State Physics for Nanotechnology; AT79.06, Catalysis; and AT79.07, Nanothermodynamics. Registering for AT79.02, Impact of Nanotechnology on Society and AT79.03, Intellectual

Property Rights for Technology Development Management are highly encouraged. Lastly, we offer AT79.13 and AT79.14, Advanced Seminars in Nanotechnology, courses that help prepare students for research programs

Center of Excellence in Nanotechnology (CoEN)

The Center of Excellence in Nanotechnology at AIT is an autonomous institute-wide center. The Center therefore supports cooperative research with all schools and centers at AIT. These include the School of Engineering and Technology (SET), the School of Environment Resource Development (SERD), the School of Management (SOM), AIT Extension Programs, the Yunus Center, the Center of Excellence in Sustainable Development in the Context of Climate Change (SDCC), the Asian Center for Innovation for Sustainable Agriculture Intensification (ACISAI), Center for Corporate Social responsibility (CSR) and other Centers at AIT.

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.

The Nanotechnology Program at AIT is designed to address the needs of knowledge-based industries in Thailand and the region. Because nanotechnology is found across a great majority of industries and academic institutions today, experts are needed to fill much anticipated job opportunities. It is our goal to help create these experts. Most of the graduates of the Nanotechnology Program go on to pursue doctoral work or occupy high levels of responsibility in industry. The Nanotechnology Program at AIT offers a wide range of applications that cater to engineers and scientists.

4.7.2 Research Facilities and Laboratories

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. There are seven laboratories at the Center of Excellence in Nanotechnology: three chemical laboratories, one physical properties laboratory, one biotechnology laboratory, one laboratory for instrumentation and one computer simulation laboratory. Most of our research is accomplished from the "bottom-up"— from atoms and molecules. Nanomaterials can be made from any kind of material. Therefore our focus is chemistry-based in that sense. Characterization by scanning electron (SEM) and transmission microscopy (TEM), x-ray diffraction (XRD), dynamic light scattering (DLS), specific surface area (BET) and other methods takes place at our neighborhood facilities located in Thailand Science Park: the National Nanotechnology Center (NANOTEC), the National Electronics and Computer Center (NECTEC) and the National Metals and Materials Technology Center (MTEC). We have broad ranging research programs with universities and companies in the region. This allows us to expand our capability and provide students with a high powered and exciting venue for research. 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.



4.7.3 Faculty and Research Staff

Director

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

Professor, [Carbon nanotube synthesis & thermodynamics, nano metal composite materials fabrication and optical properties, template synthesis of gold-55 quantum dot cluster synthesis& optical characterization]

Adjunct, Visiting and Affiliated Academic and Research Faculty

Visiting Faculty:

Dr. Siddharth Jabade, Ph.D. *Mechanical Engineering*, Indian Institute of Technology, Bombay; Current position: Professor Mechanical Engineering, Department of Mechanical Engineering, Vishwakarma Institute of Technology, Pune, India

Dr. Ishtiaque Syed, Ph.D. *Solid State Physics*, Case Western Reserve University; Current position: Department of Physics, University of Dhaka; Dhaka, Bangladesh

Adjunct Faculty:

Dr. Chanchana Thanachayanont, Ph.D. *Electronic Materials*, Imperial College of London; Current position: Principal Researcher, Department of Materials Technology for Hazardous Substances Free Products Laboratory, National Metal and Material Technology Center (MTEC), Thailand Science Park, Klong Luang, Thailand

Dr. Noppadon Nuntawong, Ph.D. *Optics*, University of New Mexico; Current position: Senior Researcher, Photonics Technology Laboratory (PTL), National Electronics and Computer Technology Center (NECTEC), Thailand Science Park, Klong Luang, Thailand

Dr. Supamas Daniwattayakul, Ph.D. *Nanotechnology*, Asian Institute of Technology; Current position: Researcher, Department of

Materials Technology for Hazardous Substances Free Products Laboratory, National Metal and Material Technology Center (MTEC), Thailand Science Park, Klong Luang, Thailand

Dr. Waleed S. Mohammad, Ph.D. *Optical Physics*, University of Central Florida; Current position: Center of Research in Optoelectronics, Communications and Control Systems (CROCCS), Department of Engineering, Bangkok University; Pathumthani, Thailand

Affiliated Faculty:

Dr. Anil K. Kumar, Ph.D. *Food Engineering and Bioprocess Technology*, Asian Institute of Technology; Current position: Director, Food, Agriculture and Biosystems Cluster (FABS), School of Environment Resource Development (SERD) at AIT; Klong Luang, Thailand

Affiliated: Dr. Oleg Shipin, Ph.D. *Microbiology*, Institute of Biochemistry and Physiology of Microorganisms, Moscow; Current position: Assoc. Professor,

Environmental Engineering

Affiliated: Dr. Faiz Shah, M.D., University of the Punjab, University of Louisville; Current position: Director, Yunus Center at AIT; ; Klong Luang, Thailand

Laboratory Technician

Mr. Suchart Jenteing, Bachelor's of Science, Chemistry, Ramkhamhaeng University

Management (EEM),

Administrative Officer

Ms. Jiraporn (Fah) Kudeerak, Bachelor's of Humanity, English, Bangkok University, Thailand

4.7.4 Doctoral Students' Dissertation

A Comparison of Different Zinc Stannate Structures Synthesized

At Room Temperature for Photodegradation of Dyes and Phenol

By Mr. Muhammad Najam Khan
Supervisor: Prof. Joydeep Dutta

4.8: SET – REMOTE SENSING AND GEOGRAPHIC INFORMATION SYSTEMS FIELD OF STUDY



4.8.1 Introduction

Geoinformatics comprising Remote Sensing (RS), Geographic Information Systems (GIS) and Global Positioning System (GPS) provides extremely useful tools for environmental and natural resources management. They are widely recognized as supporting tools for the planning, monitoring, and management of the appropriate utilization of resources at the country, regional and global levels.

While they represent multidisciplinary backgrounds, students in RS&GIS share a common interest, that is, to use remote sensing, GIS, GPS 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.

Furthermore, scientists, planners or engineers interested in these technologies should be familiar with past, present and future satellite systems, their appropriate usage, data acquisition and handling and integration with other data sources.

The curriculum well covers the theoretical aspects and application of space technology, especially in Remote Sensing and GIS. It provides students ample time to gain application know-how through laboratory sessions. Students are free to use satellite data received by the NOAA, AVHRR and MODIS Satellite Receiving Stations for their theses or research studies. Recently such as open source Geoinformatics climate change Monitoring using courses Geoinformatics, Advanced Application Development Advance Analysis Methods and Microwave Remote Sensing are added.

The demand for RS&GIS graduates is very high as there is lack of professionals in these disciplines, particularly those with a vast knowledge of the practical utilization of these technologies. Employment opportunities are available in a wide range of areas, including agriculture, forestry, coastal development and management, urban planning and development, public health, mapping and planning, disaster mitigation and environmental management.

Major areas covered in the coursework are fundamentals of remote sensing and GIS, earth energy interaction, atmospheric correction, application potential in various disciplines, GIS data sources, map projection, geostatistics, spatial modeling, automated mapping, digital terrain model, GPS data acquisition, and integration of GIS, remote sensing and GPS.

4.8.2 Research Facilities and Laboratories

The RS&GIS field of study provides excellent facilities for learning, research and projects which consists of the Digital Image Processing laboratory, Institute-wide GIS laboratory, Asia e-learning project experiment room, meeting rooms, and the Geo informatics Center laboratory topographic, landuse, soil, geology maps of Thailand and some aerial photographs, ALOS data, are also available. The RS&GIS library also provides students with more specialized books, journals, and computer manuals. Some of the technical magazines regularly available are International Journal of Remote Sensing, PE&RS, Int J of GIS, GIM International, and International Journal of Geoinformatics. Some equipment in its laboratory available for academic activities include: Arc GIS 10.2, ERDAS, ENVI, IDRISI TAIGA, Bentley System; Total Station; Trimble geoexplorer; Garmin GPS Series III and V; digital camera; wireless hub/switch; wireless USB; network switch; network hub; black/white and color laser printers; A4 and A0 scanners; RFID reader/writer, Sensors and Wi Fi Network, Spectrophotometer, Laser Range Finder, Echo Sounder, Sensor Web GIS; table and personal stereoscopes, SCINDA GPS Base Station, TOPCON Photogrammetry Station and others.

4.8.3 Faculty and Research Staff

Full-time Faculty

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

Professor (*Remote Sensing and GIS Applications, Environment, Disaster, Agriculture, Health, Applications Vehicle Tracking, GNSS and Indoor Positioning Systems*)

SHINICHI NAKAMURA, BSc, DSc, Tokyo Institute of Technology, Japan

Visiting Faculty (*Space Technology Engineering, Satellite Mission analysis and Earth Science, Flight Dynamics, and Positioning and Fundamental Technology on GNSS*)

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

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

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

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

Visiting Faculty

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

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

MARC SOURIS, PhD, Université de La Rochelle, France

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

RYOSUKE SHIBASAKI, BEng, MEng, University of Tokyo; DEng

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

Adjunct Faculty

SURAT LERTLUM, BS, Norwich University; MS, The George Washington University, USA; DTechSc Computer Science, Asian Institute of Technology, Thailand

Adjunct Faculty (*GIS, RS, Digital Image Processing, Surveying, Mapping*)

DURAIRAJU KUMARA RAJU, Msc, University of Madras, India, PhD, Bharathidasan University, India

Adjunct Faculty (*RSGIS and Application, Coastal Zone and Marine Environment*)

Affiliated Faculty and Research Staff

TARAVUDH TIPDECHO, BSc, MSc, ChiangmaiUniv, Thailand; DTechSc, Remote Sensing & GIS, Asian Institute of Technology, Thailand

Research Specialist I (*Advanced Mapping, Terrestrial Scanning*)

VIVARAD PHONEKEO, Bsc, Volgograd State Pedagogical University, Russia, MSc, DTechSc, Asian Institute of Technology, Thailand

Senior Research Associate (*Remote Sensing and GIS, NOAA AVHRR&Terra/Aqua MODIS receiving and processing system, Digital Image Processing, Computer Graphics, Spatial Data Visualization, MODIS Active Fire Monitoring System , Global Environment and Disaster Monitoring using MODIS*)

4.8.4 Doctoral Students' Dissertation

Assessment of Soil Salinity in a Tropical Zone using ALOS Palsar Satellite Imagery and ANN Model
By Miss Walaiporn Phonphan
Supervisor: Dr. Nitin K. Tripathi

Building Facade Modeling using a RANSAC-style Algorithm
By Mr. Kumpee Teeravech
Supervisor: Dr. Masahiko Nagai

Defining the Vertical Datum Based on an Equipotential Surface: A Case Study of Metro Manila
By Mrs. Rosalie Bandojo Reyes
Supervisor: Dr. Masahiko Nagai

Ecosystem Evaluation and Probable Land Use Projections on Deepor

Beel, A Ramsar Wetland in North East India

By Miss Chitrini Mozumder

Supervisor: Dr. Nitin K. Tripathi

Geospatial Analysis and Carrying Capacity Determination for Aquaculture Development in Phu Quoc Island, Vietnam

By Mrs. Nguyen Thi Hong Diep

Supervisor: Dr. Nitin K. Tripathi

Optimization for Ground Control Points Distribution with Influence of Surface Variance in Height: Case Study for Chiangmai Province, Thailand with Very High and Moderate Resolution Satellite Imagery

By Mr. Sudniran Phetcharat

Supervisor: Dr. Masahiko Nagai

Spatio-Temporal Diffusion Pattern and Hand, Food and Mouth Disease Hazard Zonation (HFMD-HZ) Model Using AHP and Fuzzy Logic in Northern Thailand

By Mr. Ratchaphon Samphutthanon

Supervisor: Dr. Nitin K. Tripathi

4.8.5 Masters Students' Theses

Bangkok Taxi Probe's Big Data Processing for Traffic Hotspot Analysis and Visualization Using the Apache Hadoop Distributed System

By Mr. Saurav Ranjit

Supervisor: Dr. Masahiko Nagai

Geospatial Analysis and Simulation of Urban Fire in Nong Chok District, Bangkok, Thailand

By Miss Praopanitnan Chaiyasang

Supervisor: Dr. Nitin K. Tripathi

Geospatial Analysis of Forest Fire Risk Using Terra/Aqua Modis Data and Other Spatial Factors

By Mr. Carles Simson Panjaitan

Supervisor: Dr. Nitin K. Tripathi

Greening the Urban Environment Using Geospatial Techniques A Case Study of Bangkok, Thailand

By Miss Nargis Kamal Uddin

Supervisor: Dr. Nitin K. Tripathi

Identify Potential Area and Financial Prospect of Rooftop Solar Photovoltaic (PV) by Using Remote Sensing and GIS

By Mr. Mohammad Dalower Hossain

Supervisor: Dr. Sarawut Ninsawat

Land Suitability Analysis and Mapping for Teak Plantation Using Remote Sensing and Geographic Information Systems in Gangaw District of Myanmar

By Miss Wint Yi Aung

Supervisor: Dr. Nitin Tripathi

Mapping of Groundwater Potential Zones Using the Analytic Hierarchy Process (AHP) Model with Geo-Spatial Data in Cambodia

By Mr. Sainglong Kaing

Supervisor: Dr. Masahiko Nagai

Spatial Epidemiological Study of Respiratory Diseases in Phitsanulok Province, Thailand.

By Mr. Prakash Madhav Nimbalkar

Supervisor: Dr. Nitin Tripathi

4.9: SET – STRUCTURAL ENGINEERING FIELD OF STUDY



4.9.1 Introduction

Structural engineering has always been seen as one of the few fields of study where one can combine real technical skills with artistic flair. Structural engineers are known to be people who enjoy innovation, opportunities, responsibility and excitement, whilst working within a creative profession. Structural engineers plan and design various structures such as buildings, bridges, sport stadiums, towers, and underground structures.

The built environment which is designed and constructed by structural engineers has an enormous impact on our everyday lives. In order to design and construct safe and economic structures, they need to keep abreast with the latest methods of structural analysis, modeling concepts for computation, advanced design, material technology, and improved knowledge in structural loadings. The field educates professionals who will be at the forefront of advanced research in Structural Engineering. They are trained to respond creatively to the

industrial requirements of
infrastructure development

4.9.2 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-valve 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 valve 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 pseudodynamic tests. The facility has been used intensively by many master and doctoral students in STE Field of Study.

Boundary Layer Wind Tunnel Laboratory

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

4.9.3 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

WORSAK KANOK-NUKULCHAI, 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; Nanomechanics*]

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

Professor [*Structural Dynamics; Earthquake Engineering (seismic hazard assessment, earthquake resistant design of structures); Wind Engineering (wind effects on structures, aeroelasticity, wind tunnel model tests); Bridge Engineering; Control of Structural Vibration*]

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

Lecturer [*Computer Methods of Structural Analysis; Finite Element Methods in Engineering (Finite Element Methods; Dynamic Problem & Wave Propagation Analysis; Absorbing Boundary Conditions; Material Nonlinearities; Soil-Structure Interactions; Precast Concrete Structures*)]

Visiting/Adjunct/Affiliated Faculty/External Expert

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*]

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 under ground structure; Seismic behavior of earth structure; Multi-Agent simulation; Development of Virtual Clearinghouse for earthquake disaster reconnaissance*]

RAKTIPONG SAHAMITMONGKOL, D.Eng., and 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*]

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

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

NAVEED ANWAR, D.Eng., M.Eng., AIT, Thailand; B.Sc.Eng., University of Engineering and Technology, Lahore, Pakistan.

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

TERAPHAN ORNTHAMMARATH, Ph.D., Rose School, Italy; M.Eng., ROSE School, Italy, and Universite Joseph Fourier, France; B.Eng., Chulalongkorn Univ, Thailand.

External Expert [Deterministic and probabilistic seismic hazard assessment, seismic risk and loss studies, earthquake strong ground motion, ground motion prediction equations (GMPEs), Seismic analysis and design of reinforced corrected structure, Structural Dynamic, Seismic Loss to nonstructural elements, Seismic analysis and design of lifeline structures]

BUI THANH TAM, D.Eng., and M.Eng., AIT, Thailand; B.Eng., HoChiMinh City University of Technology, Vietnam.

Senior Research Associate
[Computational Mechanics; Finite Element Analysis; Structural Analysis; Fluid-Structure Interaction; Parallel Computing; Software Development]

4.9.4 Masters Students' Theses

Appropriate Structural System Selection for Buildings in Afghanistan
By Mr. Emal Hand
Supervisor: Dr. Pennung Warnitchai

Experimental Study on Seismic Performance of Gravity Load Design Columns Retrofitted with Glass Fiber Reinforce Polymer
By Mr. J Yaw Sar
Supervisor: Dr. Pennung Warnitchai

Shear Behavior of Fiber Reinforced Concrete Beams
By Miss Aye Su Sandar Kyi
Supervisor: Dr. Pennung Warnitchai

Seismic Performance Evaluation on the Common Type of Residential Buildings in Yangon
By Mr. Ye Zarni Soe
Supervisor: Dr. Pennung Warnitchai

Seismic Performance of Hybrid Concrete-Steel Structural System Building
By Mrs. Mya Kyae Mone
Supervisor: Dr. Pennung Warnitchai

Seismic Performance Evaluation of the Xayaburi Hydro Power Plant's Spillway
By Mr. Mohammad Sorgul Abdulrahman
Supervisor: Dr. Pennung Warnitchai

Suppression of Tall Building Responses from Distance Large Earthquakes by Fluid Viscous Dampers
By Miss Khin Myat Kyaw
Supervisor: Dr. Pennung Warnitchai

Wake Structure and Aerodynamic Excitation of an Upstream Interfering Building
By Mr. Dave Montellano Osabel
Supervisor: Dr. Pennung Warnitchai

4.10: SET – TELECOMMUNICATIONS FIELD OF STUDY



4.10.1 Introduction

The **Telecommunications Field of Study** offers areas of specialization in transmission systems; switching systems; telematics; network planning, and in collaboration with the School of Management telecommunications management. The courses offered emphasize modern telecommunications skills in systems planning and engineering, telecommunications software development, and administrative and financial aspects of telecommunications management.

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.

4.10.2 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. It covers a wide variety of research in telecommunications ranging from modeling, analysis wire line and wireless systems to application and protocol development. Its research subjects are in coherent optical communications; congestion control, ATM, and B-ISDN networks; error correction and detection methods; mobile and Internet traffic studies;

multiple access strategies for cellular mobile, satellite systems, and cabled networks; network performance analysis, planning and design; and speech processing. Its research specializations are in broadband networks; network planning; switching systems; telecommunications management in collaboration with the

School of Management; telematics; and transmission systems.

Transmission and Switching Lab (TSL)

The Transmission and Switching lab is equipped with Nokia Digital Switching Exchange DX200 (DX220, DX210) that supports PSTN and ISDN. There are also several telephone switches, traffic simulators, protocol analyzer, PDH/SDH (STM1 & STM4) transmission systems, fiber optic line equipment, transmission line analyzer, error rate meter which are available for experiment in switching, transmission and internetworking. The switching and transmission systems are Integrated as real telecommunications network.

Among the applications whose study has been made possible by these systems are Operation and Maintenance, performance measurements of real narrowband and broadband telecommunication networks, as well as new services.

Network Planning Lab (NPL)

High performance computer aided network planning tools are supported by several workstations at the Network Planning lab. This lab provides hands-on experience design and optimization in radio network, fixed network and fiber optical network.

Wireless Lab (WL)

The main purpose of the Wireless laboratory is for measurement and performance analysis. It is equipped with Modulation and Error rate measurement meters, Simulation software like SATSIM, which was developed by the students, is a simulation package to calculate the sub-satellite points of a LEO/MEO/GEO and its orbital parameters. It also displays graphically on a two-dimensional earth map the instantaneous position and path traced by the satellite (Multi orbit and Multi satellite). Another is NMS/X, is a measurement system for GSM, DCS and NMT networks tracing, capable of measuring up to four networks simultaneously. The results are used for benchmarking service quality of operational cellular networks. These results can be analyzed and can be used for tuning the network parameters in NPS/X.

Communications Labs (CL)

The Communications lab is used to perform experiments courses under Signal and Systems, Communications Electronics, Digital Transmission Technology and Digital Signal Processing. Test bench equipment includes analog and digital oscilloscopes, function generators,

analog and digital Spectrum analyzers, Digital sampling oscilloscopes and DSP cards and workstations which have simulation applications like MATLAB.

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.

4.10.3 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*)

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.

[*Digital and Mobile Communications, Cooperative Diversity, Relay Systems, OFDMA Resource Allocation, Cognitive Radio: Detection/Estimation Techniques, Space Time Processing-MIMO Systems, Distributed Video Coding (DVC)*]

POOMPAT SAENGUDOMLERT, BSE, Princeton Univ; MS, PhD, Massachusetts Inst of Tech, USA

[*Communication theory, optical networks, resource allocation problems, and array processing; Recent research activities have focused on optical network designs based on existing infrastructure networks and communications for disaster management*]

ATTAPHONGSE

TAPARUGSSANAGORN, B.Eng, Chulalongkorn University, Thailand, M.Sc., Technische Universität Kaiserslautern, Germany, D.Tech., University of Oulu, Finland.

[*Smart energy grids: optimal energy scheduling, smart grid communications using cognitive radio based, spectrum sensing for cognitive radio systems, MIMO-OFDMA cooperative relay systems, cognitive radio based wide coverage rural broadband on TV white spaces, Resource allocation for MIMO-OFDMA systems, Digital image processing.*]

4.10. 4 Doctoral Students' Dissertation

Design and Analysis of Current Modulation on LEDs in OFDM-Based Indoor Optical Wireless Communications

By Mr. Muhammad Sohail

Supervisor: Dr. Poompat Saengudomlert

Performance Analysis of MIMO Based Femto-Cell Networks Using Interference Mitigation Protocols

By Mr. Zuhaib Ashfaq

KhanSupervisor: Dr. R.M.A.P.

Rajatheva

4.10.5 Masters Students' Theses and Research Studies

Energy Efficiency and System Performance of Green LTE Femtocell

By Mr. Umesh Gupta
Supervisor: Dr. Teerapat
Sanguankotchakorn

Factors Affecting Mobile Banking
Adoption and Telecom Infrastructure
in Myanmar

By Miss Moe Pwint Phyu
Supervisor: Dr. Teerapat
Sanguankotchakorn

IPv6 Meshed Topology for Battery
Powered Devices for A Smart
Metering Application

By Mr. Nikesh Man Shakya
Supervisor: Dr. Teerapat
Sanguankotchakorn

Optimization of Operating
Bandwidth and Subcarrier Transmit
Powers using Partial Pre-Equalization
for Optical OFDM Transmissions with
IM/DD

By Miss Jariya Panta
Supervisor: Dr. Teerapat
Sanguankotchakorn

Propagation Model Selection Engine
(PMSE)

By Miss Ei Theingi
Supervisor: Dr. Teerapat
Sanguankotchakorn

The Telecom Infrastructure and M-
Government Service Challenges: A
Bangladesh Case Study

By Miss Nusrat Ehsan
Supervisor: Dr. Teerapat
Sanguankotchakorn

4.11: SET – TRANSPORTATION ENGINEERING FIELD OF STUDY



4.11.1 Introduction

Industrialization and population growth have tremendous impacts in the movement of people and goods. Everyday, movement is hampered by congestion, insufficiency of public transport facilities, traffic accidents, and other conditions. Moreover, as manufacturing expands globally, businesses want to reduce transportation costs by limiting the number of distribution nodes. Concerns over congestion on highways, increasing pollution and hazardous materials all emphasize the need to effectively maximize transportation systems. Thus, the issue of transportation is obviously crucial, not only now but in the future.

The Transportation Engineering field exposes students to the process of alleviating transportation problems. The coursework and research in the area provide advanced knowledge in transportation planning and economics, traffic engineering and safety, and the design of highways/pavements and other transportation facilities. Transportation Engineering students acquire advanced skills concerning the planning, design, operations, maintenance, rehabilitation,

performance, and evaluation of transportation systems, including their economic and public policy aspects. The field imbibes in each student the development of analytic, problem-solving, design, and management skills suitable for public and private sector professional work.

4.11.2 Faculty and Research Staff

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.Eng., Asian Institute of Technology, Thailand; B.Eng., Chulalongkorn University, Thailand.
Assistant Professor (Traffic Simulation, Intelligent Transportation Systems, Travel Demand Forecasting, Discrete Choice Modeling, Transportation Infrastructure Investment)

Visiting / Adjunct Faculty

HIRONORI KATO, D.Eng., M.Eng., B.Eng., University of Tokyo, Japan
Visiting Associate Professor (Transportation planning and policy; travel behavioral analysis; transportation project evaluation)

KAZUSHI SANO, D.Eng., M.Eng., B.Eng., University of Tokyo, Japan
Visiting Associate Professor (Transportation Planning, Traffic Engineering, and Logistics)

TAKASHI NAKATSUJI, D. Eng., M. Eng., B. Eng., Hokkaido University, Japan.
Visiting Professor (Traffic Engineering, Traffic Flow Simulation, Winter Maintenance, Traffic Accident Reconstruction)

PIYAPONG JIWATTANAKULPAISARN, Ph.D., Imperial College London, United Kingdom; M.Eng., Asian Institute of Technology, Thailand; B. Eng., Chulalongkorn University, Thailand.
Adjunct Faculty (Wider Economic Impacts of Transport Infrastructure, Highway Development and Land Use, Financing Transport Infrastructure, Econometric Modeling for Policy Analysis, Statistical and Quantitative Methods)

for Transportation Analysis, Fuel Demand Modeling, Accident Risk Behaviours of Road Users, Traffic Safety Engineering and Evaluation of Road Safety Interventions)

Research Staff

Research Assistant

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

Research Assistant

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

Research Assistant

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

Research Associate

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

Research Associate

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

4.11.3 Doctoral Students' Dissertation

Performance Grading System Based on Indirectly Estimated Parameters for Thai Asphalt Binder

By Miss Nattaporn Charoentham
Supervisor: Dr. Kunawee Kanitpong

4.11.4 Masters Students' Theses and Research Studies

Accident Analysis of Yangon-Nay Pyi Taw Highway in Myanmar

By Mr. Sai Nyi Nyi Aung
Supervisor: Dr. Kunawee Kanitpong

A Comparison of Flexible Pavement Design Method between AASHTO 1993 and TRL Road Note 31: A Case Study of Mudon-Chaungnahkwa-Ka Wkareik

By Mr. Soe Htun Naing
Supervisor: Dr. Kunawee Kanitpong

Analysis of Factors Affecting the Severity of Motorcycle Casualties in Cambodia Using Bayesian Approach
By Mr. Sarm Sam Ath
Supervisor: Dr. Kunawee Kanitpong

A New Approach of Traffic State Estimation by Implementing Ergodic Theory into Kalman Filtering Technique

By Mr. Supapat Mahadthai
Supervisor: Dr. Kunawee Kanitpong

Bus Operational Characteristics: A Case Study of Ho Chi Minh, Viet Nam
By Mr. Nguyen Van Dung
Supervisor: Dr. Kunawee Kanitpong

Public Preferences and Acceptability Towards Sustainable Transport Policies in Dhaka City
By Miss Sirajum Munira
Supervisor: Dr. Djoen San Santoso

Impact of Motorcycle Crashes on Poverty: A Case Study in Thailand
By Miss Saowapha Boonaiem
Supervisor: Dr. Kunawee Kanitpong

Study of Vehicle Ownership in Yangon Using Household Data
By Miss Nandar Tun
Supervisor: Dr. Kunawee Kanitpong

4.12: SET – WATER ENGINEERING AND MANAGEMENT FIELD OF STUDY



4.12.1 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) field of study 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.

The WEM field of study covers five focal areas: Agricultural Water, Coastal Water, Urban Water, Water Resources, and Extreme Events and Risk Management. The curriculum is designed in such a way that students can specialize according to their

interests. Courses on Watershed Hydrology, Hydrodynamics, Water Resources Systems, and Concepts in Water Modeling provide the solid foundation to the advanced courses. The curriculum emphasizes tools and techniques in water resources planning and management.

Agricultural Water

Courses impart knowledge and skills necessary for the development and management of water resources for agriculture. They address various multi-disciplinary issues in the planning, design, implementation, operation and maintenance of irrigation and drainage projects and land and water conservation programs. Current researches 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
- Hydroinformatics 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 Management of Irrigation Systems (SOMIS) in collaboration with UNESCO-IHE, The Netherlands

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

4.12.2 Faculty and Research Staff

Emeritus Professor

ASHIM DAS GUPTA, BEng, Gauhati 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.

Associate 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.

Assistant Professor (*Climate change and adaptation, Integrated water resources management, Hydrology and water quality modeling, Groundwater development and management, Sustainable water management policy*)

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*)

ROBERTO CLEMENTE, BSAE, Univ of the Philippines at Los Baños; MEng, AIT, Thailand; PhD, McGill Univ, Canada.

Associate Professor (*Focal areas related to irrigation/ drainage, and land and water resource assessment and management; Studies on the impacts of fertigation on water quality, modeling surface/subsurface transport of water and solutes, performance evaluation of irrigation and drainage systems, and assessment of soil erosion hazard and soil quality dynamics in agricultural watersheds; Joint research on water harvesting and management and soil hydraulic characterization in sloping agricultural lands; Future research focuses on evaluation and optimization of soil, water, chemical and crop management schemes to enhance agricultural productivity without jeopardizing environmental quality*)

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 Supérieure 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*]

H. RAMESH, M.Tec., The National Institute of Engineering, Mysore, Ph.D., National Institute of Technology Karnataka, Kuvempu, India.

Visiting Assistant Professor [*Water Resources Engineering, Hydraulic, and Civil Engineering*]

SANTOSH G. THAMPI, M.Tech., IIT Madras, Ph.D., IISc, Bangalore, India

Visiting Professor [*Hydraulics, Water*

Resources Engineering, Soil and Civil Engineering]

Affiliated Faculty

SUTAT WEESAKUL, D.Eng, M.Eng, Asian Institute of Technology; BEng, Chulalongkorn University, Thailand [*Numerical computation in sea and coastal area including flood propagation using developed computer programs; Application in solving urban drainage problem using both engineering and management approaches; the on-line urban flood warning system at Sukhumvit, Bangkok, Thailand providing useful information in daily life during rainy season are disseminated in*

<http://www.wap.ait.ac.th>; Improvement of hydraulic design using physical hydraulic model test in hydropower; hydropower development projects in Lao and Myanmar and improvement in design of intake, diversion tunnel, riparian outlet, energy dissipater, spillway and head pond]

4.12.3 Doctoral Students' Dissertation

Assessment of Soil Erosion and Sedimentation under Land Use and Climate Change Scenarios in the Upper Nan River Basin, Thailand
By Mr. Pheerawat Plangoen
Supervisor: Dr. Mukand S. Babel

Development of Static and Dynamic Equilibrium Equations of Crenulate-Shaped Bays
By Mr. Somruthai Tasaduak
Supervisor: Dr. Mukand S. Babel

Integrated Analyses of Techno-Economic and Environmental Efficiencies of Hom Mali Rice Cropping Systems in Thailand
By Mrs. Kwansirinapa Thanawong
Supervisor: Dr. Sylvain R. Perret

Integrated Assessment of Climate and Landuse Change Impacts on Hydrology and Water Resources of the Koshi River Basin, Nepal
By Mr. Anshul Agarwal

Supervisor: Dr. Mukand S. Babel

4.12.4 Masters Students' Theses and Research Studies

Analysis of Dry and Wet Spells under Climate Change Scenarios: A Case of the Upper Mun River Basin, Thailand
By Mr. Bandara Mudiyansele
Madusanka Nuwan Thilakarathne
Supervisor: Prof. Mukand S. Babel

Analysis of Historical and Future Climate of Afghanistan
By Mr. Mohammad Hassan Hassanyar
Supervisor: Prof. Mukand S. Babel

Assessment of Groundwater Resources in Context of Climate Change: A Case Study of Mekong Delta in Vietnam
By Mr. Bach Viet Tran
Supervisor: Dr. Sangam Shrestha

Developing Benchmarking Based on Irrigation Performance Indicators: Application in Northeast Thailand
By Mr. Kayiranga Damascene
Supervisor: Dr. Damien Jourdain

Evaluation of Groundwater-based Irrigation System of Southeast Nepal Considering Water-Energy-Food Nexus Approach
By Mr. Saroj Adhikari
Supervisor: Dr. Sangam Shrestha

Evaluation of Field Scale Soil Moisture and Nutrient Simulation Models in Tropical Regions
By Miss Matchima Ussarawutthikit
Supervisor: Dr. Sangam Shrestha

Evaluation of Water Supply and Demand under Climate Change Scenarios in Kathmandu Valley, Nepal
By Mr. Manish Shrestha
Supervisor: Dr. Sangam Shrestha

Field Investigation on Causes of Dike Breaching by the 2011 Great Flood of Thailand

By Miss Wisanee Keawpoung
Supervisor: Dr. Sutat Weesakul

Investigating Socio-Economic
Impacts of Floods on the Poor: A
Case Study of Hari Rod River Basin,
Afghanistan

By Mrs. Fahima Sadeqi Nazhad
Supervisor: Dr. Akiyuki Kawasaki

Mapping Flood Inundation in the
Bago River Basin, Myanmar
By Na Mr. Aung Myo Khaing
Supervisor: Dr. Akiyuki Kawasaki

Multi-model Analysis of the Climate
Change Impact and Adaptation for
Hydropower Generation in the
Myitnge River Basin, Myanmar

By Mr. Min Khaing
Supervisor: Prof. Mukand S. Babel

Reservoir System Operation
Considering Environmental Flow: A
Case of Geum River Basin, Republic
of Korea

By Mr. Sangkwon Park
Supervisor: Prof. Mukand S. Babel

Satellite and Physically Based
Approaches for Flood Forecasting in
the Koshi River Basin, Nepal

By Mr. Md. Kamrul Hossain
Supervisor: Prof. Mukand S. Babel

Sedimentation Study at Rejoso Jetty
Using Numerical Model

By Mr. Ardiansyah Fauzi
Supervisor: Dr. Mukand S. Babel

Technical Efficiency of Rice
Production in Selected Irrigation
Schemes in the Northeastern Part of
Thailand

By Mr. Pratya Sutthiprapha
Supervisor: Dr. Damien Jourdain

Impact of Flooding on Groundwater
Quality in the Pho Thong District of
Ang Thong, Thailand

By Miss Thiantheera Piriya Wong
Prof. Mukand S. Babel

4.13: SET – INFORMATION AND COMMUNICATIONS TECHNOLOGIES AREA OF STUDY



4.13.1 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.

4.13.2 Research Facilities and Laboratories

There is a rapidly growing and constantly evolving interest in ICT throughout the academia and society. To support this, the evolution and the benefits of ICT in our lives, the ICT field of study at AIT continues to research and develop of ICT. The field of study covers a wide variety of research supported

by the body of faculty consisting of a multi-professional team of international experts in telecommunication, computer science, educational technology and related fields.

The faculty has a strong academic background ranging from wireless and optical networks, through hardware and software, to web education and other e-services.

Research subjects include those on ICT applications (e-services such as e-learning, e-health, e-governance, rural development, knowledge creation and knowledge dissemination); on the information technologies (e.g. operating systems, programming languages, information storage and retrieval); on the communication infrastructure (e.g. networks, transmission technologies, switching and routing). Research specializations are in adaptive technologies; computer-supported collaboration; 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.

4.13.3 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 supermodularity properties]

From Telecommunications Field of Study

TEERAPAT SANGUANKOTCHAKORN,
Associate Professor

R M A P RAJATHEVA, **Visiting Faculty**

POOMPAT SAENGUDOMLERT,
Adjunct Faculty

From Computer Science and Information Management Fields of Study

KANCHANA KANCHANASUT,
Professor

PHAN MINH DUNG, **Professor**

SUMANTA GUHA, **Professor**

MATTHEW N. DAILEY, **Associate Professor**

VATCHARAPORN ESICHAIKUL,
Associate Professor

PAUL JANECEK, **Visiting Faculty**

From Remote Sensing and Geographic Information Systems Field of Study

NITIN KUMAR TRIPATHI, **Professor**

KIYOSHI HONDA, **Associate Professor**

SARAWUT NINSAWAT, **Lecturer**

4.13.4 Masters Students' Theses and Research Studies

A Cross Layer Design Approach in OLSR Using Appropriate Weight Allocation to Bit Error Rate and Connectivity Index
By Miss Atchara Boonpratakej
Supervisor: Dr. Teerapat Sanguankotchakorn

Evaluation of a Suitable Relocation Area for Project Affected Villages in Dawei Special Economic Zone of Myanmar
By Mr. Minn Chan Soe
Supervisor: Dr. Masahiko Nagai

Evaluating and Mitigating the Impact of Nonlinearity Power Amplifiers on 60 GHz Wireless Communications
By Mr. Peerawat Methasupphasan
Supervisor: Dr. Teerapat Sanguankotchakorn

IndoorNavi: The Hybrid Indoor Navigation System based on Wifi and NFC Positioning Techniques
By Mr. Chairath Sirirattanapol
Supervisor: Dr. Sarawut Ninsawat

Media Server Based Multi-Country Group Call
By Mr. Yu Li
Supervisor: Dr. Teerapat Sanguankotchakorn

Semantic Web-Based Information System for the Dissemination of Agricultural Innovations
By Mr. Henriyadi
Supervisor: Dr. Vatcharaporn Esichaikul

4.14: SET – OFFSHORE TECHNOLOGY AND MANAGEMENT PROGRAM



4.14.1 Introduction

Rationale

Oil and Gas resources in the Southeast Asian region have been explored for several decades, especially following the global slump in oil and gas production during the early 1970's. Since then, the region has become one of the most productive oil and gas areas in the world. However, the global demand for skilled human resources of the upstream oil and gas industry greatly exceeds the supply and, therefore, regional companies are required to seek contract overseas worker to fill job vacancies; a situation that continues to exist after more than three decades of E&P activity in the region. The shortage of skilled manpower has recently become critical due to the tremendously high level of oil and gas exploration and production activity around the world that has occurred to meet the increasing global demand for energy, especially since China's becoming

the "world's factory", and the move towards deep water exploration and production.

Mission Statement

AIT's Offshore and Technology & Management Program (OTM) is the first of its kind to provide regional post-graduate study in upstream oil and gas education, and is designed to combine application-oriented course work, field studies and internships into a curriculum from which graduates are equipped with the skills and knowledge-and-practice-readiness to mitigate the shortages of skilled manpower in the upstream sector of oil and gas industry. As an industrial application-oriented program, OTM's unique characteristics offer a flexible study structure which allows students to build their own area of specialization in addition to the areas formally offered in the program, those areas being: Offshore Structural Design and Construction (OSDC), Oil and Gas Management (OGM). With the available teaching expertise; library

and laboratory facilities; multitude of courses from AIT's different schools; skilled and professional faculty members and staff; strong collaborations with overseas partner universities in Europe, Asia, Australia and North America; and strongly supported by oil and gas industries, AIT's OTM post-graduate program has become one of the most suitable post-graduate study for engineers and young managers to pursue higher professional careers in both the oil and gas industry and government bodies.

4.14.2 Faculty and Research Staff

Full-time Faculty

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

Professor of Practice

Adjunct Faculty

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

Science, Technical University of Isai;
Doctor of Science, Technical
University of Cluj Napoca

POOVADOL SIRIRANGSI, Master of
Business Administration, University
of Central Oklahoma the United
State; Doctor of Engineering, Asian
Institute of Technology, Bangkok,
Thailand

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

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

THITISAK BOONPRAMOTE, Master of
Science, Colorado School of Mines,

USA; Ph.D., Colorado School of
Mines, USA

WINAI OUYORNPRASERT, Master of
Engineering, Chulalongkorn
University, Bangkok, Thailand; Ph.D.,
University of Innsbruck, Austria

4.14.3 Masters Students' Theses and Internships

Analysis of Dents on Subsea
Pipelines due to Dropped Objects
By Mr. Agus Umar Ryadin
Supervisor: Assoc. Prof. Gregory L. F.
Chiu

A Progressive Petroleum Fiscal
Regime for Timor Leste
By Mr. Samuely Franky Beram Silva
De Araujo
Supervisor: Assoc. Prof. Gregory L. F.
Chiu

Effect of Heterogeneity on Gas
Material Balance Calculation

By Mr. Supachai Sabayjai
Supervisor: Assoc. Prof. Gregory L. F.
Chiu

Enhanced Project and Portfolio
Management for Offshore WHP
Contractor by using Project
Management Software

By Mr. Nathapol Suphrapitsiri
Supervisor: Assoc. Prof. Gregory L. F.
Chiu

Progress of Wellhead Platform
Decommissioning Activity for
Thailand: 2013 and Beyond

By Mr. Pawissawee Tangchittrong
Supervisor: Assoc. Prof. Gregory L. F.
Chiu

Chapter 5: SCHOOL OF ENVIRONMENT, RESOURCE AND DEVELOPMENT



5.1.1 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
-

5.1.2 Field of Study and Multidisciplinary Programs

Fields of Study

- Agricultural Systems and Engineering
- Aquaculture and Aquatic Resources Management
- Energy

- Environmental Engineering and Management
- Food Engineering and Bioprocess Technology
- Gender and Development Studies
- Natural Resources Management
- Pulp and Paper Technology
- Regional and Rural Development Planning
- Urban Environmental Management

Interdisciplinary Programs

- Agri Business Management
- Disaster Preparedness, Mitigation and Management
- Integrated Coastal Management
- Urban Water Engineering and Management
- Climate Change and Sustainable Development
- MBA in Energy Business

Professional Masters Programs (1 Year)

- Environmental Engineering and Management (in Vietnam)
- Urban Management (with HCMUARC)
- Energy Business Management (SERD and SOM)

5.1.3 Research Facilities and Laboratories

SERD provides laboratory, computer and information technology (IT) facilities for education and learning for graduate students, and research activities of graduate students, faculty, and sponsored and contracted projects.

SERD has six research laboratories in Agricultural Systems and Engineering, Aquaculture and Aquatic Resources Management, Food Engineering and Bio-process

Technology, Environmental Engineering and Management,

Each laboratory is unique with modern equipments, 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 two computer centers maintained by the SERD at the SERD Main building (one computer laboratory and one printing room). 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, 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.

5.1.4 School Governance

Dean of School

PROF. CHETTIYAPPAN VISVANATHAN
Ph.D in Chemical/Environmental Engineering, Institute de Genie Chimique, Institut National Polytechnique, Toulouse, France, 1988 (Government of France, Ministry of External Affairs Scholarship)

M. Engg in Environmental Engineering, Asian Institute of Technology, Bangkok, Thailand, 1984 (Government of Switzerland Scholarship).

5.2 SERD – AGRICULTURAL SYSTEMS AND ENGINEERING FIELD OF STUDY



5.2.1 Introduction

This field of study emphasizes on sustainable agricultural and related technologies development through holistic approach for efficient food production for small holder agriculture.

5.2.2 Research Facilities and Laboratories

Agricultural Systems and Engineering (ASE) Laboratory caters to researchers, which address sustainability in agricultural production. The facilities are capable for implementing excellent agronomic and engineering researches on soils, water and plant, such as, plant growth and development, soil fertility and management, integrated pest management, plant water requirement, etc. Facilities to conduct researches on terramechanics, ergonomics and tillage are also available. The engineering aspects of agricultural production are dealt with through innovations and development of machines and equipment to enhance productivity and reduce human drudgery. These

innovations are constructed at the ASE workshop.

Major laboratory equipment include a Spectro 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), ArcView 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.

5.2.3 Faculty and Professional Staff

Full-time Faculty

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

Professor (*Agricultural Development and Policy Analysis; Resource Development; Farming Systems; Natural Resources Management*)

PEEYUSH SONI; DEng
Associate Professor (*Instrumentation and Measurement Techniques; Design & Testing of Agricultural Machinery; Precision Agriculture; Analytical Techniques & Decision Tools for Agribusiness*)

AVISHEK DATTA; B.Sc, M.Sc. (B.C. State Agri. Univ., India); PhD, University of New England, Australia

Assistant Professor (Agricultural Environments, Crop Productivity Management, Crop Eco-physiology and Modeling, Advanced Agricultural Experimentation)

Visiting, Adjunct Faculty/Affiliated Faculty

ALEXANDER KEEN; PhD

Adjunct Faculty (*Agricultural Soil Mechanics; Tillage and Traction; Machine Design*)

CHAIYAPHOL KAEWPRAKSAENGKUL; PhD

Adjunct Faculty (*Agricultural Machinery Design & Testing; Instrumentation & Measurement; Quality Control & Assurance*)

ANUCHIT CHAMSING; PhD

Adjunct Faculty (*Agricultural Machinery Design & Testing; Agricultural Power & Machinery Management; Agricultural Systems Engineering*)

Professional Staff

WATTANAPORN MESKUNTAVON, DTechSc

Senior Laboratory Supervisor (*Crop Modeling; Farm Management; Laboratory Analyses of Soil and Plants*)

5.2.4 Doctoral Students' Dissertation

Anthropometry of Indonesian Agricultural Workers of Java and Madura Tribes in East Java and Its Application in the Agricultural Tools

By Mr. Robertoes Koekoeh Koentjoro Wibowo
Supervisor: Dr. Peeyush Soni

Design and Development of an Automatic Grading Machine for Oil Palm

(*Elaeis guineensis* Jacq.) Fresh Fruits Bunch (FFB) Using Non-Destructive Examination

By Mr. Muhammad Makky
Supervisor: Dr. Peeyush Soni

Effect of Controlled and Modified Atmosphere Storage on Qualities and Senescence of Dendrobium Orchid

By Mr. Warinthon Yimyong
Supervisor: Dr. Peeyush Soni

Production Risk Management and its Impacts at Farm Level: The Case of Pakistan

By Mr. Raza Ullah
Supervisor: Prof. Ganesh P. Shivakoti

5.2.5 Masters Students' Theses

Agricultural Mechanization in Nigeria: A Case Study of Akwa Ibom State

By Mr. Abasi-Akan Cyprian Ukpakha
Supervisor Dr. Peeyush Soni

Decision Making in Resource Use and Collective Actions: Performance Variation in Irrigation in Nepal.

By Miss Manita Ale
Supervisor: Prof. Ganesh P. Shivakoti

Development and Performance Evaluation of a Cassava Digger and Soil Separator

By Mr. Kritsana Naoprakhon
Supervisor Dr. Peeyush Soni

Energy Balance and Financial Analysis of Rice Production Mechanization in Jambi Province, Indonesia

By Mrs. Kiki Suheiti
Supervisor Dr. Peeyush Soni

Evaluation of Climate Change Impacts and Adaptation Measures for Rice Production in the Central Plain of Thailand Using Ceres-Rice Model

By Miss Cho Cho Win
Supervisor: Dr. Avishek Datta

Exploring Appropriate Replacement for Crops Violating Land Suitability by using GIS and AHP in Ubon Ratchathani Province, Thailand

By Mr. Mitesh Vishwas Sawant
Supervisor Dr. Peeyush Soni

Impact of Organic and Inorganic Fertilizers on Fruit Quality and Yield of Cucumis melo L.

By Mr. Natchapol Pinyochon
Supervisor: Dr. Avishek Datta

Land Suitability Evaluation for Agronomic Crops in Khost Province of Afghanistan

By Mr. Emal Wali
Supervisor: Dr. Avishek Datta

System Analysis of Rain-fed System of Rice Intensification Compared to Rain-fed and Irrigated Conventional Rice in the Central Cambodia

By Miss Hong Darath
Supervisor Dr. Peeyush Soni

5.3: SERD – AQUACULTURE AND AQUATIC RESOURCES MANAGEMENT FIELD OF STUDY



5.3.1 Introduction

AARM promotes research and development through aquaculture and small-scale capture fisheries. The Field of Study has a wide spectrum of activities enabling it to address poverty, constraints facing the promotion of sustainable management and utilization of aquatic resources. The central theme is capacity building: the advancement of individuals and institutions creating indigenous capacity in education, research and development within the region.

5.3.2 Research Facilities and Laboratories

Aquaculture Laboratory serves the academic and research programs of aquaculture and aquatic resources management (AARM) field of study. It is equipped with modern equipment to analyze water quality, nutrients in food and feedstuffs, and soil classification and their problems identification. Some of its major laboratory equipment includes a Distillation Unit; Extraction Unit; Incubator; UV/Vis Spectrophotometer; Soxtec, Fibertec and Kjeltac system,

microscope with camera, etc. The field facilities include a hatchery, outdoor tanks and earthen ponds for field research.

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), ArcView 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.

5.3.3 Faculty and Research Staff

Emeritus Professor

PETER EDWARDS, BSc, University of Liverpool, UK; PhD, University 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

AMARARATNE YAKUPITIYAGE, BSc, Univ of Kelaniya, Sri Lanka; MSc, AIT, Thailand; PhD, Univ of Stirling, Scotland.

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

KRISHNA R. SALIN, B.F.Sc. and M.F.Sc. (Aquaculture), Kerala Agricultural University, Kochi, India; PhD (Mariculture), Central Institute of Fisheries Education (Deemed University), Mumbai, India; Postdoctoral research, Queensland University of Technology, Brisbane, Australia.

Assistant Professor (*Applied genetics, selective breeding, Hatchery management and grow-out techniques, Biofloc technology*)

Research Staff and Affiliated Faculty

RAM C. BHUJEL, BSc, Institute of Agriculture and Animal Sciences, IAAS, Chitwan, Nepal; MSc and PhD, AIT, Thailand;

Senior Research Scientist and Affiliated Faculty (*Biostatistics and Research Design, Curriculum Development, Women in Aquaculture, Broodstock Nutrition/Management and Fry Production, Technology Transfer/Extension*)

A Comparison among Three Stocking Densities of Tilapia (*Oreochromis niloticus*) Fry in an Aquaponic System with Lettuce (*Lactuca Sativa* L)

By Miss Tran Anh Tuyet
Supervisor: Dr. Peeyush Soni

Effect of Dietary Betaine on the Spawning Performance of Nile Tilapia (*Oreochromis niloticus*) Broodstock.

By Mr. Muhammad Rauf Akbari
Supervisor: Dr. A. Yakupitiyage

Effect of Mixed Feeding Schedules with a Single Diet on the Reproductive Performance of Nile Tilapia (*Oreochromis niloticus*)

By Mr. Wasim Sabbir
Supervisor: Dr. A. Yakupitiyage

By Mr. Ekrem Ayna
Supervisor: Dr. A. Yakupitiyage

Stakeholder Perceptions on the Hau River Ecosystem Services and the Potential Changes to them under Hypothetical Pangasius Farming Scenarios in An Giang Province, Vietnam

By Miss Nguyen Thi Kim Quyen
Supervisor: Dr. A. Yakupitiyage

5.3.4 Masters Students' Theses and Research Studies

Isolating and Analyzing Insulin-Like Growth Factor-I (IGF-I) from Cultured European Seabass (*Dicentrarchus labrax*) Linnaeus, 1758

5.4: SERD – ENERGY FIELD OF STUDY



5.4.1 Introduction

Energy related academic program at AIT was established in 1979. So far, over 1,200 students have graduated in the Energy studies. As of December 2014, about seventy 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 four areas.

- Electric Power System Management (EPSM)
- Energy Technology (ET)
- Energy Policy Planning and Economics (EPPE)
- MBA in Energy Business (MBA-EB)*
- PhD in Energy Business*

**These two programs are offered jointly by Energy SERD and SOM*

Details regarding Energy field of study activities are available at www.serd.ait.ac.th/energy

5.4.2 Research Facilities and Laboratories

Energy Laboratory serves as a facility for conducting experimental studies for courses, carrying out students and sponsored research, and testing of energy equipments as well as providing hands-on training. Laboratory functions are focused mainly on solar thermal energy, photovoltaics, biomass energy, energy management, thermodynamics and heat transfer, and electrical measurement and analysis. The laboratory facilities include two indoor laboratories, an energy park and a meteorological station. The indoor laboratories are equipped with experiment setups, testing apparatus and measuring equipment for thermal and electrical management studies, thermodynamics, fluid mechanics and heat transfer, and electrical power supply management. Energy Park covers 3980-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 calorimeter; and a Gas chromatography.

The SERD Computer Lab IV in the Energy Building has a large number of computer 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.

5.4.3 Faculty and Research Staff

Full-time Faculty

SIVANAPPAN KUMAR, BE, Univ of Madras, India; MEng, AIT, Thailand; PhD, Inst Natl Polytechnique, Toulouse, France.

Professor [Renewable energy resources and technologies: Climate change and green house gas mitigation: energy and sustainable development]

WEERAKORN ONGSAKUL, BEng, Chulalongkorn Univ, Thailand; MS, PhD, Texas A&M Univ, USA.

Associate Professor (Artificial Intelligence Applications to Power Systems; Parallel Processing Applications; Power System Operation & Control; Power System Deregulation & Restructuring)

P. ABDUL SALAM, BSc.Eng (Hons.) University of Peradeniya, Sri Lanka; M.Eng. D.Eng. AIT

Assistant Professor (Bioenergy, Renewable energy; Energy conservation and efficiency) ; Energy, environment and climate change issues; Heat recovery systems)

JAI GOVIND SINGH, Ph.D. in Electrical Engineering, Indian Institute of Technology, Kanpur, India

Assistant Professor (Power system planning; Operation and control; FACTS controllers; Re-structuring of Electric Industry, Demand side management; Grid integration of renewable energy resources; Power distribution systems; Smart Grid, Micro grid)

SHOBHAKAR DHAKAL, B.E., NIT, Surat; M.E., AIT, P.HD., Tokyo.

Associate Professor Area of interest/specialization: Modeling of Energy and carbon Emissions, Scenarios Policy Analyses

Visiting Faculty

AUMNAD PHDUNSILP, B.Ind Tech, Sirpatum University, M.Sc., Tekn.Lic in Energy Technology, PhD. in Industrial Engineering

Visiting Faculty [Energy Statistics and Energy Demand Forecasting]

BRAHMANAND MOHANTY, BSc, SAICE, India; MSc, AIT, Thailand; PhD, Institut National Polytechnique of Toulouse, France

Visiting Faculty [Cogeneration, Demand-side management, Energy auditing and conservation, Energy Efficiency policies; and Rational use of technology]

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]

Research Staff

Ms. Neriza Cabahug, Research Assistant
GNESD

Ms. Watcharathorn Chantinmathorn, Secretary (GMSARN Project)

Ms. Maria Kathrina Grauto, Research Associate (ERIC)

Ms. Parichart Kammeerak, Secretary (ERIC)

Ms. Shuvee Neupane, Research Associate, GNESD

Ms. Ashish Shrestha, Research Associate, APN Project

Ms. Shamima Akhter, Program Officer, PMEEM, UNIDO

Mr. Aurosree Biswas, Research Associate, UNIDO Project

Mr. Ashan Perera, Research Assistant, Water-Energy-Food Nexus

Mr. Arnab Chaudhuri, Research Assistant Energy FoS

5.4.4 Doctoral Students' Dissertation

A Study on CaO-Based Catalytic Tar Reforming for H₂-Rich Gas Production in Chemical Looping Gasification

By Mr. Jakkapong Udomsirichakorn
Supervisor: Dr. P. Abdul Salam

Energy and Environmental Conservation Policy Options in Pakistan: An Investigation under the Recursive Dynamic Computable General Equilibrium Framework

By Mr. Arshad Mahmood

Supervisor: Charles O. P. Marpaung

Multi-Objective Economic Dispatch by Stochastic Weight Trade-Off Particle Swarm Optimization

By Mr. Saksorn Chalermchaiarbha

Dr. Weerakorn Ongsakul

Optimization and Characterization of Palm Ethyl Ester Produced by Mechanical Agitation and Ultrasonic Assistance

By Miss Kate-Natee Noipin

Supervisor: Prof. Sivanappan Kumar

Studies on Steam-Air Mixture Condensation in a Vertical Tubes to Enhance Heat Transfer with/without Thermal Energy Storage

By Miss Chanamon Chantana

Supervisor: Prof. Sivanappan Kumar

5.4.5 Masters Students' Theses and Research Studies

Climate Change and Sustainable Development (CCSD)

GHG Emissions of a Hotel in Chiang Mai, Thailand

By Miss Supansa Luansak

Supervisor: Prof. S. Kumar

Energy

Agricultural Waste to Energy: A Case Study of Nakhon Si Thammarat Province

By Mr. Surachet Yanwaree

Supervisor: Dr. P. Abdul Salam

An Assessment on Urban Energy Access in the Slum Areas of Shwe Pyi Thar Township, Yangon City, Myanmar

By Mr. Aung Phonn Kyaw

Supervisor: Prof. Sivanappan Kumar

Application of Wattmon for System Design and Performance Improvement of Solar PV Systems

By Mr. Thanongsak Kaewsaiuathong
Supervisor: Prof. Sivanappan Kumar

A Study on the Steam Generation System in a Pulp and Paper Mill

By Mr. Stevanus Ronald Hasiholan Panggabean

Supervisor: Prof. Sivanappan Kumar

A Study on Street Lighting in the AIT Campus

By Mr. Ekawut Chayakul

Supervisor: Prof. Sivanappan Kumar

A Study on Electricity Generation using Biogas from Anaerobic Co-Digestion of Napier Grass and Poultry Manures in Thailand

By Miss Nopparat Apichatsiritham

Supervisor: Dr. P. Abdul Salam

Electric Vehicle as a Transportation Option for Vientiane: Impact on Transport Energy Demand, GHG Emission and Implications for Electricity Planning

By Mr. Vinalong Phonekeo

Supervisor: Dr. Shobhakar Dhakal

Flicker Problem Assessment of Different Wind Turbine Models in a Distribution System

By Miss Krongsiri Mongkholkaset

Supervisor: Dr. Jai G. Singh

Impact of High Solar Rooftop PV Penetration on Voltage Profile in a Distribution System

By Mr. Rung Punyachai

Supervisor: Dr. Weerakorn Ongsakul

Impact of Location and Penetration Level of Solar PV on Fault Current in a Distribution System

By Miss Thitiporn Chaipattanawan

Supervisor: Dr. Jai G. Singh

Impact of Network Reconfiguration on Distribution Network Performance with Solar and Wind Generation using Non-Dominated Sorting Particle Swarm Optimization

By Mr. Subas Ratna Tuladhar

Supervisor: Dr. Jai G. Singh

Impact of Plug-in Electric Vehicles on Voltage Imbalance in Distribution System

By Miss Somticha Panich

Supervisor: Dr. Jai G. Singh

Impact of Solar PV Penetration on Harmonic and Flicker Problems and Their Mitigation in the Distribution System

By Miss Pathatai Dharmasaroj

Supervisor: Dr. Jai G. Singh

Improvement of Uncertain Power Generation of Rooftop Solar PV Using Battery Storage Energy Management System

By Miss Anchuleeporn Chersin

Supervisor: Dr. Weerakorn Ongsakul

Installation and Performance of Parabolic Trough Solar Collector

By Miss Wichayaphorn Phoosap

Supervisor: Prof. Sivanappan Kumar

Load Curtailment Minimization in Intentional Islanded Networks and Its Restoration Strategy Considering Voltage Stability Issues

By Mr. Nachapol Wongwantanee

Supervisor: Dr. Jai G. Singh

Offshore Wind Energy in Thailand: A Case Study of Koh Tao

By Mr. Nattapan Sawaddiyakorn

Supervisor: Dr. P. Abdul Salam

Operational and Economic Assessment of Microgrid: A Case Study of Mae Sariang, Thailand

By Mr. Pornchai Chaweewat

Supervisor: Dr. Jai G. Singh

Optimal Placement of Vehicle-to-Grid Charging Station in Distribution System Using Particle Swarm Optimization with Time Varying Acceleration Coefficients

By Mr. Jukkrapun Prasomthong

Supervisor: Dr. Weerakorn Ongsakul

Performance Enhancement of an Unbalanced and Harmonically Distorted Three Phase Radial Distribution Network by Optimal Placement of a Capacitor Using DSA

By Miss Happy Aprillia

Supervisor: Dr. Jai G. Singh

The Effectiveness of Energy Management System Training Program and Improving the Energy Performance of Thai Industries

By Mr. Patipat Songkiatkul

Supervisor: Prof. Sivanappan Kumar

Voltage Control Strategies for Grid-Connected Solar PV Systems

By Miss Orawan Phochai

Supervisor: Dr. Weerakorn Ongsakul

Voltage Stability Assessment of DFIG Wind Turbine in Different Control Modes

By Miss Chanokwan Veerasathian

Supervisor: Dr. Weerakorn Ongsakul

MBA-EB

Effectiveness of Subsidy Policy in Addressing Barriers to Renewable Energy Technology Deployment in Nepal

By Miss Anantaa Pandey

Supervisor: Dr. Shobhakar Dhakal

Estimating Greenhouse Gas Emission in the Corporate Sector: The Case of AIT, Thailand

By Miss Panipak Thipthiangthae

Supervisor: Dr. Shobhakar Dhakal

5.5: SERD – ENVIRONMENTAL ENGINEERING AND MANAGEMENT FIELD OF STUDY



5.5.1 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. The two major focal areas are Environmental Technology and Management, and Water and Wastewater Engineering.

5.5.2 Research Facilities and Laboratories

The Environmental Engineering and Management (EEM) 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 EEM 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; Microcentrifuge.

5.5.3 Faculty and Research Staff

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 and Dean, School of Environment, Resources and Development (*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*)

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 and Adjunct Faculty

CHONGRAK POLPRASERT, BEng, Chulalongkorn Univ, Thailand; MEng, AIT, Thailand; PhD, Univ of Washington, USA.

Adjunct Faculty (*Hazardous Waste Engineering; Resources Recovery; Sanitation*)

DOULAYE KONÉ, MSc, Univ of Cocody, Côte d'Ivoire; MSc & M Advance Studies, Université de Liège, Belgium; PhD, Swiss

Federal Institute of Technology Lausanne, Switzerland.

Adjunct Faculty (*Water and Sanitation*)

HUNG NGUYEN-VIET, BSc, Hanoi Univ of Education, Vietnam; MSc, PhD, Univ of Franche-Comté, France.

Adjunct Faculty (*Life and Environmental Sciences*)

JEAN O. LACOURSIÈRE, BSc, Msc, Univ of Quebec at Trois-Rivieres, Canada; PhD, Univ of Edmonton (Alberta), Canada

Adjunct Faculty (*Integrated Aquatic Ecosystem Management*)

KARE HELGE KARSTENSEN, BS, MS, Univ of Oslo; MBA, Heriott Watt Univ, UK; MLaw, Univ of Oslo; DrSc, Norwegian Univ of Science and Technology, Trondheim, Norway.

Visiting Faculty (*Sustainable Management of Industrial and Hazardous Wastes; Management of Hazardous Chemicals, POPs and Obsolete Pesticides; Sustainable Production of Cement and Co-Processing of Alternative Fuel and Raw Materials and Hazardous Wastes; Control and Minimization of Unintentionally Produced POPs (dioxins, furans, PCBs and HCB) and Application of Best Available Technologies & Best Environmental Practices (BAT/BEP)*)

KIMBERLY NEIL IRVINE, BSc, Toronto Univ, Canada; MSc, PhD, McMaster Univ, Canada.

Visiting Faculty (*Hydrology and Water Resource Management, with specific emphasis on evaluating water quality in urban-impacted water bodies*)

NGUYEN CONG THANH, BSc, Laval, Canada; DSc, Laval Canada.

Adjunct Faculty (*Environmental Technology and Management*)

SIDDHARTH K. JABADE, BE and ME, Univ of Pune, India; PhD, IIT Bombay, India.

Adjunct Professor (*Intellectual Property Specialist*)

Research Staff

ARAYA WICHEANSAN, BSc

Research Assistant

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

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)

CHAIYAPORN IMSAPSANGWORN, MSc

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, BSc

Research Assistant

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

CHUTHATHIP SIRIPONG, MEng

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)

HUYNH HAI VAN, MSc

Research Associate

(Manages research projects, prepares technical reports and presentations)

JARUWAT WATANATANACHART, BEng Research Assistant (Laboratory operating and sample analysis, prepares technical reports and presentations, collaborating with research partners)	(Manages research projects; assists in project coordination, prepares project reports, prepares project budgets and manages project finances; assist team leader in training activities)	Research Assistant (Laboratory operating and sample analysis, prepares technical reports and presentations, collaborating with research partners)
JINTANAN WATCHARASING, MSc Research Associate (Manages research projects, prepares technical reports and presentations)	NGUYEN PHAM THI THAI HA, BEng Research Assistant (Laboratory operating and sample analysis, prepares technical reports and presentations, collaborating with research partners)	PANTAPORN SITTPLANGKOON, MSc Research Associate (Manages research projects, prepares technical reports and presentations)
JIRAPA DATHONG, MSc Research Associate (Manages research projects, prepares technical reports and presentations)	NGUYEN PHAN DONG, 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)
JIRARUT PHUANGNUI, MSc Research Associate (Manages research projects, prepares technical reports and presentations)	NGUYEN THANH HANG, MSc Research Associate (Manages research projects, prepares technical reports and presentations)	PAUL JACOB, MEng Research Associate (Manages research projects, prepares technical reports and presentations)
KANOKWAN WANGCHINA, 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)	POONYANOCH SUWAN, BEng Research Assistant (Laboratory operating and sample analysis, prepares technical reports and presentations, collaborating with research partners)
KANTEERA RUNGPHUREE, BSc Research Assistant (Laboratory operating and sample analysis, prepares technical reports and presentations, collaborating with research partners)	NIPAPORN NAKNUAL, BSc Research Assistant (Laboratory operating and sample analysis, prepares technical reports and presentations, collaborating with research partners)	PRAEWPIMON POLNGAM, MSc Research Associate (Manages research projects, prepares technical reports and presentations)
MOHAMMAD DALOWER HOSSAIN, MSc Research Associate (Manages research projects, prepares technical reports and presentations)	NITASHA ARORA, MSc Research Associate (Manages research projects, prepares technical reports and presentations)	PRAKRITI KASHYAP, MSc Research Associate (Manages research projects, prepares technical reports and presentations)
NAN KHAM SYNE, MSc Research Associate (Manages research projects, prepares technical reports and presentations)	ORATHAI KLUBBARNKOH, MSc Senior Technician (Chemistry and environmental analysis for environmental samples as well as prepare for chemical and glassware for laboratory courses and research projects)	QIUSHI XU, MEng Research Associate (Manages research projects, prepares technical reports and presentations)
NAREERAT PUNVITAYAKUL, BSc Research Assistant (Laboratory operating and sample analysis, prepares technical reports and presentations, collaborating with research partners)	PANNADA KHONGSRICHAROEN, MSc Research Associate (Manages research projects, prepares technical reports and presentations)	RARI CHONTONG, BSc Research Assistant (Laboratory operating and sample analysis, prepares technical reports and presentations, collaborating with research partners)
NAWATCH SURINKUL, DEng Research Specialist	PANNITA SUTTISAWAD, BEng	RATTANASRI KHAJEEFA, BSc Research Assistant

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

RAWINTRA EAMRAT, MSc

Research Associate

(Manages research projects, prepares technical reports and presentations)

SAKKARIN MEEPHON, BSc

Research Assistant

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

SALAYA PHUNSIRI, MSc

Senior Laboratory Supervisor

(Administrative for Environmental Engineering Laboratory as well as supervise for experimental and research projects on water, wastewater, air pollution, and solid wastes analysis)

SANIRAT SANGMUANG, MSc

Research Associate

(Manages research projects, prepares technical reports and presentations)

SAROJ KUMAR CHAPAGAIN, PhD

Senior Research Engineer

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

SITA CHAIHENG, BSc

Research Assistant

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

SOMPOKE KINGKAEW, MSc

Research Associate

(Manages research projects, prepares technical reports and presentations)

SOPIDA KHAMYAI, BSc

Research Assistant

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

SUMETH WONGKIEW, MEng

Research Associate

(Manages research projects, prepares technical reports and presentations)

SUPHATCHAI RUJAKOM, BSc

Research Assistant

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

SUPUSANEE DULYAKASEM, MEng

Senior Research Associate

(Manages research projects, prepares technical reports and presentations)

SUTHIRAT KITTIPONGVISES, PhD

Senior Research Engineer

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

SUTINEE JAIRUANG, BSc

Research Assistant

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

T.D.W. RATHNAYAKE, BSc

Research Assistant

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

TAWANCHAI SETJANTUEK, BSc

Research Assistant

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

TEERANUN NEAMHOE, BSc

Research Assistant

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

THANARAT THEPPHARAK, BSc

Research Assistant

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

presentations, collaborating with research partners)

TIPPAWAN SINGHOPON, BEng

Research Assistant

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

UNCHANA SUKJAROEN, BSc

Research Assistant

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

VAIDEHI A. DEOSTHALI, MBA

Research Associate

(Manages research projects, prepares technical reports and presentations)

VITHARUCH YUTHAWONG, MEng

Research Associate

(Manages research projects, prepares technical reports and presentations)

WARAPHORN KHAJORNFUNG, BSc

Research Assistant

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

WASITTHISAK KIRIYA, MSc

Research Associate

(Manages research projects, prepares technical reports and presentations)

WATTANAPONG SANGCHUN, BSc

Research Assistant

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

WIPADA WANREAK, MSc

Research Associate

(Manages research projects, prepares technical reports and presentations)

WITCHUDA TASSANASUWAN, BSc

Research Assistant

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

5.5.4 Doctoral Students' Dissertation

Application of the Micellar-Enhanced Ultrafiltration Combined with the Activated-Carbon-Fiber Filtration for Nickel and Zinc Removal from Aqueous Solution

By Mr. Bundit Channarong
Supervisor: Dr. Oleg Shipin

Detoxification Process of Jatropha Seed Cake and Potential of Value-Added Products

By Mrs. Umaphon Sadubthummarak
Supervisor: Dr. Thammarat Koottatep

Estimating Particulate Matter Concentration and Composition over South East Asia using Satellite AOT Data

By Mr. Muhammad Zeeshan Ali Khan
Supervisor: Prof. Nguyen Thi Kim Oanh

High Solid Anaerobic Digestion and Management of Distillers Grains from Cassava-Ethanol Production

By Mrs. Phonthida Sensai
Supervisor: Prof. Chettiyappan Visvanathan

Jumpstarting Strategic Water Resources Protection from a Changing Global Perspective: Post-Conflict Management gaps and Prospects in Afghanistan

By Mr. Habibullah Habib
Supervisor: Dr. Oleg Shipin

Modeling Greenhouse Gas Emissions from Combined Sewer Systems

By Miss Thitirat Chaosakul
Supervisor: Dr. Thammarat Koottatep

Treatment for Soil Contaminated with Dioxin using Nano-Assisted Photodegradation and Biological Technologies

By Mr. Nguyen Duy Binh
Supervisor: Prof. Nguyen Thi Kim Oanh

5.5.5 Master Students' Theses and Research studies

A Biokinetic Study of Biocarriers in Thermophilic Two-Stage Anaerobic Reactors

By Miss Lina Indawati
Supervisor: Prof. Chettiyappan Visvanathan

Air Pollution Emission Inventory for Power Generation Activity in Phnom Penh, Cambodia

By Mr. Chen Sophanna
Supervisor: Prof. Nguyen Thi Kim Oanh

Air Quality and Climate Co-Benefits of Optimistic Scenarios for Vehicle Fleets in Bangkok Metropolitan Region

By Miss Kwanchanok Siangjun
Supervisor: Prof. Nguyen Thi Kim Oanh

Anaerobic Digestion of Cassava Pulp with Co-substrates: Effect of Organic Loading Rate

By Mrs. Nitasha Arora
Supervisor: Prof. Ajit P. Annachhatre

Application of UV LEDs for Turbid Wastewater Disinfection

By Mr. Chenghui Zeng
Supervisor: Prof. Chettiyappan Visvanathan

Assessment of Beverage Carton Waste in Thailand Using Material Flow Analysis (MFA)

By Miss Tantima Suwannapan
Supervisor: Prof. Chettiyappan Visvanathan

Assessment of Health Risks of Waste Pickers: Case of a Vientiane Landfills, Lao PDR

By Mr. Kongneun Chantakeo
Supervisor: Dr. Oleg Shipin

Bringing Urban Sustainability to the Wetlands of the AIT Campus and Its Environs: Water Quality - Plant Biodiversity Nexus

By Miss Zhang Xuying
Supervisor: Dr. Oleg Shipin

Carbon Footprint and Water Footprint of Cassava Starch Production: A Case Study in Thailand

By Miss Jitpisut Bukate
Supervisor: Prof. Ajit P. Annachhatre

Characterization and Assessment of Municipal Solid Waste for Energy Recovery Options in Phetchaburi, Thailand

By Miss Wiratchapan Suthapanich
Supervisor: Prof. Chettiyappan Visvanathan

Development of Emission Inventory for Vehicle Fleet in Ho Chi Minh City to Estimate Environment and Climate Co-benefit of Faster Technology Intrusion

By Miss Huynh Hai Van
Supervisor: Prof. Nguyen Thi Kim Oanh

Development of A Zero Liquid Discharge Approach for Cooling Tower Blowdown in Petrochemical Industry

By Mr. Mov Chimeng
Supervisor: Prof. Chettiyappan Visvanathan

Disinfection of Septic Tank Effluent by Nano-Silver Coated Granular Activated Carbon

By Mr. Jaruwat Watanatanachart
Supervisor: Dr. Thammarat Koottatep

Emission Inventory for Domestic Cooking and Solid Waste Open Burning in Yangon, Myanmar to Assess Potential Co-benefits from Various Control Scenarios

By Miss Khin Phoo Pwint Kyi
Supervisor: Prof. Nguyen Thi Kim Oanh

Hydraulic Evaluation and Performance of Conventional Septic Tank under Thermophilic Condition

By Miss Rawintra Eamrat
Supervisor: Dr. Thammarat Koottatep

Impacts Posed by AMD from Abandoned Gold Mines and Assessment of Reactive Materials for Remediation

By Mr. Machodi Mathaba
Supervisor: Prof. Ajit P. Annachhatre

Inorganic Media Selection for Permeable Reactive Barrier in Treating Heavy Metals from Acid Mine Drainage Contaminated Groundwater

By Mrs. Emelda Obianuju Orakwue
Supervisor: Prof. Ajit P. Annachhatre

Investigation of the Cesium-137 Concentration in Residential Soils of Nakhon Nayok Province in Thailand
By Mrs. Srisawan Somkit
Supervisor: Prof. Ajit P. Annachhatre

Isolation and Characterization of Bacteroides Bacteria as a Tool for Tracking Sources of Fecal Pollution from Animals
By Mr. Yuranan Leknoi
Supervisor: Dr. Kwanrawee Sirikanchana

Monitoring for Characterization of Levels and Source Apportionment of Particulate Air Pollution in Yangon, Myanmar
By Miss Khing Thwe Oo
Supervisor: Prof. Nguyen Thi Kim Oanh

Pathogen Die-off and Performance of Heated Drying Bed Treating Fecal Sludge
By Miss Su Su Myat
Supervisor: Dr. Thammarat Koottatep

Pilot Scale Study on Separation of Triethylene Glycol from Gas Separation Plant Waste Stream using Membrane Distillation Process
By Mr. Vitharuch Yuthawong
Supervisor: Prof. Chettiyappan Visvanathan

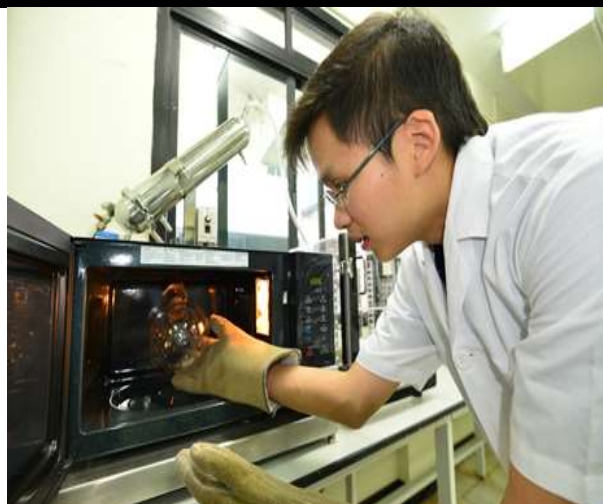
Performance Assessments on Microwave Disinfection and Vacuum Filtration Treating Fecal Sludge
By Miss Pannita Suttisawad
Supervisor: Dr. Thammarat Koottatep

Process Analysis of Canal-Based Sanitation System in Thailand: Towards Sustainable Development
By Mr. Kenichi Umeyama
Supervisor: Dr. Oleg Shipin

Reviewing Progress of Water Safety Plans in Thailand
By Miss Patthamon Jeasakul
Supervisor: Dr. Oleg Shipin

Role of Wetlands in Urban Sustainability of AIT Campus and the Environs: Towards an Eco-City
By Mr. Issah Dawd
Supervisor: Dr. Oleg Shipin

5.6: SERD – FOOD ENGINEERING AND BIOPROCESS TECHNOLOGY FIELD OF STUDY



5.6.1 Introduction

This field of study focuses on value addition of agricultural commodities by the application of bioconversion in various sectors of industry and agriculture. These include food processing, aquaculture, cosmetics and health care. BPT focuses on the application of microorganism and enzymes to meet the demands of the developing countries of the region. FE focuses on the systems for handling, processing and storage of both durable and perishable food products in developing of small- scale food processing technologies. Emphasis is also placed on the determination of material properties; design and development of new processes and related equipment; and computer modeling and simulation of postharvest and food processing operations.

5.6.2 Faculty and Research Staff

Full-time Faculty

ATHAPOL NOOMHORM, BSc, Kasetsart Univ, Thailand; MEng, Lamar Univ, Texas; PhD, Louisiana State Univ, USA.

Visiting Professor (*Agro-Industrial Development, Food Process Technology, Post Harvest Technology, Supply Chain*)

ANIL KUMAR ANAL, DVM., University of Agriculture, Faisalabad, Pakistan; MSc. and PhD., AIT, Thailand

Associate Professor (Food Engineering & Bioprocess Technology Field of Study (*Animal Biotechnology, Food and Pharmaceutical Biotechnology, Dairy and Meat Process Technology, Food Colloids and Biopolymer, Functional Foods, Food Safety, Micro-/Nanoencapsulation, Bionanotechnology*))

FABS Cluster Coordinator (Food, Agriculture & Biosystems Cluster)

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*)

MUANMAI APINTANAPONG, BSc, KMITL Ladkrabang, Thailand; MSc, AIT; Doctor of Technical Science, AIT, Thailand.

Adjunct Faculty (*Food Process Engineering, physical properties of food materials*)

Research & Lab. Supervisor

IMRAN AHMAD, B.Tech. (Hons.)- Agric. (Food Science and Technology) NWFP Agric. University Peshawar, Pakistan; M.Sc (Hons.)- Agric. (Food Science and Technology) NWFP Agric. University Peshawar, Pakistan; M.Sc. Postharvest and Food Process Engineering, AIT Thailand; Ph.D. Logistics and Supply Chain Management (Agri-Food), SIIT, Thammasat University, Thailand (On-going)

Research Staff

ASHAN PERERA, B.Sc. in Engineering, Mechatronics, AIT, Thailand

Research Assistant (SEA- EU NET 2 Project) FEBT, SERD, AIT, Thailand

KISHOREE KRISHNA KUMAREE, B.Tech, Amity University, India; M.Eng, AIT, Thailand

Research Associate (SEA- EU NET 2 Project) FEBT, SERD, AIT, Thailand

KSHITIJ PARAJULI, B.Eng. Civil Engineering, Tribhuvan University, Nepal; M.Eng. Water Engineering and Management, AIT, Thailand

Research Associate (SEA EU NET 2 Project, FEBT, SERD)

MEDHA KHATIWADA, B.Eng. Civil Engineering, Tribhuvan University, Nepal; M.Eng. Water Engineering and Management, AIT, Thailand

Research Associate (SEA-EU NET 2 Project) FEBT, SERD, AIT, Thailand

MRIDULA THAPA, B.Sc. South China University of Technology, China; M.Sc. Food Engineering and Bioprocess Technology, AIT, Thailand

Research Associate (Sustain EU-ASEAN Project) FEBT, SERD, AIT, Thailand

PRAJAKTA SIDDHESH MORE, B.Sc. Biotechnology, MPASE College, Mumbai University, India

Research Assistant (Sustain EU-ASEAN Project) FEBT, SERD, AIT, Thailand

5.6.3 Grants and Sponsored Research Completed in 2014

Taking Stock of How Smart Food Production Can Reduce Food Losses and GHG Emission (Smart Food Processing)

Duration: 1-Dec 13 – 30 June 14

Project Investigator(s): Dr. Anil Kumar Anal

Sponsor: FAO (Food and Agriculture Organization)

Total Contracted Amount (THB): 480,000

Laboratory Training Program in Food Engineering

Duration: 24-Sept-13 - 31-Jan-14

Project Investigator(s): Dr. Anil Kumar Anal and Mr. Imran Ahmad

Sponsor: Sultan Qaboos University, Oman

Total Contracted Amount (THB): 63,320

5.6.4 Doctoral Students' Dissertation

Prevalence and Bio-control of Foodborne Pathogens (Salmonella and Staphylococcus aureus) in Raw and Ready-to-Eat Poultry Meat.

By Mr. Ali Akbar

Supervisor: Dr. Anil K. Anal

5.6.5 Masters Students' Theses and Research Studies

Antibiotic Resistance of Faecal Indicator Bacteria of Drinking Water Sources at Ayeyarwaddy Delta Region of Myanmar.

By Mr. Shane Htet Ko

Supervisor: Dr. Anil K. Anal

Biodiesel Production from Waste Palm Oil Catalyzed by Hierarchical ZSM-5 Supported Calcium Oxide.

By Mr. Yusuf Muhammad Zein

Supervisor: Dr. Anil K. Anal

Effect of Supportive Enzymes on Fermentation Performance and Oil Recovery Efficiency from Corn Dry-Grind Ethanol Production

By Miss Pawarisa Luangthongkam

Supervisor: Prof. Athapol Noomhorm

Extraction of Bioactives from Thanakha (Naringi crenulata) and their Applications in Soap.

By Miss Tin Marlar Thein

Supervisor: Dr. Anil K. Anal

Formulation of Nanoemulsion of Bioactive Extracts in Seed Oil of Moringa Oleifera by Phase Inversion and Ultrasonic Emulsification Methods.

By Miss Pantaree Boonpanya

Supervisor: Prof. Athapol Noomhorm

Optimization of the Extraction of Bioactive Compounds from Nettle Leaves and their Bioencapsulation for Controlled Gastrointestinal Release.

By Miss Mridula Thapa

Supervisor: Dr. Anil K. Anal

Optimized Extraction Method and Augmentation of SOD (Superoxide Dismutase) Activity in Black Soybean Functional Beverage

By Miss Zhu Xiaoyun

Supervisor: Dr. Anil K. Anal

Production by Lintnerization-Autoclaving and Physicochemical Characterization of Resistant Starch III from Sago Palm (Metroxylon sagu rottb)

By Miss Wiwit Sri Werdi Pratiwi

Supervisor: Dr. Anil K. Anal

Product Development and Quality Evaluation of Broken Rice-Soybean Based Milk

By Mr. Sam Sambath

Supervisor: Prof. Athapol Noomhorm

Sequential Extraction of Hyaluronic Acid and Collagen from Chicken Eggshell Membrane and Formation of Chitosan-Hyaluronic acid-Collagen-Based Biopolymeric Nanoparticles

By Miss Nina Karla Mallorca Alparce

Supervisor: Prof. Athapol Noomhorm

Production and Characterization of Fermented Coconut Beverage Using Kefir Grains and Mixed Cultures of Probiotics

By Mr. Tabkrich Khumsap

Supervisor: Prof. Athapol Noomhorm

5.7: SERD – GENDER AND DEVELOPMENT STUDIES FIELD OF STUDY



5.7.1 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.

5.7.2 Faculty and Research Staff

Full-time Faculty

KYOKO KUSAKABE, BA, Sophia University, Tokyo, Japan; MSc, PhD, AIT, Thailand.

Associate Professor (Women's employment in informal economy; Labor migration, Cross-border trade; Gender and development policy and planning; Gender issues in fisheries/aquaculture.)

PHILIPPE DONEYS, Honours B.A., University of Toronto, Canada; MA, University of London, UK; PhD, Institut d'Etudes Politiques de Paris, France.

Assistant Professor (New Technologies, Industrialization and Gender HIV/AIDS; Gender Politics,

Civil Society and Human Rights; Gender, Migration and Trafficking in Asia)

Visiting/Adjunct/Affiliated Faculty

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)

REINA ICHII, B.A Economics, Tokyo Women's Christian University, Tokyo, Japan; M.A International Studies, Sophia University Tokyo Japan; Ph.D Economics,

University of South Australia, Adelaide, Australia, Ph.D preliminary Studies, Economics Hitotsubashi, University, Tokyo, Japan,

Visiting Faculty (Selected Topic: Gender and Development Economics)

KARABI BRUAH, BA, St Mary's College, India, MA, MPhil & Ph.D , North Eastern Hill University, India and Ruhr University-Bochum, Germany.

Adjunct Faculty (Selected Topic: Gender and Health)

Research Staff

BERNADETTE RESURRECCION, **Visiting Senior Research Fellow,**

Adapting to Climate Change in Peri-urban Southeast Asia

DR DONNA L. DOANE **Senior Researcher,** AusAid funded project on women's economic empowerment and social protection in the Greater Mekong Sub-region

MANRAJ GREWAL **Managing Editor,** of Gender, Technology and Development

Dr RUTMANEE ONGSAKUL

Programme Coordinator, Adapting to Climate change in Peri-Urban Southeast Asia

JHOZINE DAMASO

Program Officer, Adapting to Climate change in Peri-Urban Southeast Asia

CHALISARA SUPARAT

Research Associate, NTNU Road project

CHRISTINE WIDJAYA

Program Officer, AusAid Project

PARICHART KHAMMEERAK

Research Assistant, NTNU Road/Toyota/NTNU China/Wotro Project

Administrative Staff

Ms Agnes Pardilla, Program Officer

5.7.3 Doctoral Students' Dissertation

Gender, Vulnerability and Adaptations to Growing Climate-related Agricultural Water Scarcity in a Rural Community in Central Vietnam

By Mrs. Huynh Thi Anh Phuong

Supervisor: Dr. Bernadette P. Resurreccion

5.7.4 Masters Students' Theses and Research Studies

Changes in Intra-household Relations: Reflections on Myanmar Migrant Women Workers in the Entertainment and Sex Industries in Mae Sot, Tak Province

By Miss Nang May Phu Mon

Supervisor: Dr. Philippe Doney

Gender Dimension of HIV Health Care Services and Treatment of Myanmar Migrant Workers in Mae Sot, Thailand

By Mr. Naing Aung Lynn

Supervisor: Dr. Philippe Doney

Gender Participation in Forest Resource Management: Benefit Sharing Mechanisms in Thuong Nhat Commune, Bach Ma National Park's Buffer-Zone, Thua Thien Hue, Vietnam

By Miss Nguyen Thi Hong Van

Supervisor: Dr. Kyoko Kusakabe

Health Care and Help Seeking Behavior in Rape Cases in Myanmar

By Miss Su Su Yin

Supervisor: Dr. Philippe Doney

HIV/AIDS and the Impact of Stigma in Accessing Health Services in Kavre, Nepal: A Gender Perspective

By Miss Upashana Pradhan

Supervisor: Dr. Philippe Doney

"It's No Longer the Same Life": Women Becoming Head of Household in the Conflict Area of Southern Thailand

By Miss Vilasinee Sukka

Supervisor: Dr. Philippe Doney

Labour Rights and Gender in the Context of the Garment Sector in Industrial Zone, Yangon, Myanmar

By Miss Pyae Phyo Swe

Supervisor: Dr. Philippe Doney

The Influence of Social Network on Women Migration: The Case of Thua Thien Hue, Vietnam

By Miss Chi Thi Khanh Trinh

Supervisor: Dr. Philippe Doney

Migration, Remittance and Women's Empowerment in Kaski District, Nepal

By Miss Sita Devkota

Supervisor: Dr. Philippe Doney

Violence against Women Migrant Workers: A Case Study of Myanmar Women Migrant Factory Workers in Mae Sot

By Miss Hnin Shwe Zin Hlaing

Supervisor: Dr. Kyoko Kusakabe

Women in Livelihood Adaptation under Climate Change in the Coastal Areas of Thai Thuy District in Vietnam

By Mrs. Do Thi Diep

Supervisor: Dr. Kyoko Kusakabe

5.8: SERD – NATURAL RESOURCES MANAGEMENT FIELD OF STUDY



5.8.1 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.

5.8.2 Faculty and Research Staff

Full-time Faculty

CLEMENS GRUNBUHEL, MA, PhD, University of Vienna, Austria/

Assistant Professor (Ecological Anthropology, Resource Use Indicators, Smallholder Agriculture, Integrated Land Use Management)

RAJENDRA PRASAD SHRESTHA, BSc, Haryana Agri. Univ, India; MSc, DTechSc, AIT, Thailand.

Associate Professor (Sustainable Land Management; Natural Resources Degradation and Environmental indicators; Landuse-climate, Geoinformatics)

Visiting Faculty

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

Visiting Associate Professor (Water management/institutions, governance, economics/sustainability in rural development/dynamic modeling)

DAMIEN JOURDAIN, BEng, MSc, Ecole Nationale Supérieure 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)

Adjunct Faculty

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

Adjunct Professor (Natural Resources Economics; Common Property Resources; NRM Policy Analysis; and Watershed Management)

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.

Adjunct Faculty (Savanna ecosystem dynamics, landscape ecology, biodiversity, mangrove, risk management)

Research Staff

Soe Soe Htway, B.Ag.Sc., Soil & Water Management, Yezin Agricultural University; M.Sc., Natural Resources Management, Asian Institute of Technology,.

Research Associate, Strengthening institutional capacity, extension services and rural livelihood in the Central Dry Zone and Ayeyarwaddy Delta regions of Myanmar.

5.8.3 Doctoral Students' Dissertation

An Integrated Sustainability Assessment of Cotton Cropping Systems in Punjab,

Pakistan: Techno-Economic Performances, Environmental Impacts and Eco-efficiency Analysis
By Mr. Asmat Ullah
Supervisor: Dr. Sylvain R. Perret

Impact of Climate Change on Tourism in Mu Ko Surin National Park, Thailand
By Miss Onanong Cheablam
Supervisor: Dr. Rajendra Prasad Shrestha

Impacts of Multi-Stakeholder's Involvement in Forest Fire Management in South Sumatra, Indonesia
By Mr. Eris Achyar
Supervisor: Prof. Ganesh P. Shivakoti

Negotiating Water Policy: Multi-Stakeholders' Negotiation in Prachinburi Sub-Watershed, Central Thailand.
By Mr. Man Purotaganon
Supervisor: Dr. Dietrich Schmidt-Vogt

Use Value of Wild Aquatic Resources and Management Practices in Trapeang Thma Reservoir, Cambodia
By Mr. Loeung Kesaro
Supervisor: Dr. Dietrich Schmidt-Vogt

5.8.4 Masters Students' Theses and Research Studies

Agricultural Land Consolidation: A Case Study of Nam Truc District - Nam Dinh Province, Vietnam
By Miss Doan Thuy Linh
Supervisor: Prof. Ganesh P. Shivakoti

Assessment of Coastline Change in Relation to Human Activities in Hai Hau District, Nam Dinh Province of Vietnam Using Remote Sensing and Geographic Information System
By Mr. Nguyen Khac Viet Ba
Supervisor: Dr. Rajendra P Shrestha

Assessment of the Social-Economic Impact of Mining Industry on Local Livelihoods in Shan State, Myanmar
By Mr. Sai Kyaw Tun Oo
Supervisor: Dr. Clemens Grunbuhel

Farmer Group Participation in Coffee Farming in Paksong District, Champasak Province, Lao PDR
By Miss Malaykham Vipphongxay
Supervisor: Dr. Clemens Grunbuhel

Investigating Farmer's Perception of On-Farm Forest Reserves and Implications on its Adoption: Case Study in Sakon Nakhon Province, Thailand
By Mr. Dan Samitisirisuk
Supervisor: Dr. Rajendra P Shrestha

Land Fragmentation and Government Policy Responses in My Loc District, Nam Dinh Province, Vietnam
By Miss Pham Thi Thanh Thuy
Supervisor: Dr. Clemens Grunbuhel

Linking Rural Livelihood and Conservation in Hoang Lien National Park, Lao Cai Province, Vietnam
By Miss Ha Nguyen Thi Thuy
Supervisor: Dr. Damien Jourdain

People's Livelihood and Wetland Resources: A Study on Beung Kiat Ngong Wetland in Champasack Province, Lao PDR
By Mr. Soukphavanh Sawathvong
Supervisor: Dr. Rajendra P Shrestha

Small-Scale Mud Crab Fishery of the Ayeyarwaddy Delta: A Case Study of the Bogalay Township
By Miss Khin Yadanar Oo
Supervisor: Dr. Clemens Grunbuhel

Socio-Economic Impact of Private Forestry Plantation on Local People in Yedashe Township, East-Bago Yoma Region, Myanmar
By Mr. Aung Kyaw Naing
Supervisor: Dr. Rajendra P Shrestha

Effectiveness of Different REDD+ Pilot Projects on Forest Social-Ecological Systems in Nepal
By Mrs. Shubhechcha Sharma
Supervisor: Prof. Ganesh P. Shivakoti

Research Study

Farming System Analysis of Irrigated Farms in Faisalabad, Pakistan
By Ms Sobia Asghar
Supervisor: Dr. Demain Jourdain

5.9: SERD – PULP AND PAPER TECHNOLOGY FIELD OF STUDY



5.9.1 Introduction

This field of study strives for finding basic solutions for the immediate technical problems facing the local pulp and paper industry. Research activities in PPT are focused on optimising pulping, bleaching and papermaking processes with emphasis on the reduction of their negative impact on environment. The quality of the product is also emphasized to maintain competitive edge of local pulp and paper industry in the global market. Modification of existing processes to suit local raw material is another challenging area of research. The field of study is also launching a new program with focus on biorefining. Biorefining is a new trend of pulp and paper industry. The industry along with production of pulp pioneers production of transportation fuel, chemicals and medicine from the same raw material (i.e. lignocelluloses).

5.9.2 Research Facilities and Laboratories

The Pulp and Paper Laboratory was established to provide the need for research and high level education for this specific field. The laboratory is equipped with all basic facilities for

teaching and research purposes in the field of pulp and paper technology. Several sophisticated equipment have been constantly furnished to extend the services for advance research and special studies likewise. The facilities are provided for activities in pulping paper testing, printing and coating, as well as for wood component analysis. The equipment is standardized according to ISO, TAPPI, and Scandinavian Standards. The programmable six-vessel autoclave digester makes cooking study in research level possible in the most convenient setting. Other major equipment in Pulp and Paper Laboratory include the single batch digester, bleaching reactor, sheet formers, fiber length analyzer, formation tester, deinking flotation cell, and spectrophotometer with ERIC option. In addition to provide assistance and research facilities needs for students, faculty, the laboratory also provides professional services for pulp and paper industry internationally. Among its major equipment include a 6-bomb autoclaved digester, CRS Engineering; Bleaching reactor; Buchi extraction system; GC; Zeta potential tester; Charge density tester; PFI mill; Valley beater; Escher Wyss refiner; AMC Medium Consistency disintegrator;

VoithSulzer Deinking unit; Fiber length analyzer FS-200, Kajaani; L&W Fiber Tester; Handsheet former set with white water recirculation option; Fiber line ESpectrophotometer with ERIC option; Ambertec beta formation tester and Calender.

5.9.3 Faculty and Research Staff

Full-time Faculty

JIRI BASTA, MSc Technical University of Chemistry and Technology, Prague, Czech Republic; PhD. Chalmers University of Technology, Gothenburg, Sweden

Adjunct Faculty [*Carbohydrate Chemistry, Pulping, TCF / ECF Bleaching, Environmental aspects, Effluent analyses and treatment, Process optimization, Non-wood fibers, Nano-fibers, Dissolving pulp*]

Adjunct Faculty

HAKAN KOLMODIN, MSc. in Chemical Engineering, Ph.D. Engineering Chemistry, Chalmers University of Technology, Sweden.

Adjunct Faculty [*Pulp and Paper Mill, cooking chemistry, bleaching chemistry, paper chemistry, printing technology/printability*]

Visiting Lecturers

Prof. YUJI MATSUMOTO BSc., Department of Forest Products, The University of Tokyo (1978), MSc., Department of Forest Products, The University of Tokyo (1980), PhD., Department of Forest Products, The University of Tokyo (1983),

Visiting Lecturer [Fiber Structure and Chemistry]

Prof. HIROSHI OHI, Graduate in Doctor Course of Graduate School of Agriculture, the University of Tokyo, PhD, Title of Doctor Theses: Study on the Behaviors of Wood Components during Alkaline Sulfite-Anthraquinone Cooking

Visiting Lecturer [*Pulp manufacturing*]

Technician and Laboratory

Mr. SUCHART JUNTEING, Laboratory Technician II
Mr. KANONG MALAITHONG, Laboratory Technician I
Mr. MANOCH SUANSIRI, Laboratory Technician II

Administrative Staff

Ms. KATESARAPORN NAKDEE, Secretary I

5.9.4 Masters Students' Theses and Projects

Evaluation of Plantation Woods on the Basis of Lignin Degradability
By Miss Supachineekan Tanaruangamorn
Supervisor: Prof. Nguyen Thi Kim Oanh

Modification of Acacia Pulp Yield in Pre-Hydrolysis Kraft Cooking by Addition of Anthraquinone and Polysulfide
By Mr. Ayyoub Salaghi
Supervisor: Dr. Oleg Shipin

Influence of Hexenuronic Acid Removal by Peroxymonosulfuric Acid on Consumption of Chemicals in ECF Bleaching and Pulp Properties
By Mr. Tran Xuan Hop
Supervisor: Dr. Oleg Shipin

The Reaction of Non-Phenolic B-O-4 Type Lignin in Alkaline Media
By Pattaraporn Posoknistakul
Supervisor: Dr. Mousa M. Nazhad

Potential of Enzymes in ECF Bleaching of Acacia Pulp
By Chu Quy
Supervisor: Dr. Mousa M. Nazhad

Quality Evaluation of Dissolving Pulp Fabricated from Banana Plant Stem and Its Potential for Biorefinery
By Mr. Atanu Kumar Das
Supervisor: Dr. Oleg Shipin

Potential for Climate Compatible Fiber Sourcing from a Eucalyptus-Rice Agroforestry System in Thailand
By Ms. Alice Ruguru Karanja
Supervisor: Dr. Oleg Shipin

Determination of the Effect of Hexenuronic Acid Removal on Total Chlorine Free Bleaching and Pulp Properties of Acacia Crasscarpa
By Mr. Md. Shahadat Hossan
Supervisor: Dr. Oleg Shipin

Application of the Oxygen-Alkali Delignification in Wood Bio-refinery Process
By Miss Bui Thi Lien
Supervisor: Dr. Oleg Shipin

5.10: SERD – REGIONAL AND RURAL DEVELOPMENT PLANNING FIELD OF STUDY



5.10.1 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 their sustainable development.

5.10.2 Faculty and Research Staff

Full-time Faculty

MOKBUL MORSHED AHMAD, BSc, MSc, Dhaka University, Bangladesh; MSc, AIT, Thailand; PhD, University of Durham, UK.

Associate Professor (*Economic geography; regional and rural development planning; community development; Non-Governmental Organizations (NGOs); civil society; and globalization; etc*)

SOPARTH PONGQUAN, BSc, Chiang Mai University; MSc, AIT, Thailand; DSc, University of Wageningen, The Netherlands.

Associate Professor (*Capacity Building; Community Development and Monitoring and Evaluation of Development Projects; Decentralized Local Government; People's and Community Participation; Rural Development*)

JAYANT K ROURAY, 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

5.10.3 Doctoral Students' Dissertation

Assessment of Satisfaction for Livelihood Assets of Rural Elders in Thailand
By Miss Buraskorn Torut
Supervisor: Dr. Soparth Pongquan

Drought Assessments, Impacts and Farmers' Coping Mechanism in Balochistan
By Mr. Muhammad Ashraf
Supervisor: Prof. Jayant Kumar Rouray

Improving Agricultural Extension Services for Date Palm Farmers in Balochistan, Pakistan
By Mr. Mumtaz Ali Baloch
Supervisor: Prof. Gopal Bahadur Thapa

Local Institutions for Rural Development in Thailand: Case Studies of Tambons in Changwat Phitsanulok
By Miss Darin Khongsatjaviwat
Supervisor: Prof. Jayant Kumar Routray

NGO Fieldworkers in Punjab, Pakistan
By Mr. Muhammad Haroon Siddique
Supervisor: Mokbul Morshed Ahmad

Social Capital for Rural Development in Pakistan: An Assessment of the Causal Links and Outcomes
By Mr. Sohail Akram
Supervisor: Prof. Jayant Kumar Routray

5.10.4 Masters Students' Theses and Research Studies

Assessment of Community-based Agricultural Extension Services in Land Reform Areas in Thailand
By Miss Chontida Wongkhumchan
Supervisor: Dr. Soparth Pongquan

Assessing World Vision's Non-formal Education Program in Myanmar: A Case Study of South Dagon Township
By Miss Kay Thi Oo
Supervisor: Dr. Mokbul M Ahmad

Beef Cattle Farming in Timor-Leste: A Rural Development Perspective
By Mr. Jacinto De Araujo
Supervisor: Prof. Jayant K Routray

Benefit Assessment from Community-based Ecotourism in Phou Khoa Khouay National Protected Area, Lao PDR
By Miss Phetvilay Panyada
Supervisor: Dr. Soparth Pongquan

Cropping Diversification in Central Myanmar: Determinants and Impact on Farmers' Income
By Mr. Myo Thet Tin
Supervisor: Prof. Gopal B Thapa

Economic Effects of IRP for Resettlement Schemes in High Voltage Transmission Line Projects in Cambodia
By Mr. Chea Vuthy
Supervisor: Dr. Soparth Pongquan

Economic Impact of Community Based Forest Management on Mountain People in Thua Thien Hue Province, Vietnam
By Mr. Tran Quang Sau
Supervisor: Prof. Gopal B Thapa

Economic Impact of Nino Konis Santana National Park on Local Community, Timor-Leste
By Mr. Humbelino Pereira Da Silva Pinto
Supervisor: Prof. Gopal B Thapa

Effects of Agricultural Extension on the Adoption of Improved Farming Practices and Income of Paddy Farmers in Myanmar
By Miss Sandar Win
Supervisor: Prof. Jayant K Routray

Factors Affecting Occupational Development in Dressmaking of Young Women in Rural Myanmar
By Miss Claudia
Supervisor: Dr. Soparth Pongquan

Farmers' Adaptations to Water Scarcity in Rainfed and Partially Irrigated Areas in the Dry Zone of Myanmar
By Miss Aye Sandar Phyto
Supervisor: Prof. Gopal B Thapa

Impact of Child Marriage on Girls' Formal Education in the Rural Areas of Afghanistan: A Case Study in Dehdadi District of Balkh Province
By Miss Palwasha Tokhy Meranzai
Supervisor: Dr. Mokbul M Ahmad

The Impact of an Irrigation Scheme on Crop Production and Farmers' Income in Khost Province, Afghanistan
By Mr. Mujeeb Rahman
Supervisor: Prof. Gopal B Thapa

Implementation and Delivery of a New Curriculum for Secondary Education in Timor-Leste
By Mr. Fausto Belo
Supervisor: Dr. Mokbul M Ahmad

Inter-District Development Disparity in Timor-Leste
By Miss Maria Imaculada Jeronimo Viana
Supervisor: Prof. Jayant K Routray

Performance Assessment of Vegetable Farming by the New Farmers in a Land Reform Area of Thailand
By Miss Pilapan Koksee-amnuay
Supervisor: Dr. Soparth Pongquan

Regulation and Supervision of Microfinance Institutions in Myanmar: Achievements, Challenges and Constraints in the Delta Region
By Mr. Sai Hnin Aung
Supervisor: Dr. Mokbul M Ahmad

Socio-Economic Impacts of Tourism in Bagan Areas, Myanmar
By Miss Ainzali Kyaw Soe
Supervisor: Prof. Jayant K Routray

Technical Efficiency of Small and Medium Garment Industry in Nepal
By Miss Angy Pradhan
Supervisor: Prof. Gopal B Thapa

Research Study

An Assessment of Agriculture Marketing Information Service (AMIS) in the Punjab Province of Pakistan
By Mr. Muhammad Yaseen
Supervisor: Prof. Gopal B. Thap

Primary Education in Balochistan: An Inter-District Variation
By Mr. Muhammad Yousuf Lasi
Supervisor: Dr. Mokbul M. Ahmad

Rural Urban Development Disparity in Lahore City Region: Policy Implications for Regional Development
By Mr. Irfan Ahmad Rana
Supervisor: Prof. Jayant K. Routray.

5.11: SERD – URBAN ENVIRONMENTAL MANAGEMENT FIELD OF STUDY



5.11.1 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.

5.11.2 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 at a time. The workshop room also has audio-visual facilities for presentation. A Regional Urban Resource Center (R-URC) was established for compiling and disseminating knowledge related to urban development and environmental management issues.

5.11.3 Faculty and Research Staff

Full-time Faculty

VILAS NITIVATTANANON, BEng, Chulalongkorn University; MA, Thammasat University; MEng, AIT, Thailand; PhD, University of Pittsburgh, USA.

Associate Professor (*Urban Infrastructure and Services Management*)

SOHEE MINSUN KIM, BArch, Tama Art University, Japan; MSc, PhD, University of Tokyo, Japan.

Assistant Professor (*Urban-Rural Sustainable Land-use Planning*)

Adjunct Faculty

L. A. S. RANJITH PERERA, BSc, MSc, University of Moratuwa, Sri Lanka; MSc, PhD, AIT, Thailand. (*Urban Environmental Planning and Management Systems*)

EDSEL SAJOR, BSc, University of the Philippines; MA, PhD, ISS, The Hague, The Netherlands. (*Governance and Urban Management*)

SAEED ZAKIAHMED, PhD, Asian Institute of Technology, Thailand. (*Urban Environmental and Planning and Design*)

LE THI THU HUONG, PhD, Asian Institute of Technology, Thailand (*Urban Housing and Living Environment*)

Visiting Faculty

AMITAVA BANDYOPADHYAY, PhD,
Yeshiva University, USA
(Environmental Science and Technology)

MIHOKO MATSUYUKI, PhD, University of
Tokyo, Japan.,
(Urban Planning and Built Environment)

Research Staff

Dr. RUTMANEE ONGSAKUL

Research Associate

Ms. JHOZINE DAMASO

Ms. NATASHA HAZARIKA

Administrative Staff

Ms. JITRA LUCKANAPITAK, Senior
Administrative Officer

5.11.3 Doctoral Students' Dissertation

Aviation Impacts on Property Values and
Management: The Case of
Suvarnabhumi International Airport
By Mrs. Patcharin Limlomwongse
Suksmith
Supervisor Dr. Vilas Nitivattananon

Environmental Management Measures
for Overcoming the Formal-Informal
Dichotomy: A Study of Shop-House
Enterprises in Bangkok Metropolitan
Area, Thailand
By Miss Chantamon Potipituk
Supervisor: Dr. L .A. S. Ranjith Perera

Problems and Prospects for Adopting
the Concept of Low Carbon Society at
the Local Government Level in Thailand
By Mr. Surawut Chomaitong
Supervisor: Dr. L .A. S. Ranjith Perera

Reverse Logistics of Urban Waste
Management Practice: A Case Study of
Thailand
By Mrs. Sumalee Pumpinyo
Supervisor: Dr. Vilas Nitivattananon

RS and GIS Applications for Guiding
Urbanization Towards Green Growth: A
Study Based on Rayong-Map Ta Phut
Conurbation in Thailand
By Miss Phattraporn Soyong
Supervisor: Dr. L .A. S. Ranjith Perera

5.11.4 Masters Students' Theses

Assessment of Land Use and Transport
Integration: The Case of Bangkok Mass
Transit Development Zones
By Miss Kritsana Srichoo
Supervisor: Dr. Vilas Nitivattananon

Assessment of Relationships between
Tourism Development and Protected
Area: The Case of a National Park in
Sylhet Division, Bangladesh
By Miss Rownak Islam
Supervisor: Dr. Vilas Nitivattananon

Climate Change Vulnerability and
Adaptation of Coastal Cities: A Case
Study of Water Supply and Sanitation
under Flooding Hazards in Hoi An City,
Vietnam
By Mr. Hoang Bao Phu
Supervisor: Dr. Vilas Nitivattananon

Evaluating Coastal Flood Risk Adaptation
in the Context of Climate Change in
Surabaya, Indonesia
By Miss Ariyaningsih
Supervisor: Dr. Vilas Nitivattananon

Factors Influencing Urban Heat Island in
Surabaya, Indonesia
By Miss Ayu Candra Kurniati
Supervisor: Dr. Vilas Nitivattananon

Flood Risk Assessment for Urban
Development in Yangon City, Myanmar
By Miss Pyone Myat Mon
Supervisor: Dr. Vilas Nitivattananon

Groundwater Exploitation Assessment
Using DPSIR Framework in Guwahati
City, India
By Miss Natasha Hazarika
Supervisor: Dr. Vilas Nitivattananon

Relations of Perceptions in Air Pollution
and GHG Emissions, and Attitudes to
Accept Travel Demand Management
Measures
By Miss Khanittha Sirijamorn
Supervisor: Dr. Vilas Nitivattananon

Urban Sustainability Assessment in the
Context of Tourism Development: The
Case of Luang Prabang, Lao PDR
By Miss Chintana Souvannachak
Supervisor: Dr. Vilas Nitivattananon

5.12: SERD – AGRIBUSINESS MANAGEMENT PROGRAM



5.12.1 Introduction

Agriculture plays a vital role in the economic growth of many countries, especially developing countries like of Asia including Thailand, China, India, Vietnam, Malaysia, etc. Due the growing industrialization the importance of agri-products 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 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 marketing, 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 international standards on food safety and traceability in agricultural production, local and global trade policies etc.

5.12.2 Faculty and Professional Staff

Faculty

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)

ANIL KUMAR ANAL

Associate Professor, Food Engineering & Bioprocess Technology Field of Study.

(Agriculture and Food Biotechnology; Bionanotechnology; Functional Properties of Proteins and Polysachharides; Food Colloids and Biopolymers; Encapsulation and Targeted Delivery of Biomolecules)

PEEYUSH SONI

Associate Professor and ABM Coordinator, Agricultural Systems & Engineering Field of Study.

(Terramechanics; Agricultural Instrumentation; Controlled Environment Agriculture; Agricultural Systems Analysis; Analytical Techniques)

AVISHEK DATTA [**Assistant Professor**, Agricultural Systems & Engineering Field of Study]

(Agricultural Environments, Crop Productivity Management, Crop Eco-physiology and Modeling, Advanced Agricultural Experimentation)

Visiting, Adjunct Faculty/Affiliated Faculty

CHAIYAPHOL KAEWPRAKAI SAENGKUL; PhD

Adjunct Faculty *(Agricultural Machinery Design & Testing; Instrumentation & Measurement; Quality Control & Assurance)*

Professional Staff

IMRAN AHMAD

Laboratory Supervisor, Food Engineering & Bioprocess Technology Field of Study. *(Food Enterprises Productivity;*

Food Process Operations; Food Supply Chain)

5.12.3 Masters Students' Theses and Research Studies

Assessing the Contribution of Farmers' Cooperative Towards Effective Sugar Supply chain in Ratchaburi, Thailand
By: Ms. Piya Wongwalaimas
Supervisor: Prof. Ganesh P. Shivakoti

Improving Performance of Community Enterprises for the Empowerment of Pineapple Growers under Fairtrade
By: Ms. Natsuda Boonthiem
Supervisor Dr. Peeyush Soni

Perceptions of Farmers on Biosecurity Practices in Pig Farms in Thailand
By Miss Kwanhatai Thongpalad
Supervisor: Dr. Anil Kumar Anal

Performance Evaluation of a Green Market in Yasothon Province, Thailand
By: Ms. Yupawan Nunla
Supervisor Dr. Peeyush Soni

5.13: DISASTER PREPAREDNESS, MITIGATION AND MANAGEMENT AREA OF STUDY



5.13.1 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. 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, Nepal, Pakistan, Philippines, Singapore, South Africa, Sudan, Thailand, Tibet and Vietnam. DPMM has admitted 63 students till date out of which 43 students have already graduated.

DPMM works closely with its partners for sharing knowledge and expertise. DPMM Faculties, Staff and Students get special invitation to attend workshops, seminars, symposiums, conferences, etc.

They also get involved with the partners as volunteers, interns and consultants.

Currently, DPMM is working closely with the following partners.

- Asian Disaster Preparedness Center (ADPC)
- Department of Disaster Prevention and Mitigation (DDPM), Thailand
- HelpAge International
- Integrated Research on Disaster Risk (IRDR)
- International Federation of Red Cross and Red Crescent Societies (IFRC)
- Télécoms Sans Frontières (TSF)
- The Regional Integrated Multi-Hazard Early Warning System for Africa and Asia (RIMES)
- UN Regional Agencies based in Thailand such as, UN International Strategy for Disaster Reduction for Asia & the Pacific (UNISDR-AP); UN World Food Programme (WFP), United Nations Economic and Social Commission for Asia and the Pacific (ESCAP); United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA)
- World Animal Protection

Networks

Asia Pacific Initiative on Disaster Management and Humanitarian Assistance (API: DMHA)

It is a hybrid online disaster training course via video conferencing and content on an e-course management system. This course is offered through a multiple site video teleconference system that connects all participating educational institutions with students on their respective campuses. More than ten institutions around the globe continue to collaborate and share resources in the planning, organizing and delivering of the course. It has been offered at AIT since the inception of DPMM in August 2008.

The partners and participating institutions are:

1. Asian Institute of Technology (AIT), Thailand
2. Bangladesh University of Engineering and Technology (BUET)
3. Gadjah Mada University, Indonesia
4. Kio University, Japan
5. **National Institute of Social Work and Social Sciences (NISWASS), India**
6. Okayama University, Japan
7. School of the Internet (SOI – ITB), Japan
8. The Energy and Resources Institute (TERI), India
9. The National University of Samoa, IA IO Samoa
10. United Nations University, Japan
11. University of Hawaii, Manoa
12. University of Ryukyus, Japan

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.

Disaster Risk Certificate (DRC) Program

The Consortium of International Human Resource Development for Construction of Disaster Resilient Countries – an initiative of Kyoto University and ASEAN Alliance Universities. This program is for 5 Years starting from 2012 to 2017.

1. Asian Institute of Technology (AIT), Thailand
2. Chulalongkorn University, Thailand
3. Kasetsart University, Thailand
4. Institut Teknologi Bandung, Indonesia
5. University of Malaya, Malaysia
6. Vietnam National University, Vietnam

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.

UNCECAR members and associates are:

1. Australian National University, Australia
2. Queensland University of Technology, Australia
3. Chinese Academy of Forestry, China
4. Tsinghua University, China
5. Indian Institute of Technology, Delhi, India

6. Indian Institute of Technology, Kharagpur, India
7. Indian Institute of Technology, Roorkee, India
8. Gadjah Mada University, Indonesia
9. Ibaraki University, Japan
10. Kyoto University, Japan
11. Ritsumeikan Asia Pacific University, Japan
12. The University of Tokyo, Japan
13. Universiti Kebangsaan Malaysia (UKM), Malaysia
14. Tribhuvan University, Nepal
15. University of Engineering and Technology Lahore (UET), Pakistan
16. University of the Philippines, Philippines
17. Nanyang Technological University, Singapore
18. University of Peradeniya, Sri Lanka
19. Pukyong National University (PKNU), South Korea
20. Yeungnam University, South Korea
21. Asian Institute of Technology, Thailand
22. Chulalongkorn University, Thailand
23. Viet Nam National University, Viet Nam
24. United Nations University, Institute for the Advanced Study of Sustainability (Coordinating Institute)

Asia Pacific Initiative on Disaster Management and Humanitarian Assistance (API: DMHA)

It is a hybrid online disaster training course via video conferencing and content on an e-course management system. This course is offered through a multiple site video teleconference system that connects all participating educational institutions with students on their respective campuses. More than ten institutions around the globe continue to collaborate and share resources in the planning, organizing and delivering of the course. It has been offered at AIT since the inception of DPMM in August 2008.

The partners and participating institutions are:

1. Asian Institute of Technology (AIT), Thailand
2. Bangladesh University of Engineering

and Technology (BUET)

3. Gadjah Mada University, Indonesia
4. Kio University, Japan
5. National Institute of Social Work and Social Sciences (NISWASS), India
6. Okayama University, Japan
7. School of the Internet (SOI – ITB), Japan
8. The Energy and Resources Institute (TERI), India
9. The National University of Samoa, IA IO Samoa
10. United Nations University, Japan
11. University of Hawaii, Manoa
12. University of Ryukyus, Japan

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.

Disaster Risk Certificate (DRC) Program

The Consortium of International Human Resource Development for Construction of Disaster Resilient Countries – an initiative of Kyoto University and ASEAN Alliance Universities. This program is for 5 Years starting from 2012 to 2017.

- Asian Institute of Technology (AIT),

Thailand

- Chulalongkorn University, Thailand
- Kasetsart University, Thailand
- Institut Teknologi Bandung, Indonesia
- University of Malaya, Malaysia
- Vietnam National University, Vietnam

Details regarding DPMM program are available at <http://dpmm.ait.ac.th>

5.13.2 Faculty and Research Staff

Coordinating faculty members

School of Environment, Resources & Development (SERD)

Field of Study

Regional and Rural Development Planning (RRDP)

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*]

School of Engineering & Technology (SET)

Field of Study

Structural Engineering (STE)

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

Associate Professor [*Earthquake Engineering*]

Contributing faculty members

School of Engineering & Technology (SET)

Field of Study

Remote Sensing and Geographic Information Systems (RS&GIS)

KIYOSHI HONDA, B.Agr., D.Eng., University of Tokyo, Japan.

Professor [*Real-time Mapping and Simulation of Geological Processes*]

NITIN KUMAR TRIPATHI, B.Tech., National Institute of Technology, Warangal, India; M.Tech., IIT; PhD, IIT, Kanpur, India.

Professor [*Remote Sensing and GIS for Disaster Mitigation*]

MASAHICO NAGAI, B. Sc., St. Cloud State University, USA; M.Sc., Asian Institute of Technology (AIT), Thailand; D.Eng., The University of Tokyo, Japan.

Associate Professor [*Remote Sensing and GIS for Disaster Mitigation*]

Water Engineering and Management (WEM)

MUKAND BABEL, B.Eng., Rajasthan Agricultural University, India; M.Eng., D.Eng., AIT, Thailand.

Professor [*Drought Forecasting and Management*]

Geotechnical and Geoenvironmental Engineering (GTE)

NOPPADOL PHIEN-WEJ, B.Eng., Chulalongkorn University, Thailand; M.S., PhD, Illinois at Urbana-Champaign, USA.

Associate Professor [*Geological Hazards*]

School of Environment, Resources & Development (SERD)

Field of Study

Environmental Engineering and Management (EEM)

AJIT P ANNACHHATRE, B.Tech., PhD, Indian Institute of Technology, Kanpur, India.

Professor [*Health and Ecological Risk Management*]

CHETTIYAPPAN VISVANATHAN, B.Tech., IIT, Madras, India; M.Eng., AIT, Thailand; PhD, InstNatIPolytech, Toulouse, France.

Professor [*Environmental Hazards Mitigation*]

OLEG V SHIPIN, PhD, Institute of Biochemistry and Physiology of Microorganisms, Moscow, Russia.

Associate Professor [*EIA & Disaster Management*]

Gender and Development Studies (GDS)

KYOKO KUSAKABE, B.A., Sophia University, Tokyo, Japan; M.Sc., PhD, AIT, Thailand.

Associate Professor [*CBDRM & Gender Issues*]

Regional and Rural Development Planning (RRDP)

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*]

Energy

SIVANAPPAN KUMAR, B.E., University of Madras, India; M.Eng., AIT, Thailand; PhD, InstNatIPolytechnique, Toulouse, France.

Professor [*Climate Change Mitigation*]

Urban Environmental Management (UEM)

VILAS NITIVATTANANON, B.Eng., Chulalongkorn University; M.A., Thammasat University; M.Eng., AIT, Thailand; PhD, University of Pittsburgh, USA.

Assistant Professor [*Disaster Management in Urban Infrastructure Planning*]

Adjunct Faculty

JAYARAMAN K V POTTY, B.Sc. University of Kerala, India; M.Sc., Cochin University of Science and Technology, India; PhD, Indian Institute of Technology, New Delhi, India.

Chief Scientist, Regional Integrated Multi Hazard Early Warning Systems (RIMES), [*Climate Prediction and Early Warning System*]

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*]

Affiliated Faculty

AKIYUKI KAWASAKI PhD, Yokohama National University, Japan; M.S., Yokohama National University, Japan; B.S., Yokohama National University, Japan.

Visiting Faculty [*Geospatial Technologies for Multidisciplinary Disaster & Water research*]

A R SUBBIAH

Director, Regional Integrated Multi Hazard Early Warning Systems (RIMES), [*Climate Risk Management*]

LAL SAMARAKOON, B.Sc., University of Kelaniya, Sri Lanka; M.Sc., Saga University, Japan, PhD, Ehime University, Japan.

Director, Geoinformatics Center [*Geospatial Technology for Disaster Management*]

MANZUL KUMAR HAZARIKA, PhD, University of Tokyo, Japan; M.Eng., Asian Institute of Technology, Bangkok, Thailand; M.Tech., Indian Institute of Technology, Kharagpur; B.Tech., J N Krishi Vishwa Vidyalaya (J. N. Agriculture University), India.

Associate Director, Geoinformatics Center [*Disaster Risk Assessment, Managing Disasters and CBDRM*]

SUTAT WEESAKUL, D.Eng., M.Eng., Asian Institute of Technology; B.Eng., Chulalongkorn University, Thailand.

Affiliated Faculty [*Tsunami and Coastal Engineering*]

5.13.3 Doctoral Students' Dissertation

Assessing Health Risks in the Context of Flooding in Kassala State of Sudan
By Mr. Haitham Bashier Abbas
Supervisor: Prof. Jayant Kumar Routray

Assessing Storm Surge Risk in the Context of Urban Informal Settlements: A Case of Navotas City, Metro Manila, The Philippines
By Miss Veronique Morin
Supervisor: Prof. Pennung Warnitchai

5.13.4 Masters students' theses and research study

Assessing Community Capacity for Response and Preparedness against Flood Hazard in HPA-AN Town, Lower Myanmar
By Miss Pone Nyet Khaing
Supervisor: Prof. Jayant Kumar Routray

Coping and Resilience of Ban Pho Flood Prone Community in Ayutthaya Province of Thailand
By Mr. Karn Paneetsin
Supervisor: Prof. Jayant Kumar Routray

Coping and Preparedness of Fishing Community Against Tropical Cyclones in Maheshkhali Island of Bangladesh
By Mr. Shah Jawad Shamir
Supervisor: Prof. Jayant Kumar Routray

Fire Hazard in the Readymade Garment Industry of Dhaka City, Bangladesh
By Mr. Md. Faruk Hossain
Supervisor: Dr. Mokbul Morshed Ahmad

Potential Impacts of Sea Level Rise on
the Small Island Communities of
Maldives

By Mr. Mohamed Inayath

Supervisor: Prof. Jayant Kumar Routray

Seismic Hazard Information Utilization
and Building Control: Eight Years Post
Yogyakarta 2006 Earthquake Disaster

By Mr. Wifandy Raymond Tobias Purba

Sidadolog

Supervisor: Dr. Pennung Warnitchai

Chapter 5.14: SERD – CLIMATE CHANGE AND SUSTAINABLE DEVELOPMENT FIELD OF STUDY



5.14.1 Introduction

Climate change and sustainable development (CCSD) is a key element of maintaining sustainable livelihoods and economies in Asia. Given the enormous cultural, social, political, and biophysical diversity across Asia, the climate change and sustainable development professionals need a strong working knowledge of several interrelated sciences. Through teaching, research and outreach activities, the CCSD program at AIT seeks to develop professionals who can contribute to address issues of the climate change impacts and sustainable management of resources, through a curriculum and research program that exposes the students to a wide range of contemporary topics.

Due to the interdisciplinary character of CCSD, students with a wide variety of backgrounds including agriculture, biosciences, environmental sciences, energy, forestry, including social sciences such as e.g. anthropology, geography, economics and sociology are encouraged to seek admission to the certificate, Diploma, Master and Doctoral Degree programs offered by the CCSD program. There are three areas of specialization

including Climate Science, Mitigation, and Adaptation.

Details regarding CCSD program are available at

<http://www.serd.ait.ac.th/wpserd/climate-change-and-sustainable-development/>

5.14.2 Faculty and Research Staff

Full-time Faculty

SIVANAPPAN KUMAR, BE, Univ of Madras, India; MEng, AIT, Thailand; PhD, InstNatIPolytechnique, Toulouse, France
Professor (*Renewable energy resources and technologies: Climate change and greenhouse gas mitigation: energy and sustainable development*)

ABDUL SALAM PAKKEERTHAMBY, BSc.Eng (Hons.) University of Peradeniya, Sri Lanka; M.Eng. D.Eng. AIT
Associate Professor (*Bioenergy, Renewable energy; Energy conservation and efficiency; climate change mitigation*)

SHOBHAKAR DHAKAL, B.e., nit, Surat; M.E., AIT, P.HD. Tokyo

Assistant Professor (*Modeling of Energy and carbon Emission, Scenarios Policy Analyses*)

AJIT P. ANNACHHATRE, BTech, PhD, Indian Inst of Tech, Kanpur, India.

Professor (*Anaerobic Wastewater Treatment; Biofilm Processes; Environmental Biotechnology; Environmental Impact Assessment; Mathematical Modeling*)

NGUYEN OANH THI KIM, Dip Eng, Odessa Hydrometeorology Inst, Ukraine; MEng, Deng, AIT, Thailand.

Professor (*Air Pollution Engineering and Management: Modeling, Monitoring, Exposure Assessment; Climate and Air Quality Interaction: Environment Co-Benefit of SLCP Emission Reduction; Industrial Environment management: General Environment Management, Advanced Emission control Techniques*)

CLEMENS GRUNBUHEL, Ma, PhD, University of Vienna, Austria.

Assistant Professor (*Ecological Antropology, Resource Use Indicators, Smallholder Agriculture, Integrated Land Use Management*)

RAJENDRA PRASAD SHRESTHA, BSc, Haryana Agri, Univ, India; MSc, DTechSc, AIT, Thailand.

Associate professor (*Sustainable Land management; Natural Resources Degradation and Environmental indicators; Landuse-climate, Geoinformatics*)

MOKBUL MORSHED AHMAD, BSc, MSc, Dhaka University, Bangladesh; MSc, AIT, Thailand; PhD, University of Durham, UK.

Assistant Professor (*Economic geography; regional and rural development planning; community development; Non-Governmental Organizations (NGOs); civil society; and globalization; etc*)

JAYANT K ROURAY, 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*)

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

Assistant Professor (*Climate change and adaptation, Integrated water resources management, Hydrology and water quality modeling, Groundwater development and management, Sustainable water management policy*)

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*)

PRABHAT KUMAR, B.Sc. (Ag and Hons.), Rajendra Agriculture University, Pusa, India; MSc. (Ag. Systems), Asian institute of Technology, Thailand; Dr.rer.hort. Leibniz University of Hanover, Germany.

Director (ACISAI Center), *Sustainable Agriculture and Horticulture Intensification, Integrated Pest Management, Climate Proofing of Agriculture and Horticulture Production Systems, Action Research, Collaborative international Agriculture Research, Tri-Trophic Interactions and Signaling*

KRISHNA R. SALIN, B.F.Sc. and M.F.Sc. (Aquaculture), Kerala Agricultural University, Kochi, India; PhD (Mariculture), Central Institute of Fisheries Education (Deemed University), Mumbai, India; Postdoctoral research, Queensland University of Technology, Brisbane, Australia.

Assistant Professor (*Applied genetics, selective breeding, Hatchery management and grow-out techniques, Biofloc technology*)
AVISHEK DATTA; B.Sc, M.Sc. (B.C. State Agri. Univ., India); PhD, University of New England, Australia

Assistant Professor (*Agricultural Environments, Crop Productivity Management, Crop Eco-physiology and Modeling, Advanced Agricultural Experimentation*)

Administrative Staff

Ms. Kessaraporn Nakdee, Secretary

5.14.3 Masters Students' Theses

Farmers' Preception on the Impact of Climate Change on Rice Productivity in Kampong Speu Province, Cambodia

By Ms. Tieng Thida

Supervisor: Dr. Rajendra Shrestha

GHG Emission of a Hotel in Chiang Mai, Thailand

By Ms. Supansa Luansak

Supervisor: Prof. S. Kumar

Impact of Climate Change on Rainfed Rice Yield in Nam Xong River Basin, Lao PDR

By Ms. Oulavanh Sinsamphanh

Supervisor: Dr. Rajendra Shrestha

Integrating Disaster Risk Reduction and Climate Change Adaptation to increase Livelihood Resiliency in Legazpi City, Philippines

By Mr. Jegillos Israel Pardilla

Supervisor: Dr. Vilas Nitivattananon

Chapter 6: SCHOOL OF MANAGEMENT



6.1 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.

6.2 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"

6.3 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)

6.4 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

6.5 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

6.6 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.

6.7 Faculty and Research Staff

Full-time Faculty

YUOSRE BADIR, M.S., The Swiss Federal Institute of Technology Lausanne (EPFL), M.Sc University of Putra Malaysia, Ph.D (MOT) EPFL

Assistant 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, Chulalongkorn Univ, 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, Thammasat Univ, Thailand; PhD, The Australian National University, Australia

Assistant Professor (International Economics, Multinational Enterprises, Managerial Economics and Business environment)

DONYAPRUETH KRAIRIT, BS, Thammasat Univ, Thailand; MS, Univ of

Colorado at Boulder; PhD, Massachusetts Inst of Tech, Cambridge, USA.

Associate Professor (Technology, Policy and Management)

SUNUNTA SIENGTHAI, BA, Chulalongkorn Univ, Thailand; MA, PhD, Univ of Illinois, USA.

Associate Professor (Labor & Industrial Relations, HRM, Wages & Productivity)

VATCHARAPOL SUKHOTU, BEng, Kasetsart Univ, 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

EVANGELOS ANGELOS AFENDRAS, B.A., M.A, Ph.D (Humanities-Linguistics) The Johns Hopkins Univ., USA.

Adjunct Faculty (Cross-Cultural Management, Organization Behavior, Management of Change)

Prof. HITENDRA BARGAL, MBE, LL.M, PhD Indore University, India,

Visiting Professor (Marketing & Entrepreneurship)

URS BUMBACHER, M.A, Ph.D (Economics & Business Admin.), Univ. of Basel, Switzerland.

Adjunct Professor (International Business)

Dr. GAUTAM KMAR DUTTA, B.E, MBA, Ph.D. – IIT, India

Visiting Associate Professor (International Marketing, Marketing Management, Technology Innovation Management, Entrepreneurship and Small Business Development.)

Prof. GEETIKA GOEL, Ph.D University of Allahabad- India

Visiting Professor (Technology & Development, High Tech Entrepreneurship)

RUDOLF GRUENIG, Ph.D (BA), University of Bern, Switzerland.

Adjunct Faculty (Strategic Management)

ROLAND AMOUSSOU-GUENOU, LL.B in Business Law, National Univ. of Benin.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)

ASHISH SADH, M.B.A., A.P.S. Univ., Rewa.Ph.D (Marketing) Devi Ahilya Univ., Indore.

Adjunct Faculty (Sales and Marketing)

RAGNAR THOR GRUNDTVIG SEGGAARD, 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., Cornell University, 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)

6.8 Doctoral Students' Dissertation

The Governance Issues in Agricultural Cooperatives in Thailand
By Mr. Wit Pratuckchai
Supervisor: Dr. Winai Wongsurawat

Project Financing Strategies for e-Government Projects: Case Studies of e-Governance Projects in India
By Mr. Shashank Ojha
Supervisor: Prof. Indra M. Pandey

Managing Corporate Knowledge: Communities of Practice Purposefully Designed for Improving Business Performance
By Mr. Sophon Yamklin
Supervisor: Dr. Barbara Igel

Success Factors of Market Entries, Implementation and Adaptation in Vietnam
By Mr. Beat Hans Wafler
Supervisor: Dr. Yuosre Badir

The Individual's Perceived Environment as Antecedent of Academic Entrepreneurship: Multiple Case Studies of Thai University Researchers
By Mr. Sutti Sooampon
Supervisor: Dr. Barbara Igel

Indicators of Best Practices in Technology Product Development Projects: Prioritizing Critical Success Factors
By Mr. Supachart Iamratanakul
Supervisor: Dr. Yuosre Badir

Organizational Learning Capability, Knowledge Sharing Behavior and Workplace Spirituality
By Mr. Monthon Sorakraikitikul
Supervisor: Dr. Sununta Siengthai

The Moderating Effect of Project-based HRM Practices on the Relationship between Knowledge Absorptive Capacity and Project Performance: An Empirical Study of MNCs in the Thai Automotive Industry
By Miss Sujinda Popaitoon
Supervisor: Dr. Sununta Siengthai

6.9 Masters Students' Theses, Research Studies and Projects

Excellent Moving Plan to a New Distribution Center of Zuellig Pharma Vietnam
By Mr. Nguyen Tuan Loc
Supervisor: Dr. Vatcharapol Sukhotu

Improving Competitive Marketing Strategy of Motor Vehicle Insurance: A Case Study of PetroVietnam Insurance - PVI
By Ms. Nguyen Thi Phung
Supervisor: Dr. Yuosre Badir

Improving Procurement and Contract Management in the Oil and Gas Industry: A Case Study of Joint Venture Vietsovpetro in Vietnam
By Mr. Nguyen Quoc Thanh
Supervisor: Dr. Huynh Trung Luong

Improving Inventory and Transportation Management in Vietsovpetro Joint Venture (VSP)
By Mr. Nguyen Van Luc
Supervisor: Dr. Huynh Trung Luong

Determinant Factors for Online Purchase Intention: The Case of Office Workers in Ho Chi Minh City, Vietnam
By Mr. Pham Hong Khanh
Supervisor: Dr. Yuosre Badir

Strategic Analysis and Implementation Plan for Better Utilization of Local Petroleum Contractors in Vietnam: The

Case of Schlumberger Vietnam Oilfield Services (SVS)
By Mr. Tran Ngoc Thach
Supervisor: Dr. Yuosre Badir

Good Governance and Anti-Corruption Strategies for Social Compliance Auditing
By Miss Yeung Lei Shan Esther
Supervisor: Dr. Gregory L. F. Chiu

Strategic Corporate Social Responsibility in Myanmar's Agribusiness Sector. A Business Plan for a Dairy Company with a Strategic Community Investment Project
By Mr. Cesar Ivan Russo
Supervisor: Dr. Clemens Grunbuhel

Redefining Primetime's Outreach Strategy: A Non-Profit Organization Dedicated to Women's Empowerment
By Ms. Cathy Pronier McCollough
Supervisor: Dr. Gregory L. F. Chiu

Corporate Social Responsibility (CSR) in the Apparel Sector: A Focus on Supply Chain Risks and Developing Policies with the ISO26000 Framework
By Ms. Judith Karen Mackay
Supervisor: Dr. Gregory L. F. Chiu

A Feasibility Study of Inflight Waste Sorting and Recycling for Cathay Pacific Airways Outbound Flights
By Ms. Carol Cheung
Supervisor: Dr. Donyaprueth Krairit

Effectiveness of Recruitment and Selection Practices in Some Selected Banks of Bhutan
By Mr. Nagphey
Supervisor: Dr. Sununta Siengthai

Individual Liberties and Privacy in Implementing Big Data
By Miss Lucile Cayssials
Supervisor: Prof. Nazrul Islam

The Development of Green Building in Southeast Asia: Advances, Challenges and Drivers to Make the Built Environment more Sustainable
By Miss Margaux Torregrosa
Supervisor: Dr. Yuosre Badir

The Relationship between Headquarters and Subsidiaries in a Multinational

Company and Its Impact on Innovation and New Product Development
By Miss Claire-Marie Keller
Supervisor: Dr. Yuosre Badir

Measuring Sustainability and Well-Being by Assessing Human Social and Natural Capital of People Living in Eastern Tarej, Nepal
By Mr. Sanjay Kumar
Supervisor: Dr. Winai Wongsurawat

Impact of Currency Derivatives on Spot Market in India
By Miss Niyati Ray
Supervisor: Dr. Juthathip Jongwanich

International Branding Strategies of Huawei: A Company from the Emerging Economy
By Miss Tao Xiaoming
Supervisor: Prof. Nazrul Islam

Human Resource Development Approaches for Core Competency Development: A Case Study of the Agricultural Land Reform Office
By Miss Korawan Mankong
Supervisor: Dr. Sununta Siengthai

The Challenges Faced by the Supply Chain Management of Thailand Rice Industry During the 2011 Flood
By Miss Suby Anthony
Supervisor: Dr. Vatcharapol Sukhotu

How Liberalization Affects and Influences Collaborations of International Telecommunication Operators in Myanmar
By Mr. Sai Nay Shine
Supervisor: Dr. Yuosre Badir

Sesame Value Chain Development Intervention in Minbu Township, Magway Division, Myanmar: The Case Study of a NGO Project in Dry Zone.
By Miss May Thu Oo
Supervisor: Dr. Vatcharapol Sukhotu

Determinants of the Exchange Rate in Myanmar
By Miss Theingi Min Soe
Supervisor: Dr. Supasith Chonglertham

Ecotourism Development in Moeyingyi Wetland Wildlife Sanctuary, Myanmar

By Miss Yin Yin Aung
Supervisor: Dr. Barbara Igel

Development of Stock Exchange in Myanmar

By Mr. Kyaw Zay Yar Bo

Supervisor: Dr. Supasith Chonglerttham

Determinants of Sourcing Practices in the Pharmaceutical Industry: The Case Study of FAME Pharmaceuticals Enterprise in Myanmar

By Miss Kaung Wai Wai

Supervisor: Dr. Vatcharapol Sukhotu

IMF a Lender of Last Resort, Cure or Curse for Developing Countries: A Case Study of Pakistan

By Mr. Hussain Bakhsh

Supervisor: Dr. Supasith Chonglerttham

Export Credit Insurance Premium: OECD and Option Valuation Methods Comparison

By Mr. Ratikanta Barik

Supervisor: Prof. David Camino Blasco

Open and Process Innovation Practices in a Leading Thai Industrial Conglomerate

By Mr. Nuntawat Soi-ampornkun

Supervisor: Dr. Yuosre Badir

Size, Value, and Momentum in the Stock Exchange of Thailand

By Mr. Mussa Hussaini

Supervisor: Dr. Supasith Chonglerttham

Advertising Strategies in the Cosmetic Clinics Industry: A Study of Wuttisak and Nitipon Clinic's Advertising Strategies

By Miss Peeraya Thongkruer

Supervisor: Dr. Winai Wongsurawat

Motivations and Investment Decisions of Berli Jucker PCL in Vietnam Retail Market: Asean Economic Community 2015

By Mr. Lam Tuan Vu

Supervisor: Dr. Supasith Chonglerttham

Factors that Determine the Decision of Chinese Students to Study in Thai Universities: Insights for Promotion of AIT in China

By Mr. Luo Wenke

Supervisor: Dr. Barbara Igel

Chapter 7: AIT EXTENSION

7.1 Introduction

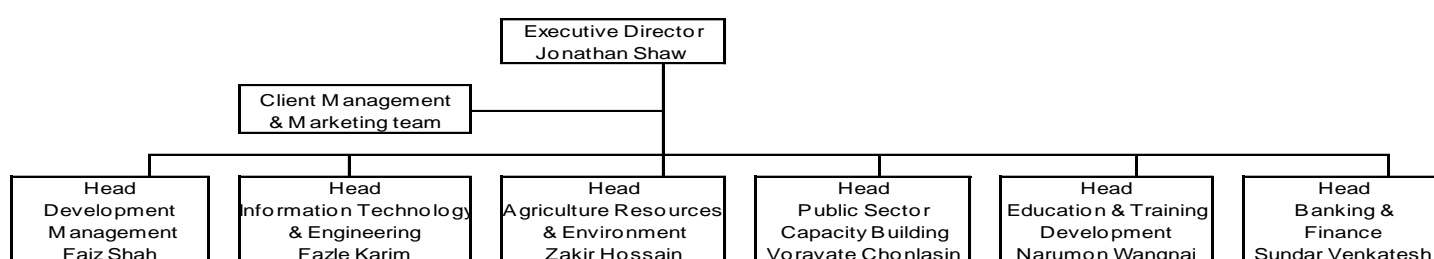
AIT Extension is responsible for non-degree programs at AIT. As the continuing professional development and short-course training arm of the institute, we identify and respond to opportunities in the region for continuing professional education, short-course training and consultancy services, and in this way contribute to the realization of AIT's mission to develop highly qualified and committed

training and consultancy, and thus help to realize AIT's mission to develop highly qualified and committed professionals who will play a leading role in the sustainable development of the region and its integration into the global economy.

7.3 Unit Governance Courses and Services

AIT Extension offers courses in the following specializations:

particular client organizations. Every organization with which we work is unique; and change interventions required by our clients are most usually specific to that organization. Wherever required, therefore, we work closely with our clients to develop unique training solutions that meet their specific needs. This process will usually start with the clients' own terms of reference, to which AIT Extension responds. Meetings are scheduled with the client to discuss all aspects of the



professionals who play a leading role in the sustainable development of the region and its integration into the global economy.

We work with professionals in national governments, overseas development agencies, multilateral agencies, development institutions, private sector, development banks, consultants and NGOs. AIT Extension's operating programs are:

- Agriculture, Resources and Environment
- Education and Training Development
- Public Sector Capacity Building
- Development Management
- Information Technology and Engineering
- Banking and Finance

7.2 Mission

To identify and respond to regional opportunities for continuing education,

- Agriculture and Food Processing
- Environment and Natural Resources Management
- Education and Training Development
- Poverty Reduction and Livelihoods Development
- Business Performance, Management and Strategy
- Development Effectiveness
- Public Sector Services and Management
- Private Sector Development
- Information and Communication Technologies
- Information and Communication Management
- Banking and Finance.

Most international training courses usually last from one to three weeks.

Customized Courses

AIT Extension specializes in designing, developing and implementing short courses to the specifications of

required training, and to ensure that the client's needs are met.

Exposure Visit Programs

Many professionals are interested in field visits to observe best practices in their field. Exposure visits are designed to provide senior government officials and decision makers with opportunities to visit and observe current technology and practices in their fields, to exchange information, to exchange experiences with local counterparts, project personnel and beneficiaries on development and management of similar projects, and to exchange views with participants from other countries. At the end of each program, a seminar is conducted at AIT to enable participants to reflect on what has been learned and what can be adapted to their own development contexts.

Thailand provides numerous examples of best practice in a wide diversity of fields. AIT Extension is also experienced in organizing exposure visit programs to

many countries in the region, with recent experience in Vietnam, Laos, Malaysia, Korea, Philippines, Indonesia, Singapore and the UK.

Consulting Services

AIT Extension professional staff offer a wide range of technical assistance and consulting services. These include:

- **Human Resource Development:** Development of human resource development (HRD) programs and projects; assessment of training needs in organizations; evaluation of training courses, projects or plans; review and evaluation of the management and operation of training centers; management and implementation of training development projects.
- **Educational Development:** Curriculum design and development; evaluation of educational programs and projects; management and implementation of educational development projects; report writing and documentation.
- **Organizational change and development:** Strategic planning.
- **Information Technology:** Strategic information technology. Planning; information system analysis and design; IT project management.

7.4 Learning Approach

Our teaching and learning approach is to apply best practices in training, based on established principles of adult learning.

Training strategies that we use 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 typical training course provides 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. ICTs 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 stimulating academic and social environment, and the Institute's multicultural English-speaking academic community.

7.5 Training Resources

AIT Extension has a wide pool of academic and professional Resource Persons drawn from AIT's schools, and from leading international and local organization in the region.

Its professional staffs are specialists in human resources development, curriculum planning, instructional system design, information technology application development and other specific technological areas.

It has state-of-the-art educational and information technologies incorporated into all training facilities on campus.

Presenting a serene and relaxing environment for study AIT's campus show cases hotel and student dormitory accommodation, a medical clinic, an international cafeteria, several restaurants and sports facilities including tennis and squash courts, a golf course and a swimming pool.

7.6 Grants and Sponsored Trainings Completed in 2014

Public Sector Management

Duration: 16-Dec-2013 to 18-Jun-2014

Project Investigator(s): Upul
Sponsor: Water Provincial Council, Sir Lanka

Total Contracted Amount (THB): 450,000

Public Private Partnership

Duration: 9-Dec-2013 to 11-Jun-2014

Project Investigator(s): Furqan
Sponsor: AIT Consulting

Total Contracted Amount (THB): 465,000

Leadership and Essential Management Skills

Duration: 9-Dec-2013 to 18-Jul-2014

Project Investigator(s): Agus S. Prajogo

Sponsor: Titas Gas
Total Contracted Amount (THB): 983,160

Project Management (Batch III)

Duration: 18-Dec-2013 to 21-Oct-2014

Project Investigator(s): Thaniya Jirasathitpornpong

Sponsor: ADB
Total Contracted Amount (THB): 1,080,000

Accounting and Auditing for Oil, Gas and Mining Industries

Duration: 25-Nov-2013 to 4-Jun-2014

Project Investigator(s): Afzal Jamil
Sponsor: BCMCL, BGFL, KGDCL Bangladash

Total Contracted Amount (THB): 2,402,500

Human Resource Management for Oil and Gas Industries Using IT

Duration: 25-Nov-2013 to 4-Jun-2014

Project Investigator(s): Tharakorn Chanlapa

Sponsor: Barapukuria Coal Mining Co.,Ltd

Total Contracted Amount (THB): 525,000

Professional Masters in Banking and Finance, January 2013 Intake

Duration: 1-Jan-2013 to 31-Dec-2014

Project Investigator(s): Dr.Sunder Venkatesh

Sponsor: Bangladesh Bank & Bhutan Limited

Total Contracted Amount (THB): 11,524,000

Institutional Improvement in Water Resource Sector

Duration: 11-Nov-2013 to 13-Feb-2014

Project Investigator(s): Course Coordinator

Sponsor: Bangladesh Water Development Board

Total Contracted Amount (THB): 1,482,375

Contract Management Batch 2

Duration: 26-Aug-2013 to 30-Jun-2014

Project Investigator(s): Furqan Ali Shaikh

Sponsor: ADB

Total Contracted Amount (THB): 1,102,200

Management of Food Control and Disaster Management

Duration: 11-Nov-2013 to 30-Jun-2014

Project Investigator(s): Thaniya Jirasathitpornpong

Sponsor: World Bank

Total Contracted Amount (THB): 1,137,600

Implementation, O&M, M&E of Flood Control, Drainage and Irrigation in Sri Lanka

Duration: 25-Nov-2013 to 6-Mar-2014

Project Investigator(s): Furqan Ali

Sponsor: World Bank, WMIP

Total Contracted Amount (THB): 1,050,654

International Immersion Programme for PGPWE of IIM Raipur, India

Duration: 9-Dec-2013 to 19-Mar-2014

Project Investigator(s): Kanlaya Muangsang

Sponsor: Indian institute of Management Raipur, India

Total Contracted Amount (THB): 1,152,720

Study Visit Programme on Credit Systems and Students Evaluation for Faculty Members from Shivaji University

Duration: 6-Nov-2013 to 8-Feb-2014

Project Investigator(s): Warindhorn Srina and Narumon Wangnai

Sponsor: Shivaji University, India

Total Contracted Amount (THB): 658,440

Sustainable Savings Fund Feasibility Study

Duration: 1-Nov-2013 to 30-Apr-2014

Project Investigator(s): Evanshainia Syiem and Dr. Faiz Shah

Sponsor: SPLASH

Total Contracted Amount (THB): 990,000

Principles and Practices of Micro-Finance

Duration: 4-Nov-2013 to 15-Apr-2014

Project Investigator(s): Mahbooba Amin

Sponsor: Bhutan, Sudan, Cambodia, Thailand

Total Contracted Amount (THB): 420,050

Public Private Partnership

Duration: 18-Nov-2013 to 27-Feb-2014

Project Investigator(s): Afzal Jamil

Sponsor: ADB

Total Contracted Amount (THB): 1,599,360.1

Research Based Internship Program on Advanced Management Skills

Duration: 18-Nov-2013 to 29-Apr-2014

Project Investigator(s): Mathew Kuruvilla

Sponsor: CARD-F

Total Contracted Amount (THB): 155,000

Performance Management

Duration: 21-Sep-2013 to 30-Jan-2014

Project Investigator(s): Course Coordinator

Sponsor: Asian Development Bank

Total Contracted Amount (THB): 1,070,850

On-farm Tilapia Feed Production

Duration: 16-Sep-2013 to 20-Feb-2014

Project Investigator(s): Evanshainia Syiem and Dr. Md. Zakor Hossain

Sponsor: Northern Marianas College Cooperative Research Extension and Education Service

Total Contracted Amount (THB): 450,000

Professional Training Program on Human Resource Management/ Change Management

Duration: 21-Sep-2013 to 3-Mar-2014

Project Investigator(s): Mahbooba Amin

Sponsor: Water Development board, Bangladesh

Total Contracted Amount (THB): 1,168,708

Operation & Maintenance of Steam Turbine (India)

Duration: 28-Sep-2013 to 30-Jun-2014

Project Investigator(s): Furqan Ali

Sponsor: ADB

Total Contracted Amount (THB): 1,507,500

Procurement and Supply Chain Management

Duration: 30-Oct-2013 to 9-Jan-2014

Project Investigator(s): Afzal Jamil

Sponsor: ADB

Total Contracted Amount (THB): 1,506,360

Operation & Maintenance of Gas Turbine

Duration: 30-Oct-2013 to 30-Jun-2014

Project Investigator(s): Furqan Ali

Sponsor: ADB

Total Contracted Amount

(THB): 1,472,500

International Training and Exposure Visits Programs for UVA Province Senior Officers 2013

Duration: 1-Sep-2013 to 12-Jan-2014

Project Investigator(s): Upul
Sponsor: Uva Province, Sri Lanka
Total Contracted Amount
(THB): 1,571,700

Professional Development Program on Management of Training Centers

Duration: 23-Oct-2013 to 2-Jan-2014

Project Investigator(s): Warindhorn Srina and Narumon Wangnai
Sponsor: SPEMP, Bangladesh
Total Contracted Amount
(THB): 1,412,500

Project Management (Batch II)

Duration: 12-Aug-2013 to 31-Jan-2014

Project Investigator(s): Thaniya Jirasathitpornpong
Sponsor: ADB
Total Contracted Amount
(THB): 900,000

Project Management

Duration: 12-Aug-2013 to 31-Jan-2014

Project Investigator(s): Thaniya Jirasathitpornpong
Sponsor: ADB
Total Contracted Amount
(THB): 1,241,580

Contract Management

Duration: 26-Aug-2013 to 30-Jun-2014

Project Investigator(s): Furqan Ali Shaikh
Sponsor: ADB
Total Contracted Amount
(THB): 1,183,200

Project Management

Duration: 19-Aug-2013 to 30-Jun-2014

Project Investigator(s): Furqan Ali Shaikh
Sponsor: LTL Sri Lanka
Total Contracted Amount

(THB): 1,050,000

Capacity Enhancement Program in Supporting High Performance and Potential System

Duration: 11-Nov-2013 to 3-Mar-2014

Project Investigator(s): Worawan Sumroetrum
Sponsor: OCSC
Total Contracted Amount
(THB): 8,852,500

Education Strategic Planning and Management

Duration: 23-Oct-2013 to 2-Jan-2014

Project Investigator(s): Kanlaya Muangsan
Sponsor: HEQEP, Bangladesh and AIT Consulting
Total Contracted Amount
(THB): 958,000

Fiscal Decentralization and Local Public Financial Management

Duration: 27-May-2013 to 30-Mar-2014

Project Investigator(s): Mathew Kuruville
Sponsor: Tanzania
Total Contracted Amount
(THB): 110,625

Training Program on Planning and Management

Duration: 3-Jun-2013 to 31-Mar-2014

Project Investigator(s): Dr.Sunder Venkatesh
Sponsor: Multiple
Total Contracted Amount
(THB): 870,000

Professional Development Program on Credit Analysis

Duration: 17-Jun-2013 to 31-Mar-2014

Project Investigator(s): Dr.Sunder Venkatesh
Sponsor: Bank of Bhutan Limited/Banking Sectors in Nepal
Total Contracted Amount
(THB): 580,000

Agricultural Development

Duration: 10-Jun-2013 to 31-Mar-2014

Project Investigator(s): Sujidtra Pumsombut, Dr. Md. Zakir Hossain and Evanshainia Syiem
Sponsor: Multiple
Total Contracted Amount
(THB): 217,500

Bangladesh exposure program for TSED

Duration: 16-May-2014 to 21-May-2014

Project Investigator(s): Mathew kuruvila
Sponsor: Thai social enterprise office
Total Contracted Amount
(THB): 76,050

Financing Rural infrastructure in china

Duration: 06-Apr-2014 to 09-Oct-2014

Project Investigator(s): Upul
Sponsor: Government of srilanka
Total Contracted Amount
(THB): 372,000

Management and maintenance of road networks in the USA

Duration: 02-Sep-2014 to 27-Nov-2014

Project Investigator(s): Upul
Sponsor: Government of srilanka
Total Contracted Amount
(THB): 744,000

Engineering design, construction, operation, maintenance and protection of gas pipeline (Batch II)

Duration: 21-Apr-2014 to 29-Oct-2014

Project Investigators Tharakorn
Sponsor Multi donor
Total Contracted Amount
(THB): 1,046,250

Engineering design, construction, operation, maintenance and protection of gas pipeline (Batch I)

Duration: 21-Apr-2014 to 29-Oct-2014

Project Investigators furqan
Sponsor Multi donor
Total Contracted Amount
(THB): 1,046,250

Public financial management and budgeting in Thailand and Cambodia

Duration: 20-Apr-2014 to 23-Oct-2014

Project Investigators Worawan sumroetrum

Sponsor Ministry of finance, Govt of Nepal

Total Contracted Amount (THB): 867,995

Ipml,Opr and maintainance monitoring and Eval of Flood control,drainage and irrigation project

Duration: 31-Mar-2014 to 08-Mar-2014

Project Investigators Thaniya J

Sponsor Bangladesh water development Board

Total Contracted Amount (THB): 1,166,130

ICM for sustainable coastal community and Ecosystem services

Duration: 27-Apr-2014 to 06-Nov-2014

Project Investigators Phyu Sin

Sponsor CC &CRMD,Srilanka

Total Contracted Amount (THB): 945,000

Account and Auditing for Gas, Oil and Mining companies

Duration: 07-Apr-2014 to 15-Oct-2014

Project Investigators Phyu Sin

Sponsor Titas Gas transmission and Distribution Co Ltd

Total Contracted Amount (THB): 1,286,497

Account and Auditing for Gas, Oil and Mining companies

Duration: 07-Apr-2014 to 15-Oct-2014

Project Investigators Thaniya J

Sponsor Titas Gas transmission and Distribution Co Ltd

Total Contracted Amount (THB): 1,286,497

Social Business launch pad

Duration: 07-Mar-2014 to 28-Jun-2014

Project Investigators Mathew kuruvila

Sponsor TSEO

Total Contracted Amount (THB): 375,000

Promotion of services and opportunities to the Disability persons project (senior staff)

Duration: 20-Apr-2014 to 23-Nov-2014

Project Investigators Sufian

Sponsor Ministry of social welfare, Bangladesh

Total Contracted Amount (THB): 2,256,000

AGMC Lead Workshop

Duration: 31-Mar-2014 to 02-Oct-2014

Project Investigators Evanshainia

Sponsor USAID

Total Contracted Amount (THB): 480,000

Sustainable development planning and Management

Duration: 17-Mar-2014 to 28-Mar-2014

Project Investigators Pradeep kumar Dash

Sponsor Government of India

Total Contracted Amount (THB): 2,920,500

Professional Development on Education Planning, Budgeting and Monitoring

Duration: 24-Feb-2014to 05-Jun-2014

Project Investigators Warindhorn

Srina and Narumon Wangnai

Sponsor Ministry of Education and Sports, Lao PDR

Total Contracted Amount (THB): 828,750

Climate Change

Duration: 30-Jan-2014 to 30-Jul-2014

Project Investigators Agus S. Prajogo

Sponsor Bangladesh Water Development Board

Total Contracted Amount (THB): 1,109,550

Ensuring Trianing Effectiveness (Batch 5) (Training Course)

Duration: 3-Feb-2014 to 20-Aug-2014

Project Investigators Kanlaya Muangsang

Sponsor Learning Innovation Division, HEC, Pakistan

Total Contracted Amount (THB): 2,726,000

Eco Friendly, Green and Cost Efficient Buildings-UVA Province Officers 2013

Duration: 6-Jan-2014 to 10-Apr-2014

Project Investigators Upul

Sponsor Uva Province, Sri Lanka

Total Contracted Amount (THB): 526,500

Managaing and facillitating Reasearch in Education Institutions

Duration: 18-Aug-2014 to19-Dec-2014

ProjectInvestigators Faisal Alih

Sponsor HEC

Total Contracted Amount (THB):5,807,688

Integrated water resources management

Duration: 02-Jun-2014 to 13-Jun-2014

Project Investigators Nabeel bokhari

Sponsor Bangladesh water development board

Total Contracted Amount (THB):1702614

International Gas Business Management

Duration: 23-Jun-2014 to 19-Dec-2014

Project Investigators Rowena Alcoba

Sponsor GTCL

Total Contracted Amount (THB):765,000

Engineering design, construction, operation, maintenance and protection of gas pipeline (Batch IV)

Duration: 16-Jun-2014 to 24-Dec-2014

Project Investigators furqan

Sponsor Multi donor
Total Contracted Amount
(THB):1,200,000

Engineering design, construction, operation, maintenance and protection of gas pipeline (Batch V)

Duration: 16-Jun-2014 to 24-Dec-2014

Project Investigators Tharakorn
Sponsor Multi donor
Total Contracted Amount
(THB):1,162,500

Environment and Social safeguard

Duration: 30-Jul-2014 to 05-Aug-2014

Project Investigators Chatuphol
Pholwan
Sponsor govt srilanka and SQU
Oman
Total Contracted Amount
(THB):464,000

SEV Program on education quality management and moitoring and evaluation

Duration: 16-Feb-2014 to 25-Feb-2014

Project Investigators kanlaya
muangsan
Sponsor Ministry of education,
Combdia
Total Contracted Amount
(THB): 590,625

Strengthening HEIs for ASEAN Community 2015

Duration: 13-Oct-2014 to 19-Dec-2014

Project Investigators Rowena Alcoba
Sponsor DWCC
Total Contracted Amount
(THB): 417,600

Engineering design, construction, operation, maintenance and protection of gas pipeline

Duration: 24-Feb-2014 to 05-Jun-2014

Project Investigators Afsal Jamil
Sponsor GTCL
Total Contracted Amount
(THB): 812,500

Finacial Analysis modeling and forecasting in Gas Industry

Duration: 25-Feb-2014 to 04-Sep-2014

Project Investigators Rowena Alcoba
Sponsor GTCL
Total Contracted Amount
(THB): 525,000

HR Process competency development and change management program for a gas industry

Duration: 25-Feb-2014 to 04-Sep-2014

Project Investigators Rowena Alcoba
Sponsor GTCL
Total Contracted Amount
(THB): 825,000

Sustainable management of coastal ecosystem

Duration: 10-Feb-2014 to 16-May-2014

Project Investigators Phyu Sin
Sponsor Cost conservation and
coastal resource management, Govt
of Srilanka
Total Contracted Amount
(THB): 557,700

Professional developmenttraining program on Good Governance and leadership for NWP provincial council Srilanka

Duration: 20-Feb-2014 to 27-Aug-2014

Project Investigators Upul
Sponsor North western province of
Srilanka
Total Contracted Amount
(THB): 4,588,000

Integrated water Resource management

Duration: 10-Feb-2014 to 30-Sep-2014

Project Investigators furqan
Sponsor World bank
Total Contracted Amount
(THB): 1,258,800

Leadership and Essential management skills Batch 2

Duration: 10-Feb-2014 to 20-Aug-2014

Project Investigators Thaniya J

Sponsor Karnaphulli gas distribution
Compant Lts
Total Contracted Amount
(THB): 837,000

Road safety and traffic management

Duration: 10-Feb-2014 to 31-Dec-2014

Project Investigators Thaniya J
Sponsor UNESCAP
Total Contracted Amount
(THB): 2,889,129

Customer relationship management

Duration: 12-May-2014 to 28-Jun-2014

Project Investigators Mathew
kuruvila
Sponsor Bhutan development bank
Total Contracted Amount
(THB): 337,500

Credit risk management in central Bank for NRB

Duration: 08-Jun-2014 to 10-Dec-2014

Project Investigators upul
Sponsor Nepal rashtra bank
Total Contracted Amount
(THB): 523,200

Organisational finacial planning and cost control

Duration: 09-Jun-2014 to 19-Dec-2014

Project Investigators Rowena Alcoba
Sponsor HEC
Total Contracted Amount
(THB): 6,325,500

Essential management skills using IT

Duration: 26-May-2014 to 03-Dec-2014

Project Investigators Thaniya J
Sponsor Multi donor
Total Contracted Amount
(THB): 1,007,500

School based management, strategies and implementation

Duration: 23-Jun-2014 to 02-Oct-2014

Project Investigators upul

Sponsor Ministry of local Govt and Provincial council Srilanka
Total Contracted Amount
(THB): 1,980,000

Engineering design, construction, operation, maintenance and protection of gas pipeline (Batch III)
Duration: 02-Jun-2014 to 10-Dec-2014
Project Investigators Tharakorn
Sponsor Multi donor
Total Contracted Amount
(THB): 1,116,000

Urban environmental management and environmental social safeguard
Duration: 16-Jun-2014 to 24-Dec-2014
Project Investigators Chatuphol Pholwan
Sponsor DoPT, Govt of India and Gov of Srilanka
Total Contracted Amount
(THB): 917,494

Human resources management for oil Gas and mineral exploration industries using IT
Duration: 21-Apr-2014 to 29-Oct-2014
Project Investigators Agus S Prajogo
Sponsor Bangladesh gas field company ltd
Total Contracted Amount
(THB): 1,782,500

Customer service management
Duration: 21-Apr-2014 to 01-May-2014
Project Investigators Mathew kuruvila
Sponsor employee providant fund, Nepal
Total Contracted Amount
(THB): 630,000

Human resource advance management visit program
Duration: 23-Jun-2014 to 19-Dec-2014
Project Investigators parichal nuntavong
Sponsor HEC
Total Contracted Amount
(THB): 6,030,994

Contract and project management
Duration: 03-03-2014 to 14-03-2014
Project Investigators Agus S Prajogo
Sponsor Jalalabad Gas trasnmission and distribution system
Total Contracted Amount
(THB): 703,200

Financial management
Duration: 04-03-2014 to 14-03-2014
Project Investigators Thaniya J
Sponsor Bangladesh water development board
Total Contracted Amount
(THB): 1,107,630

Urban flood management and disaster Risk management
Duration: 24-03-2014 to 04-04-2014
Project Investigators upul
Sponsor Govt of srilanka
Total Contracted Amount (THB): 775,000

CSR Asia summit 2014
Duration: 01-Mar-2014 to 31-Dec-2014
Project Investigators Leena Wokeck, Dr Jonathan Shaw
Sponsor
Total Contracted Amount (THB): 300,000

7.7 On-going Grant and Sponsored Trainings

Master Training on FRAME-Fundraising Management and Social Business
Duration: 1-Feb-2012 to 30-Jan-2015
Project Investigator(s): Rowena Alcoba and Mathew Kuruvila
Sponsor: AIT
Total Contracted Amount
(THB): 6,375,000

IWRM and sustainable Sanitation
Duration: 31-Aug-2014 to 05-Mar-2015
Project Investigator(s): Karabee Das
Sponsor: Dry Zone Urban Water and Sanitation Project
Total Contracted Amount

(THB): 614,400

Professional Masters in Banking and Finance , 2014 intake
Duration: 01-Mar-2014 to 31-Dec-2015
Project Investigator(s): Dr Sundar Venkatesh
Sponsor: Bangladesh Bank & Other banks
Total Contracted Amount
(THB): 10,018,000

Professional Masters in Banking and Finance , 2014 intake
Duration: 01-Mar-2014 to 31-Dec-2015
Project Investigator(s): Dr Sundar Venkatesh
Sponsor: Bangladesh Bank & Other banks
Total Contracted Amount
(THB): 10,018,000

ICM for sustainable coastal community and Ecosystem services batch 3
Duration: 19-Jan-2015 to 30-Jan-2015
Project Investigators Phyu Sin
Sponsor CC & CRMD, Srilanka
Total Contracted Amount
(THB): 1,112,046

Construction Management Using IT
Duration: 23-Oct-2013 to 9-Jan-2015
Project Investigator(s): Dr.Sunder Venkatesh
Sponsor: Bhutan Bank, Pakistan, Afganistan
Total Contracted Amount
(THB): 731,600

Low Emission Asian Development (LEAD)
Duration: 17-Jan-2012 to 30-Oct-2016
Project Investigator(s): Merina Lohani Sitoula
Sponsor: USAID
Total Contracted Amount
(THB): 4,200,000

Pump technology in Flood control

Duration: 28-Apr-2014 to 02-Mar-2015

Project Investigators Worawan sumroetrum

Sponsor EBARA, Japan

Total Contracted Amount (THB): 512,000

International Gas Business Management Batch 2

Duration: 14-Jul-2014 to 21-Jan-2015

Project Investigators Rowena Alcoba

Sponsor GTCL

Total Contracted Amount

(THB): 640,000

Plant economics and Designm optimisation in Hydropower Plants

Duration: 13-Oct-2014 to 22-Apr-2015

Project Investigators Worawan sumroetrum

Sponsor Govt Of Bhutan

Total Contracted Amount

(THB): 326,400

Leadership in public utilities for managers in Asia

Duration: 20-Oct-2014 to 08-Apr-2015

Project Investigators Sufian

Sponsor DoPT, Govt Of India

Total Contracted Amount

(THB): 465,000

Project Management using IT

Duration: 13-Oct-2014 to 30-Jun-2015

Project Investigators Thaniya J

Sponsor SGFL, Bangladesh

Total Contracted Amount

(THB): 787,500

Human resource management for Oil, Gas, and mineral exploration industries using IT

Duration: 13-Oct-2014 to 30-Jun-2015

Project Investigators Thaniya J

Sponsor SGFL, Bangladesh

Total Contracted Amount

(THB): 787,500

Organizational development project: Master plan for strategic

execution of asean fisheries management program

Duration: 01-Oct-2014 to 13-Feb-2015

Project Investigators warindhorn srina, narumon wangnai

Sponsor SEAFDEC

Total Contracted Amount

(THB): 315,000

Office management skills

Duration: 10-Nov-2014 to 20-May-2015

Project Investigators Agus S Prajogo

Sponsor Titas gas, Bangladesh

Total Contracted Amount

(THB): 1,248,100

Social Business awareness program

Duration: 27-Oct-2014 to 02-Oct-2015

Project Investigators Mariana

Botero

Sponsor Thai social enterprise office

Total Contracted Amount

(THB): 134,850

Financial and technical project evauation and management of infrastructure projects

Duration: 07-Dec-2014 to 12-Jun-2015

Project Investigators Upul

Sponsor World bank, Govt of

srilanka

Total Contracted Amount

(THB): 512,000

Pipeline risk assessment and management

Duration: 03-Nov-2014 to 13-May-2015

Project Investigators Tharakorn

Sponsor GTCL

Total Contracted Amount

(THB): 1,423,520

Productivity development in Thailand

Duration: 20-Nov-2014 to 18-Jun-2015

Project Investigators Mathew

kuruvila

Sponsor Govt of Srilanka

Total Contracted Amount

(THB): 792,000

Mgt of Inland Fisheries, livestock, dairy Pro and modern Post Harvest Innovation in agri

Duration: 01-Dec-2014 to 03-Jun-2015

Project Investigators Upul

Sponsor Govt of Srilanka

Total Contracted Amount

(THB): 499,200

Social business consulting

Duration: 01-Oct-2014 to 01-Mar-2015

Project Investigators Mariana

Botero

Sponsor Thai social enterprise office

Total Contracted Amount

(THB): 595,200

Governance and anti-corruption eradication strategy program

Duration: 08-Dec-2014 to 17-Jun-2015

Project Investigators Sufian

Sponsor DoPT, Govt of India

Total Contracted Amount

(THB): 570,600

Activities of regional resources center for Asia and the pacific with UNEP

Duration: 01-Jan-2014 to 29-Jun-2015

Project Investigators niramol

Sponsor UNEP

Total Contracted Amount

(THB): 24,616,140

Professional development courses in banking and financing

Duration: 10-Feb-2014 to 12-Jun-2015

Project Investigators mahbooba

Amin

Sponsor Bnagladesh bank, ADB,

bank of Bhutan

Total Contracted Amount

(THB): 2,046,000

Promotion of services and opportunities to the disability persons project (practitioners)

Duration: 23-Jun-2014 to 04-Jan-2015

Project Investigators Sufian

Sponsor Ministry of social welfare,

Bangladesh

Total Contracted Amount
(THB): 2,059,000

Major water resources interventions including MISSISSIPPI Riven value -US

Duration: 04-Aug-2014 to 09-Feb-2015
Project Investigators Agus S Prajogo
Sponsor Bangladesh water authority
Total Contracted Amount
(THB): 1,089,710

Economic viability of large economic project
Duration: 02-Jun-2014 to 15-Jan-2015
Project Investigators Thaniya J
Sponsor Bangladesh water development board
Total Contracted Amount
(THB): 1,669,499

Small holder agriculture transformation and good practises in Thailand

Duration: 29-Jun-2014 to 05-Jan-2015
Project Investigators Chatuphol Pholwan
Sponsor USAID_CIAFS
Total Contracted Amount
(THB): 963,200

Urban environmental management

Duration: 30-Jun-2014 to 07-Jan-2015
Project Investigators Phyu Sin
Sponsor Dept of Personal training, India
Total Contracted Amount
(THB): 556,800

Financial management, accounting and audit

Duration: 10-Aug-2014 to 12-Feb-2015
Project Investigators upul
Sponsor worldbank
Total Contracted Amount
(THB): 672,000

Higher education management

Duration: 25-Oct-2014 to 28-Apr-2015
Project Investigators Upul
Sponsor Srilank foundation

Total Contracted Amount
(THB): 186,000

Development planning

Duration: 03-Nov-2014 to 06-May-2015
Project Investigators Upul
Sponsor Western provincial council srilanka
Total Contracted Amount
(THB): 620,000

Small scale water resources rehabilitation and management

Duration: 20-Oct-2014 to 29-Apr-2015
Project Investigators Phyu Sin
Sponsor UNFAO, Kabul Afganistan
Total Contracted Amount
(THB): 1,230,416

The UN summer school and sustainable consumption and production in Asia and the pacific

Duration: 08-Dec-2014 to 18-Jun-2015
Project Investigators furqan
Sponsor United Nations environment program
Total Contracted Amount
(THB): 1,780,000

Hydropower financing

Duration: 05-Jan-2015 to 22-Jul-2015
Project Investigators Faisal Alih
Sponsor World Bank
Total Contracted Amount
(THB): 6,571,000

Integrated water Resource management

Duration: 24-Nov-2014 to 04-Jun-2015
Project Investigators furqan
Sponsor Multi donor
Total Contracted Amount
(THB): 707,000

Sustainable development planning and management

Duration: 01-Dec-2014 to 11-Jun-2015
Project Investigators Pradeep kumar Dash
Sponsor Govt of India
Total Contracted Amount

(THB): 3,154,800

Operation and maintenance, monitoring and evaluation of Provincial road

Duration: 02-Nov-2014 to 08-May-2015
Project Investigators upul
Sponsor MoLGPC, Govt of Srilanka
Total Contracted Amount
(THB): 608,000

Operation and maintenance, monitoring and evaluation of Provincial road

Duration: 06-Sep-2014 to 13-Mar-2015
Project Investigators Upul
Sponsor MoLGPC, Govt of Srilanka
Total Contracted Amount
(THB): 720,000

Electronic based learning

Duration: 06-Sep-2014 to 12-Mar-2015
Project Investigators Upul
Sponsor Ministry of education, Govt of srilanka
Total Contracted Amount
(THB): 240,000

Management skills development for provincial council officials, Uva Province 2014

Duration: 18-Oct-2014 to 29-May-2015
Project Investigators Upul
Sponsor Govt of srilanka
Total Contracted Amount
(THB): 1,097,600

Digital library management

Duration: 10-Sep-2014 to 22-Mar-2015
Project Investigators Agus S Prajogo
Sponsor IAARD, Indonesia
Total Contracted Amount
(THB): 1,275,000

Capacity development partnership In Mekong Region

Duration: 01-03-2014 to 15-04-2015
Project Investigators Sufian
Sponsor Multi donor
Total Contracted Amount
(THB): 300,000

Finance management, accounting and auditing for Gas Oil and mining companies

Duration: 12-01-2015 to 23-01-2015
 Project Investigators Thaniya J
 Sponser Titas gas transmission and Distribution Co Ltd
 Total Contracted Amount (THB): 1,046,250

Project Management

Duration: 05-01-2015 to 09-07-2015
 Project Investigators Pradeep kumar Dash
 Sponser Flood and errosion management agency in Assam
 Total Contracted Amount (THB): 811,200

Effective negotiation and strategic management for Gas oil and Coal industries

Duration: 12-01-2015 to 03-06-2015
 Project Investigators Rowena Alcoba
 Sponser GTCL
 Total Contracted Amount (THB): 889,350

Chapter 8: INTERNET EDUCATION AND RESEARCH LABORATORY (interERLab)

8.1 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 interERLab 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 interERLab 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 interERLab 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 interERLab 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.

8.2 Mission

To become one of the leading Internet regional centers of excellence; establish-ing interERLab/AIT name, as one of the leading Internet infrastructure 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.

8.3 Unit Governance

PROF. KANCHANA KANCHANASUT

InterERLab Director

8.4 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

8.5 Faculty and Research Staff

Faculty

KANCHANA KANCHANASUT, M.Sc and Ph. D. Computer Science, University of Melbourne, Australia. Graduate Diploma in Computer Science, University of Queensland, Australia. B. Sc. Mathematics, University of Queens-land, Australia.

Professor of Computer Science, School of Engineering and Technology and Director of interLab. [Internet for education; Heterogeneous Networks; Emergency Networks; Mobile Ad Hoc Networks; Streaming Media and Distributed Computing]

Affiliates

MONGKOL EKPANYAPONG, Ph.D., Georgia Institute of Technology. M.Eng., Asian Institute of Technology, Thailand. B.Eng., Chulalongkorn University, Thailand.

Assistant Professor School of Engineering and Technology [VLSI design, physical design automation, micro architecture, compiler, and Embedded Systems]

POOMPAT SAENGUDOMLERT, Ph.D. in Electrical Engineering and Computer Science, MIT, USA M.S. in Electrical Engineering and Computer Science, MIT, USA B.S.E. in Electrical Engineering, Princeton University, USA

Associate Professor School of Engineering and Technology [Areas of Communication Theory; Optical networks; Resource Allocation Problems and Array Processing]

TEERAPAT SANGUANKOTCHAKO-RN, D.Eng in Information Processing, Tokyo Institute of Technology, Japan. M.Eng in

Information Processing, Tokyo Institute of Technology, Japan. Certificate in Japanese Language, Osaka University of Foreign Study, Japan. B.Eng. in Electrical Engineering, Chulalongkorn University, Thailand.

Associate Professor School of Engineering and Technology [Digital Signal Processing; Routing Algorithm in the network such as IP and MPLS network; High Speed network and IP-based multimedia applications]

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]

AIMASCHANA NIRUNTASUKRAT, Ph.D. in Electrical Engineering, University of Maryland (College Park), Master of Engineering in Electrical Engineering, Chulalongkorn University, Bachelor of Engineering (with honors) in Electrical Engineering, Chulalongkorn University

Researcher National Electronics and Computer Technology Center (NEC-TEC) [Network congestion control; Network performance modeling; Application of AI; Biomedical signal processing]

PANITA PONGPAIBOON, Ph.D. in Electrical and Computer Engineering, Carnegie Mellon University Master of Science in Electrical Engineering, Stanford University Bachelor of Science (with University Distinction) in Electrical Engineering, Stanford University

Researcher National Electronics and Computer Technology Center (NECTEC) [Optical network management; IP-overoptical networking; Survivable and fault-tolerant networks; Network measurement; Traffic classification; IPv6; Mobile IP and Intelligent transport system]

ONNO W. PURBO, Ph.D., University of Waterloo, Canada. M.Eng., McMaster University, Canada.

Retired Lecturer from Institute of Technology Bandung (ITB) & Retired Indonesian Civil Servant. He is an Eisenhower Fellow & Ashoka Senior Fellow. In the last 20 years, dedicate his time to educate Indonesians on Information technology, open source, Internet Telephony & Low Cost "Wireless" Internet Access. He has published 40+ books & thousands of articles in IT. He is active in 170+ mailing lists and moderate 10+ mailing lists. His vision is "To See Knowledge Based Society in Indonesia"

THIRAPON WONGSAARDSAKUL, D.Tech.Sc. in Computer Science, Asian Institute of Technology Master of Science in Telecommunications and Computers, George Washington University Bachelor of Engineering in Computer Engineering, Kasetsart University Associate Dean, School of Science and Technology, Bangkok University [Voice over IP; Mobile Ad Hoc Network; Peer to Peer; Distributed Hash Table; Intelligent transport system]

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 WESHUWANNARUGS, 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]

8.6 Grants and Sponsored Research Completed in 2014

interLab IT Service

Duration: 16-May-2013 to 31-Jan-2014
Project Investigator(s): Viraphan Samadi
Sponsor: AIT
Total Contracted Amount (THB): 3,500,000

Internal AIT Internet Service

Duration: 18-Aug-2013 to 31-Dec-2014
Project Investigator(s): Viraphan Samadi
Sponsor: Administration, Schools and other Units at AIT

Total Contracted Amount (THB): 800,000

DUMBO III

Duration: 11-Sept-2011 to 31-Mar-2014
Project Investigator(s): Prof. Kanchana Kachanasut
Sponsor: NECTEC

8.7 On-going Grants and Sponsored Research

DUMBO V

Duration: 01-01-2015 to 31-12-2015
Project Investigators Prof Kanchana Kachanasut
Sponsor NECTEC/ISIF
Total Contracted Amount (THB): 3,000,000

Interlab training 2015

Duration: 01-01-2015 to 31-12-2015
Project Investigators viraphan samadi
Sponsor TEIN4 Engineers, Network engineers
Total Contracted Amount (THB): 2,000,000

Internet exchange

Duration: 01-05-2014 to 31-12-2014
Project Investigators Prof Kanchana Kachanasut, viraphan samadi
Sponsor THNIC Foundation
Total Contracted Amount (THB): 1,000,000

Interlab IT service2015

Duration: 01-01-2015 to 31-12-2015
Project Investigators viraphan samadi
Sponsor AIT
Total Contracted Amount (THB): 7,125,844

AIT internal development and maintainance

Duration: 01-01-2015 to 31-12-2015
Project Investigators viraphan samadi
Sponsor AIT
Total Contracted Amount (THB): 1,500,000

AIT VOIP Telephone maintainance

Duration: 01-07-2014 to 31-12-2014
Project Investigators viraphan samadi
Sponsor AIT
Total Contracted Amount (THB): 480,000

Chapter 9: CENTER OF EXCELLENCE ON SUSTAINABLE DEVELOPMENT IN THE CONTEXT of CLIMATE CHANGE (Coe SDCC)



9.1 Background

AIT's Centre of Excellence on Sustainable Development in the Context of Climate Change (CoE SDCC) was established on 24th September, 2009 to support AIT's vision of responding to global climate change challenges and encouraging trans-disciplinary efforts leading towards a more sustainable society. The Centre consolidates the Institute's research efforts and extends its networks and partnerships by providing a platform to discuss and launch shared initiatives, and pool resources to effectively address issues and challenges in sustainable development and climate change.

9.2 SDCC structure

The Center activities are managed by a Senior Program officer working under the leadership of the recently appointed Director (Mukand S. Babel, Professor of Water Engineering and Management) in

December 2013, who devotes 20% of his time for SDCC and reports to the Vice-President for Research. SDCC works closely with AIT faculty, staff, researchers, students and external partners based on the requirements of the projects. Regular activities include liaison with the leaders of the five thematic research areas, organizing interdisciplinary meetings to respond to call for proposals, circulation of relevant announcements on climate change, assistance on routine administration activities. The five thematic research areas of SDCC are:

1. Disaster Risk Management (DRM) (Thematic leader: Dr. M. Hazarika)
2. Sustainable Land and Water Resources Management (SLWRM) (Thematic leader: Dr. P. Kumar)
3. Business and Innovation Models for a Green Economy (BIMGE) (Thematic leader: Dr. Y. Badir)
4. Urban and Rural Quality of Life and Sustainability (URQLS) (Thematic leader: Dr. E. Sajor)

5. Low Carbon and Sustainable Production & Consumption Technologies and Management (LCSPCTM) (Thematic leader: Prof. S. Kumar/Dr. P. A. Salam)

9.3 Overview of Activities in Year 2013

Climate Technology Center and Network (CTCN)

AIT is part of a consortium of 11 partners across the globe lead by UNEP and UNIDO who successfully bid for the prestigious CTCN initiative of the UNFCCC. The other partners include Bariloche Foundation (BF), Argentina; Council for Scientific and Industrial Research (CSIR), South Africa; The Energy and Research Institute (TERI), India; Environment and Development Action in the Third World (ENDA-TM), Senegal; Tropical Agricultural Research and Higher Education Center (CATIE), Costa Rica; World Agroforestry Centre (ICRAF), Kenya; Deutsche Gesellschaft für Internationale Zusammenarbeit

(GIZ), Germany; Energy Research Centre of the Netherlands (ECN), Netherlands; National Renewable Energy Laboratory (NREL), United States of America; and UNEP Risø Centre (URC), including expertise from UNEP-DHI Centre, Denmark.

The CTCN is the operational arm of the UNFCCC Technology Mechanism. The CTCN mission is to stimulate technology cooperation and enhance the development and transfer of technologies to developing country parties at their request. The scope of services include strengthening capacities of developing countries to identify technology needs; facilitating preparation and implementation of technology projects and strategies; and supporting action on mitigation and adaptation to enhance low-emission and climate-resilient development.

Several projects are expected under this initiative of UNFCCC and some of them have already been implemented by SDCC.

Asian Center of Innovation for Sustainable Agriculture Intensification (ACISAI)

Asian Center of Innovation for Sustainable Agriculture Intensification (ACISAI) was established in January 2013, under the SDCC platform, to strengthen SLWRM research theme of SDCC.

The goal of the Center is to develop multi-stakeholder network for co-generation of knowledge, capacity building of the agricultural professionals and institutions to strengthen Agricultural Research for Development (AR4D) issues, and foster linkages between local, national, and international institutions for inclusive dialogue, knowledge sharing and dissemination on convergent subject areas such as food security, climate change and global partnerships for achieving international public goods and finally develop committed young professionals with new knowledge and skills required to realize the potential of

sustainable agriculture intensification (SAI) in Asia and beyond. The funding support for the ACISAI comes from a European Union Funded AR4D project "Sustaining and Enhancing the Momentum for Innovation and Learning around the System of Rice Intensification (SRI) in the Lower Mekong River Basin".

Sponsored Projects

Following sponsored research and capacity building projects were initiated/ conducted under SDCC in 2014:

Title: Integrated Pest Management and Production in the Context of Climate Change

Brief description: The project activities comprise of a 4-week training course on Integrated Pest Management and Production in the context of climate change involving class room lectures, field visits and laboratory exposure.

Duration: Feb 2013 – Dec 14

Principal Investigator(s): Dr. Prabhat Kumar and Dr. Abha Mishra

Sponsor: FAO Afghanistan

Budget: 2,669,041 THB

Exposure to rural development initiatives in Thailand: Community Level Agro processing Marketing to Generate income Create employment and entrepreneurship Developments

Duration: 19-05-2014 to 31-10-2014

Project Investigators Dr Muhammad abu Yousuf

Sponsor one house one farm EBK project of GOB

Total Contracted Amount (THB): 1,351,040

9.4 Ongoing Research activities 2014

Title: Sustaining and Enhancing the Momentum for Innovation and Learning around Systems of Rice Intensification (SRI) in Lower Mekong River Basin

Brief description: This 5-year project is being implemented in the rain-fed areas

of Cambodia, Laos, Thailand and Vietnam. The project goal is to enhance the resilience of smallholder farmers in rain-fed regions to deal with climate change challenges.

Duration: Jan 2013 to Jan 2018

Principal Investigator(s): Dr. Abha Mishra and Dr. Prabhat Kumar

Sponsor: European Commission

Budget: 50,342,441 THB

Capacity development of UPEHSD project stakeholders

Duration: 27-10-2014 to 30-12-2015

Project Investigators Muhammad abu Yusuf

Sponsor urban Public and environment health sector and ADB

Total Contracted Amount (THB): 541,438

Title: Climate Technology Centre and Network (Phase -1)

Brief description: The central theme of the project is to foster capacity building in developing mitigation and adaptation strategies for the water and forestry sector in response to climate change. Diverse tools and resources have been identified to be added to the knowledge management system of UNEP. Webinars and workshops will be conducted to enhance the capacity of NDEs.

Duration: Oct 2013 – June 2015

Principal Investigator(s): Prof. Mukand S. Babel, Dr. Rajendra Shrestha, and Dr. Sangam Shrestha

Sponsor: UNEP

Budget: 3,900,000 THB

Emerging Pests and Diseases of Cassava in Southeast Asia: seeking eco-friendly solutions to overcome a threat to livelihood and industries

Brief description: The project is designed to include country level monitoring. Research extension and capacity-building on key pests and diseases of cassava particularly targeting cassava witches broom disease and a complex invasive cassava mealybugs

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

9.5 Related activities

Apart from the research and sponsored projects mentioned here, several climate change and sustainable development related activities have also been carried out by the Schools, which have been presented under the respective Schools/Fields of Study.

Chapter 10: INSTITUTE-WIDE SPONSORED AND CONTRACTED PROJECTS

10.1 Grants and Sponsored Research Completed in 2014

Oxfam Business Engagement for sustainable Development

Duration: 15-Dec-2013 to 31-Mar-2014
Project Investigator(s): Leena Workeck, Jonathan Shaw
Sponsor: Oxfam
Total Contracted Amount (THB): 701757.44

Organization of Capacity Building Workshop for Different Sectors/ Stakeholders Small Scale Funding Agreement

Duration: 1-Jan-2013 to 30-Jun-2014
Project Investigator(s): Ahmed Amjad Ali
Sponsor: United Nation Environment Programme (UNEP)
Total Contracted Amount (THB): 5,490,000

Kombifinanzierung EU-Forderung der landlichen Entwicklung

Duration: 1-Nov-2013 to 31-Mar-2014
Project Investigator(s): Dr. Theo Ebberts
Sponsor: German International Cooperation (GIZ)
Total Contracted Amount (THB): 2,079,000

Capacity Building for climate technology

Duration: 1-Nov-2013 to 31-Aug-2014
Project Investigator(s): Dr. Shobhakar Dhakal
Sponsor: UNEP, Thailand
Total Contracted Amount (THB): 2,787,000

Corporate Social Responsibility (CSR) Initiative Onyx Hospitality Group

Duration: 30-Jun-2013 to 30-Mar-2014
Project Investigator(s): Leena Workeck, Jonathan Shaw
Sponsor: ONYX Hospitality Group
Total Contracted Amount (THB): 600,000

Save Food Asia and the Pacific

Duration: 1-Feb-2013 to 30-Mar-2014

Project Investigator(s): Dr. Prabhat Kumar, Dr. Abha Mishra, Dr. Anil Anal and Dr. W. Gallarrdo
Sponsor: FAO RAP Office, Bangkok, Thailand
Total Contracted Amount (THB): 4,605,000

CSR Asia Summit 2013

Duration: 1-May-2013 to 31-Mar-2014
Project Investigator(s): Leena Workeck
Sponsor: CSR Asia LTD.,
Total Contracted Amount (THB): 1,578,418.8

Integrated Pest and Production Management in the Context of Climate Training

Duration: 1-Feb-2013 to 30-Dec-2014
Project Investigator(s): Dr. Prabhat Kumar and Dr. Abha Mishra
Sponsor: FAO Afghanistan
Total Contracted Amount (THB): 2,597,985

Strengthening Higher Education Program Grant No. H162-AF

Duration: 1-Aug-2012 to 31-Aug-2014
Project Investigator(s): Dr. Naveed Anwar
Sponsor: Ministry of Higher Education, Bhabul, Afghanistan
Total Contracted Amount (THB): 22,383,100

Taking Stock How SMART Food Product and Processing Food Losses and GHG Emissions

Duration: 1-Dec-2013 to 30-Jun-2014
Project Investigator(s): Dr. Anal Kumar Anal
Sponsor: Food and Agriculture Organization
Total Contracted Amount (THB): 480,000

Development of a Membrane Based Treatment of TEG for Gas Separation Plant's Wastewater

Duration: 20-Feb-2013 to 31-Sep-2014
Project Investigator(s): Prof. C. Visvanathan
Sponsor: Ptt Public Company Limited, Thailand
Total Contracted Amount (THB): 2,287,500

Partnership for Market Readiness

Duration: 1-Mar-2013 to 31-May-2014
Project Investigator(s): Prof. S. Kumar and Dr. Abdul Salam
Sponsor: TGO (Thailand Greenhouse Gas Management)
Total Contracted Amount (THB): 180,000

Measuring the influence of sound material society in Thailand

Duration: 18-Apr-2013 to 30-Apr-2014
Project Investigator(s): Dr. Vilas Nitivattananon
Sponsor: Sumitomo Foundation
Total Contracted Amount (THB): 0

ICUE 2014-Green Energy for Sustainable Development International Conference

Duration: 1-Jun-2013 to 31-Dec-2014
Project Investigator(s): Dr. Shobhakar Dhakal, Dr. Weerakorn Ongsakul, Dr. P. Abdul Salam, Prof. S. Kumar, Dr. Jai Govind Singh, Dr. Charles OP Marpaung
Sponsor: Registration revenues/sponsorships/grants
Total Contracted Amount (THB): 1,859,790

Impacts, Treatment and Management of Acid Mine Drainage (ITMAM)

Duration: 1-Apr-2013 to 30-Jun-2014
Project Investigator(s): Prof. Ajit P. Annachhatre
Sponsor: UNESCO-IHE Partnership Research Fund (UPaRF)
Total Contracted Amount (THB): 0

Sustainable Mekong Research Network II

Duration: 10-Aug-2013 to 31-Jan-2014

Project Investigator(s): Prof. Sivanappan Kumar and Dr. Kyoko Kusakabe
Sponsor: Stockholm Environment Institute (SEI)
Total Contracted Amount (THB): 232,000

Laboratory Training program in Food Engineering and Advanced Technologies
Duration: 24-Oct-2013 to 31-Jan-2014
Project Investigator(s): Dr. Anil Kumar Anal and Mr. Imran Ahmad
Sponsor: Sultan Qaboos University Oman
Total Contracted Amount (THB): 63,320

Survey and assessment of street vending policies and regulation: Focus on Thailand Case
Duration: 1-Nov-2013 to 30-Apr-2014
Project Investigator(s): Dr. Kyoko Kusakabe
Sponsor: International Labour Office (ILO)
Total Contracted Amount (THB): 301,266

Characterization of Municipal Solid Waste in Phetchaburi Province, Thailand
Duration: 1-Sep-2013 to 31-May-2014
Project Investigator(s): Prof. C. Visvanathan
Sponsor: Phetchaburi Green Energy Co. Ltd., AMC Power PCL, Thailand
Total Contracted Amount (THB): 450,000

Study of Ground-level Ozone in Bangkok Metropolitan Region by Advance Mathematical Modeling for Air Quality Management
Duration: 1-Sep-2012 to 1-Sep-2014
Project Investigator(s): Prof. Nguyen Thi Kom Oanh
Sponsor: Ptt Public Company Limited
Total Contracted Amount (THB): 1,797,600

Evaluation of Two Technologies for Heavy Metals Removal under Tropical condition (EVOTEC)
Duration: 1-Sep-2012 to 31-May-2014
Project Investigator(s): Prof. Ajit P. Annachhatre
Sponsor: UNESCO-IHE Partnership Research Fund (UPaRF)
Total Contracted Amount (THB): 487,500

10.2 On-going Grants and Sponsored Research

Climate Technology Centre and Network phase 1
Duration: 1-Sep-2013 to 30-Jun-2015
Project Investigator(s): Prof. Mukand S. Bable, Dr. Sangam Shrestha and Dr. Rejendra Shrestha
Sponsor: UNEP, Kenya
Total Contracted Amount (THB): 579,846

Hand in Hand Micro Finance Private Limited
Duration: 1-Jul-2012 to 1-Jun-2015
Project Investigator(s): Dr. Theo Ebberts
Sponsor: HiHMFPL
Total Contracted Amount (THB): 2,620,000

Strengthening institutional capacity extension services and Rural Livelihood
Duration: 1-Jan-2013 to 31-Dec-2016
Project Investigator(s): Dr. Clemens Grunbuhel
Sponsor: ACIAR
Total Contracted Amount (THB): 16,449,382

AIT's Green Campus Initiatives
Duration: 1-Dec-2013 to 30-Jun-2015
Project Investigator(s): Prof. Sivanappan Kumar and Prof. C. Visvanathan
Sponsor: ADEME, France
Total Contracted Amount (THB): 2,200,000

AGS_Asia secretariat
Duration: 01-Aug-2014 to 31-Jul-2015
Project Investigators Prof. Kazuo Yamamoto
Sponsor Mitsubishi Rayon Company
Total Contracted Amount(THB): 312,000

Chapter 11: OVERVIEW OF RESEARCH ACTIVITIES FOR 2014

Overall during the period January to December of 2014 there were 393 sponsored and contracted projects which were conducted by the faculty and staff from within the Fields of Study (FoS) of the three schools, SET, SERD and SOM, as well as in AIT Extension, InterERLab, and Institute wide projects. The total Publications for the same period stood at 457 from across AIT. The breakdown of which is indicated in the table below.

SCHOOL/FoS	SPONSORED & CONTRACTED PROJECTS		TOTAL PROJECTS	PUBLICATIONS				TOTAL PUBLICATIONS
	Completed	On-going		Refereed Journals	Conference Proceedings	Refereed Books/Chapters	Other Publications	
SET	37	52	93	110	49	11	1	171
CS/IM	0	1	1	13	5	1		19
CEIM	2	4	6	7	1			8
GTE	2	0	2	3	6			9
IME	2	3	5	10	6	1		17
Mech/MES	5	7	12	7	6		1	14
Nano			0	7				7
RSGIS	11	21	32	24	3		0	27
StE	4	0	4	2				2
TC			0	3	12			15
TrE	2	3	5	1				1
ICT			0	1	4			5
WEM	9	13	22	32	6	9	0	47
OTM			0					0
SERD	45	78	123	123	48	44	57	272
ASE	0	5	5	2	0	1	1	4
AARM	1	7	8	6	11		1	18
E	11	10	21	15	13	3		31
EEM	12	20	32	33	15	17	18	83
FEBT	2	8	10	25	0	9	1	35
GDS	9	15	24	9	0	9	32	50
NRM	4	7	11	9	4	0	1	14
PPT			0					0
RRDP	0	1	1	4		1		5
UEM	4	4	8	2	1	0	3	6
ABM		1	1	9	4	1		14
DPMM	2	0	2	9		3		12
SOM	4	9	13	10	4			14
intERLab	3	6	9					
AIT Ext	83	46	129					
Inst-wide	21	5	26					
TOTAL	193	196	393	243	101	55	58	457

School/Fos	Doctoral Student's Dissertation	Masters Students Research				Total Masters Students Research
		Thesis	Research Studies	Projects	Internships	
SET	29	107	26	44	2	179
CIE						
CEIM	4	15		44		59
CS	4	5	2			7
IEM						
GTE	1	11	13			24
ICT		5	1			6
IM		5	5			10
IME	1	5				5
ME	3	13				13
MES		4				4
MI						
NT	1					
OTM		3			2	5
RSGIS	7	8				8
STE	1	8				8
TC	2	2	4			6
TE	1	7	1			8
EL						
WEM	4	16				16
SERD	35	141	2	0	0	143
AARM		5				5
ABM		4				4
ASE	4	9				9
CCSD		4				4
E	5	21	2			23
EEM	7	26				26
FBT	1	11				11
GDS	2	11				11
NRM	5	12				12
PPT		7				7
RRDP	6	22				22
UEM	5	9				9
UM						
SOM	12	0	13	118	0	131
SET&SERD	2	16	0	0	0	16
DPMM		6				6
UWEM	2	10				10
SERD&SOM	0	0	3	0	0	3
EBM			3			3
TOTAL	78	264	44	162	2	472

For the same period January to December of 2014 there was a total of **78** Doctoral Dissertations which were undertaken by the faculty from within the Fields Study (FoS) of the three schools, SET, SERD and SOM. The total Masters Student Research for the same period stood at **472** from within the three schools. The breakdown of which is indicated in the table above.