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CENTER OF EXCELLENCE ON ENERGY TECHNOLOGY AND ENVIRONMENT



JGSEE Newsletter

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SEE 2018



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Energy Policy
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Contribution to International Forum

ASE 2018 Moving Towards ASEAN's Smart Cities

UBM Asia and JGSEE-CEE at KMUTT successfully organised the International Conference on the Future of ASEAN'S Energy Journey E-mobility - Smart Grid - Smart City or ASE 2018 (formerly known as Renewable Energy Asia) on the theme "Moving Towards ASEAN's Smart Cities". The event was held on 6 June 2018 at the Bangkok International Trade and Exhibition Center (BITEC). It aimed at providing a forum for participants to update and share their knowledge and experiences with regards to policy formulation, technology and market developments. ASE 2018 featured both plenary and parallel sessions.

In the morning, a plenary session was held in conjunction with the 3rd International Electric Vehicle Technology Conference and Exhibition (iEVTech 2018) and IEEE International Transportation Electrification Conference and EXPO Asia-Pacific (ITEC Asia-Pacific 2018) on the theme "E-Mobility: A Journey from Now and Beyond". Parallel sessions were held in the afternoon and involved local and international speakers who were invited to deliver talks on key topics including: 1) Sustainable Buildings and Cities; 2) The Components of a Future Energy Landscape: Storage, Wind and Smart Grid; 3) Photovoltaic: Rooftop and Larger PV Power Plant; and 4) Bio-Energy Pretreatment, Consumption and Pyrolysis of Biomass. ASE 2018 gathered over 200 international participants from the sectors of academia, industry and government.



JGSEE Visits INTERSOLAR Exhibition and Fair in Munich

During 18-27 June 2018, the Trier University of Applied Sciences in Germany represented by Prof Christoph Menke invited Assoc Prof Dr Bundit Fungtammasan, KMUTT Senior Vice President for Research & Innovation, "Prof Jeong Hyop Lee, Senior Advisor of the KMUTT Science, Technology and Innovation Policy Institute, and Assoc Prof Dr Pipat Chaiwiwatworakul and Ms Apinya Puapattanakul, JGSEE academic staffs to attend the INTERSOLAR Exhibition and Fair in Munich. This event is the world largest solar exhibition and involves major PV companies and research institutions. During this visit, meetings were also organised during which global PV technology, PV market size and global industry trends were discussed as well as the strategic position of Thailand in the global energy industry. Discussions on potential research collaborations were also held with a particular emphasis on PV and battery technologies for Thailand.



Contribution to Society

Combustion Research Network Development in Thailand

JGSEE-CEE and the National Science and Technology Development Agency (NSTDA) successfully organised the 1st focus group meeting of the research project titled “Development of Combustion Research Network and the Combustion Center” on 5 June 2018 at KMUTT. The meeting aimed at initiating the establishment of a network of researchers working on combustion technology and other related technologies from the government and industrial sectors in order to enhance know-how and strengthen combustion research in Thailand.

At the start of the event, welcome remarks were delivered by Assoc Prof Dr Suneerat Fukuda, JGSEE-CEE Director and opening remarks by Asst Prof Dr Suthum Patumsawad, Program Director of Renewable Energy & New Energy Technology, NSTDA. During the meeting, the current status of combustion research in Thailand was presented by Dr Supachita Kerkaiwan, JGSEE researcher. Also, research directions on combustion technology in Thailand and the importance of combustion research for the industrial sector were discussed as part of a session titled “Combustion Research for Industrial Development: Moving Forward to Thailand 4.0”. Experts on combustion technology in Thailand including, Dr Boonrod Sajjakulnukij from JGSEE-CEE, Mr Somnuk Thampipit from Thai Steam Service & Supply Co., Ltd., Mr Wichai Sathapitanon from the Thai Association of Boiler and Pressure Vessel, and Dr Somsak Apinyachon from the Thai Biomass Trade Association were invited to contribute their knowledge and experiences during that time.

The meeting was a great success. It gathered over 60 representatives from the government, academic and private sectors in Thailand. The ideas and experiences shared by participants of the meeting are key contributions to the future development of the Combustion Research Network in Thailand.

Contribution to Knowledge Platform

No Waste in Canals Capacity Development Training for BMA District Officers



The Collaborative Research Laboratory in Thailand (CRL) which involves the National Institute for Environmental Studies (Japan), Kasetsart University and JGSEE-CEE, including Thammasat University, successfully organised the “No Waste in Canals” Capacity Development Training for BMA district officers on 13 June 2018 at the Century Park Hotel in Bangkok. This training was held under the APN project titled “Adaptation of Solid Waste Management to Frequent Floods in Vulnerable Mid-scale Asian Cities”. It aimed at providing participants “with knowledge on actions to take in order to enhance the resilience of waste management systems to floods at local level.

The morning session focused on sharing research findings on waste in canals and drainage capacity under different waste blockage conditions, including awareness raising tools elaborated under the APN project. The afternoon session focused on the preparation of action plans for department/district offices to reduce waste dumping in canals and sewages. The training gathered over 50 participants from 47 BMA districts including the Department of Environment and the Department of Drainage Sewerage.

JGSEE Student Attends CapREG Seminar in Germany

Ms Apinya Puapattanakul, JGSEE-CEE researcher under the Energy and Environmental Policy Laboratory (EEPL) was nominated to receive a scholarship to participate to the CapREG seminar on "P9 - Energy System Transformation" which took place during 28 May - 1 June 2018 in Berlin, Germany. The seminar was organised by the Renewables Academy AG (RENAC) and is part of the CapREG project funded by the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) within the German International Climate Initiative. This seminar aimed at providing a forum to disseminate technical knowledge as well as to promote networking and the exchange of experiences on renewable energy and grid integration to professionals from Indonesia, Thailand, the Philippines, Vietnam, Ecuador, Mexico and Peru.

The 5-day seminar covered the following topics and items:

- Germany's energy system transformation & co-benefits of renewables.
- Long term energy strategy development: residual load calculation, cost of renewable energy.
- Market design for flexible power systems and technical feasibility of thermal power plants.
- Technical site visit to utility scale grid connected 80 MW PV farm in Finow.
- Visit of the renewable energy village Feldheim with visit to wind and PV farm.
- Practical laboratory session on wind power & PV, site visit to RENAC's grid connected PV roof top system.
- Technical site visit to power-to-heat-/power-to-cool system from GASAG Solution GmbH at the EUREF Campus.
- Group works on lessons learnt and role play on long term renewable energy strategy development.



Visit of NASA Scientist from Columbia University

On Thursday 12 July 2018, Dr Robert Field visited JGSEE-CEE at the Bangkhunthian campus to give a special talk on "Fires, Climate, and Air Quality in Southeast Asia". Earlier that same week, Dr Field had visited the Hydro and Agro Informatics Institute (HAIL) (Public Organization) to deliver a talk on "Advances in Water Isotope Applications in Atmospheric and Hydrological Sciences", and also a forest-fire research unit at Kasetsart University for scientific discussions.

Dr Field has worked as a scientist for the NASA Goddard Institute for Space Studies (GISS) and Columbia University since 2010. His recognized research fields include climate-fire-smoke and water isotope. His visit to Thailand was supported through a research project led by Assoc Prof Dr Kaseman Manomaphiboon (JGSEE), Dr Surajate Boonya-aroonnet (HAIL) and Dr Kanoksri Sarinnapakorn (HAIL), and which corresponds to a second funding under a MOU of Collaboration between JGSEE and HAIL. Most activities during the visit were facilitated by Mr Nishit Aman and Ms Jirawan Kamma (JGSEE students) as well as Dr Veerachai Tanpipat (HAIL).



Contribution to Industry

LCA and CFP Training for Tipco Asphalt Public Company Limited (TASCO)

JGSEE-CEE in collaboration with the Management System Certification Institute (Thailand) successfully organised a technical training on “Life-Cycle Assessment (LCA) and Carbon Footprint Assessment of Products (CFP)” during 19-20 June 2018 and 18-20 July 2018 for the Tipco Asphalt Public Company Limited (TASCO). About 40 staffs from five factories located nationwide, including the head office of TASCO, joined the training course. The training delivered by Asst Prof Dr Thapat Silalertruksa of LCSAL aimed at providing participants with technical knowledge and skills on LCA and CFP for further implementation at the level of the company to achieve sustainability development targets. The training program covered theories, standards and methods. It also included a workshop focusing on a comprehensive case-study. TASCO is one of the leading asphalt industries in Asia. It manufactures and distributes asphalt products, and provides services for road construction and maintenance as well as to paving industries that are essential for transportation.

Contribution to Research Platform

Dr Janewit Wannapeera, Visiting Researcher at Kyoto University under SATREPs Project



Dr Janewit Wannapeera, JGSEE-CEE researcher under the Advanced Fuel Processing Laboratory (AFPL) was invited to Kyoto University (Japan) as a visiting researcher from 1 July 2015 to 30 June 2018 under the Japan-Thailand cooperation (SATREPs) project titled “Development of Clean and Efficient Utilization of Low Rank Coals and Biomass by Solvent Treatment”. The project is supported by JST and JICA and will end on 31 March 2019. At Kyoto University, Dr Janewit was responsible for the production of hollow carbon fiber using biomass waste and low rank coal. This work was performed under the supervision of Prof Kouichi Miura, SATREPs project leader from the Institute of Advanced Energy at Kyoto University, Japan.

Kick-off Meeting of NASA Funded Project



Dr Varaprasad Bandaru is an Associate Research Professor from the Department of Geographical Sciences, University of Maryland (USA) and is an expert on large scale modeling of agricultural systems. He visited JGSEE-CEE on 30 May 2018 and delivered a talk on “Geospatial Modeling and Support of Decision Making in Agriculture for Food Security and Environmental Sustainability”. The talk was attended by participants from KMUTT, JGSEE, Mitr Phol and NSTDA. Following the presentation, a kick off meeting was held regarding a NASA funded project titled “Agricultural Land Use Change in Central and Northeast Thailand: Effects on Biomass Emissions, Soil Quality and Rural Livelihoods”.

This research work is led by Dr Bandaru and involves JGSEE as local collaborator with specific contributions from Drs Savitri Garivait (AGAR) and Sebastien Bonnet (LCSAL). The meeting was also attended by a couple of representatives from Mitr Phol including, Mr Panyawat Chattanrassamee, Innovation Sourcing expert, and Dr Vorraveerukorn Veerachitt, Crop Model specialist. This 3 year-project aims at investigating the impacts of recent land use changes in Central and Northeast Thailand on biomass emissions, soil quality, and economic well-being in rural communities. Updates about the project research activities and progress will be posted in next issues of the newsletter.



Contribution to National Policy

Meeting on Direction of Solar Energy in Thailand



On 28 June 2018, JGSEE-CEE successfully organised a meeting on “Direction of Renewable Energy in Thailand - Solar Energy: Current Hot Issue”. The meeting was held at the Knowledge Exchange (KX) Building of KMUTT.



At the start of the event, welcome remarks were delivered by “Assoc Prof Dr Suneerat Fukuda, JGSEE Director to inform of the importance and objective of the meeting. Four experts on solar energy in Thailand were then invited to deliver special presentations on the following topics: “Potential of Solar Energy in Thailand” by Dr Boonrod Sajjakulnukij, JGSEE lecturer; “Current Situation and Future Directions of Solar Cells in Thailand” by Prof Dusit Kuangam, Chairman of the Thai Photovoltaic Industries Association; “Rules and Regulation on Power Purchasing from Solar PV in Thailand” by Mr Viraphol Jirapraditkul, Thailand Energy Regulatory Commission (ERC); and “Activities and Supporting Plans of EGAT for Power Generation from Solar PV and other RE Sources” by Mr Saharath Boonpotipukdee, Deputy Governor Renewable and New Energy, Electricity Generating Authority of Thailand (EGAT).

The event ended with a panel discussion on “Direction/Problems/Solutions of Solar PV in Thailand”. The session was moderated by Dr Supachita Kerkkaiwan, JGSEE researcher. Many suggestions and ideas were shared in relation to future power generation targets to be achieved from solar PV in Thailand. The meeting was a great success gathering over 100 representatives from government, academic and private organisations.

Welcome New Comers

Dr Nittaya Cha-un



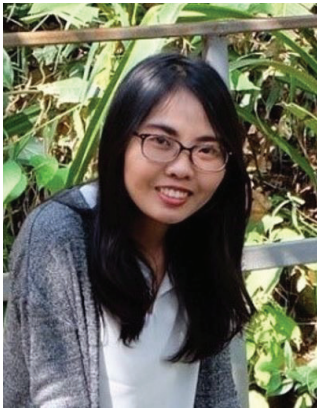
In 2016, Dr Nittaya earned a PhD degree in Environmental Technology on “Agricultural Land Management in Rain-Fed Rice Field using Energy Crop Rotation”. The thesis was supervised by Assoc Prof Dr Sirintornthep Towprayoon from JGSEE-CEE. Dr Nittaya is now doing research on “Development of Greenhouse Gas Mitigation Technology in Rice Field - Case Study: Thai Hom Mali Rice”. This work is part of a project titled “Climate Change Technology and Innovation (CTI)” which is supervised by Assoc Prof Dr Sirintornthep Towprayoon.

Dr Sarunnoud Phuphisith



In 2017, Dr Sarunnoud earned a PhD degree in Environmental Engineering on “Promotion of People’s Pro-Environmental Perceptions and Behaviors in Bangkok, Thailand”. The thesis research work was performed under the supervisions of Assoc Prof Dr Kiyo Kurisu and Prof Dr Keisuke Hanaki from The University of Tokyo, Japan. Dr Sarunnoud is now working on “Development of Green and Low Carbon City”. This research work is performed under a project titled “Integrated Energy and Environment for Sustainable Green Urban Approach (SUD-2) Program” which is supervised by Assoc Prof Dr Sate Sampattagul.

Dr Somprasong Siramard



In 2017, Dr Somprasong earned a PhD degree in Chemical Engineering on “Oil Shale Pyrolysis under Non-conventional Conditions”. The thesis work was supervised by Prof Guangwen Xu from the University of Chinese Academy of Science, China. During her PhD studies, she received the scholarship of CAS-TWAS President’s Fellowship for International Students. Dr Somprasong is now working on “Catalytic Hydro-deoxygenation of Model Bio-oil over NiMo and CoMo Catalysts for the Upgrading of Bio-oil”. This work is performed under a project titled “Efficient Biomass Conversion Technologies for Biofuel and Bioenergy Production (BBB) Program” which is supervised by Assoc Prof Dr Suneerat Fukuda.

Recognition

Congratulations to Dr Pipat Chaiwiwatworakul for his Promotion to Associate Professor



JGSEE-CEE is pleased to congratulate Dr Pipat Chaiwiwatworakul for his promotion to the position of Associate Professor. Dr Pipat was recruited in 2008 as a lecturer in the Energy Division of JGSEE. He contributes to the activities of the Building Energy Science and Technology Laboratory (BEST) headed by Prof Surapong Chirattananon. Over the years, his research work has been dealing with a broad range of subjects, including, rational use of energy and energy conservation in building as well as efficient lighting, daylighting and building heat transfer, human visual and thermal comfort, and atmospheric science. He has contributed to the publication of 22 international journal papers in related areas.



Upcoming Event



JGSEE



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INTERNATIONAL CONFERENCE ON SUSTAINABLE ENERGY AND ENVIRONMENT "Technology & Innovation for Global Energy Revolution"



28-30 November 2018
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SEE 2018 secretariat

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