



The Grand GMSARN International Conference 2018

28-30 November 2018

Ramada Encore Hotel Nanning, Guangxi Province, China

Program at a Glance (Tentative)

Time	Day 1: November 28, 2018 (Wednesday)	
08:00 – 09:00	REGISTRATION & Opening Session (Conference Hall, 29 th Floor)	
09:00 – 09:10	Introductory Remarks: Prof. Dr. Weerakorn Ongsakul <i>GMSARN Secretary General & Conference Executive Director</i>	
09:10 – 09:20	Welcome Address: Prof. Dr. Zhao Yueyu <i>President, Guangxi University</i>	
09:20 – 09:30	Opening Address: Prof. Emeritus Dr. Sahas Bunditkul <i>Chairman of Executive Committee, Asian Institute of Technology, Thailand</i>	
09:30 – 09:45	Photo Session	
09:45 – 10:30	Keynote Address 1: “Energy of ASEAN” By Dr. Subin Pinkayan <i>Founder/Honorary Advisor, GMS Power Public Company Limited, Bangkok Thailand</i>	
10:30 – 10:45	Coffee/Tea Break – 15 minutes	
10:45 – 11:30	Keynote Address 2: “Experiences in Design and Implementing Megawatt Scale PV-ESS-DG for Isolated Microgrid System” By Dr. Wuthipong Suponthana <i>Managing Director, LEONICS Co., Ltd., Bangkok, Thailand</i>	
11:30 – 13:00	Lunch Break (90 minutes)	
13:00 – 15:30	Break out Session 1	
	<i>Conference 1</i>	S1.1: Energy 1
	<i>Conference 2</i>	S1.2: Environment 1
15:30 – 15:45	Coffee/Tea Break – 15 minutes	
15:45 – 17:15	Break out Session 2	
	<i>Conference 1</i>	S2.1: Energy 2
	<i>Conference 2</i>	S2.2: Development 1
18:30 – 20:30	Welcome Reception Dinner at Ramada Encore Hotel Nanning	



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Time	Day 2: November 29, 2018 (Thursday)	
09:00 – 10:00	Keynote Address 3: “Enabling Blockchain Energy Trading among Smart Buildings through the Use of Multi-Agent Systems and Internet of Things Devices” By Dr. Warodom Khamphanchai <i>Researcher, Provincial Electricity Authority, Bangkok, Thailand</i>	
10:00 – 10:15	Coffee/Tea Break – 15 minutes	
10:15 – 12:00	Break out Session 3	
	<i>Conference 1</i>	S3: Development 2 & Environment 2
12:00 – 13:00	Lunch Break (75 minutes)	
13:00 – 20:30	Field visit to Yiling Cave & Dinner (Optional)	

Time	Day 3: November 30, 2018 (Friday)	
09:00 – 10:45	Break out Session 4	
	Conference 1	S4: Development 3
10:45 – 11:00	Coffee/Tea Break – 15 minutes	
11:00 – 11:15	GMSARN2018 Recap By Prof. Dr. Weerakorn Ongsakul GMSARN Secretary General & Conference Executive Director	
11:15 – 11.30	Closing Remarks By Dr. Eden Y Woon President, Asian Institute of Technology, Thailand	
11:15 – 13:00	Lunch Break	
End of Conference		



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Keynote Address 1

“Energy of ASEAN”



DR. SUBIN PINKAYAN

*Founder/Honorary Advisor, GMS Power Public Company Limited
Bangkok, Thailand*

Due to the eruption of technology for solar energy generation, the cost of solar energy is exponentially reduced. Now solar energy cost is the least among the other energy costs by fossil fuel, nuclear and also hydro. But the solar energy generation has a limited period of time. Hydro power plant with pump storage system could be made the storage of energy generated by solar during day time and released water through turbines during night time. Lao PDR and Southern China are the most richest hydro power generation and also have a very good sunshine in ASEAN. The hybrid generation of hydro power plants with solar power plants by pump storage system will make the Battery of ASEAN.

Dr. Subin Pinkayan is the Chief Honorary Advisor to SEATEC (Southeast Asia Technology Company Limited) Group of Companies. He served as President of SEATEC from 1974-1985 and has been an advisor in management of Thai consulting engineering firms engaged in numerous projects in Thailand and in Southeast Asia with emphasis on water resources development, environmental engineering, civil and structural design and agro-industrial development. He has been a Member of the Board of the Council of Engineers (Thailand). He is former Executive Director of Engineering Institute of Thailand, Former Vice President of the Thai Consulting Engineers Association of Thailand, and former Director of International Water Resources Association. Dr. Subin has led a very active public life. He has served as Minister of the Royal Thai Government in the capacity as Minister of Foreign Affairs (August 28-December 14, 1990), Minister of Commerce (August 10, 1988-August 27, 1990), Minister of University Affairs (August 12, 1986-August 9, 1988), and Deputy Minister of Finance (January 15-August 11, 1986). He was a Member of Parliament from Chiangmai, Thailand. He has also been Member of the House Standing Committee for Sciences, Technology and Energy (1983-85) and Vice Chairman of House Standing Committee for Sciences, Technology and Energy (1983-85). He has also served as advisor to the Minister of Agriculture and Cooperatives (1984-85) and Advisor to the Minister of Industry (1980-83). Apart from serving as a professional engineer and as a politician, Dr. Subin is an accomplished academician as well. He is former Associate Professor at AIT; former member of the Board of Trustees of AIT, Chiangmai University and Kasetsart University. He has been Chairman of the Board of Trustees of NTU, Thailand, and a special lecturer in Regional Development at Chiangmai University. Dr. Subin is also honorary advisor to MDX group of companies for industrial estate development, as well as honorary advisor to GMS Power Public Company Limited. He was the recipient of the 1991 personal service award in "National and International Prestige" by the Colorado State University and a recipient of the 2003 Outstanding Alumni Award in "Social Achievement" by the AIT Alumni Association of Thailand. Dr. Subin has been awarded the Knight Grand Cordon (Special Class) of the Most Exalted Order of the White Elephant in 1989; Knight Grand Cross (First Class) of the Most Exalted Order of the White Elephant in 1987; Knight Grand Cross (First Class) of the Most Noble Order of the Crown of Thailand in 1986; Commander (Third Class) of the Most Exalted Order of the White Elephant in 1985 and Commander (Third Class) of the Most Noble Order of the Crown of Thailand in 1983.



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Keynote Address 2

“Experiences in Design and Implementing Megawatt Scale PV-ESS-DG for Isolated Microgrid System”



DR. WUTHIPONG SUPONTHANA

*Managing Director, LEONICS Co., Ltd.
Bangkok, Thailand*

Rural Electrification without utility transmission line is become more feasible when PV and Energy storage price is going down. Beside using diesel generator at central power plant to generate electricity we can now integrated PV and Li-Ion Energy storage and use Diesel Generator for only back up power source.

There are two type of Isolated microgrid power plants sharing in this presentation. Conventional central PV-ESS-DG microgrid power plant and PV-ESS-DG distributed power microgrid system installed at houses which is not need to be big central power plant but can be smaller size PCS insatllted with capability to unlimited parallel as virtual generators and can be linked together to share load and energy generation. This system will reduce installation time and eliminates using of high skill technician for operation and maintenance since large area power distribution network can be built from small scale equipment.

Dr. Wuthipong Suponthana, managing director of LEONICS Co., Ltd., is a member of management boards of NECTEC and a director of Thai Photovoltaic Association. He is also a committee in TISI for Thailand PV system standard known as TTC1016. He has been recognized as a delegate expert from Thailand in IEC TC82, technical committee for solar photovoltaic energy system. He has involved actively in activities of IEC standards preparation for PV system as member of WG3 (System), WG6 (BOS components) and JWG1 writing team. He has reviewed many PV components and system standards before they are published and become IEC standards. He has more than 15 years experiences in designing and implementing of both grid connect microgrid and stand-alone microgrid systems in South East Asia. He implements large scale Microgrid with total power of each site more than 5 MW ASEAN and South Pacific countries. He also has experience in design and implement Smart Microgrid with supply side management and demand side management with Ethereum based energy trading platform for private microgrid in Thailand.



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Keynote Address 3

“Enabling Blockchain Energy Trading among Smart Buildings through the Use of Multi-Agent Systems and Internet of Things Devices”



DR. WARODOM KHAMPHANCHAI

*Researcher, Provincial Electricity Authority
Bangkok, Thailand*

Due to the proliferation and continuously improvement of solar PV, energy storage, electric vehicles, Internet of things (IoT) devices, these open up new opportunities and change the ways how end-use customers (smart homes and smart buildings) engage in the electricity market. Rather than passively consume energy by purchasing electricity with a fixed tariff from an electric utility, in the near future they can become prosumers who are able to generate revenue on their excess energy and able to obtain transparently-source, reliable energy. This talk discusses the development of a Multi-Agent System Platform, so called PEA HiVE, with Blockchain Energy Trading application. Python is selected to be the development language for the IoT integration and backend, whereas Hyperledger and React Native are chosen to be the Blockchain development platform and our mobile frontend respectively.

Here is the main topics that will be discussed in this talk 1. Internet of Things devices in smart home and smart building and its protocols 2. Python libraries to interact with Zigbee, Z-Wave, Modbus, BACnet, Sigfox, and WiFi devices 3. Development of Multi-Agent Systems as the IoT Gateway backend 4. Hyperledger Blockchain framework and development of its REST API 5. An Example of Blockchain Energy Trading in a real-world environment (i.e. smart buildings in Sisaengtham renewable energy school in Ubon Ratchathani).

Dr. Khamphanchai is currently a researcher at Provincial Electricity Authority where his job focuses on developing the PEA HiVE Platform to manage IoT, solar inverter, and electric vehicle chargers in homes and buildings as well as Blockchain energy trading within community environment. Dr. Khamphanchai was also the software development engineer at Samsung SmartThings in Palo Alto, California. He is also the active member of the IEEE Internet of Things Society, the IEEE Computer Society, Bangkok AI etc.



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Field Trip in Nanning (Optional)

Wednesday 29 November 2018

13.00 hour: *Pick up GMSARN Group at Ramada Encore Hotel Nanning*

14.00 hour: *Arrive Yiling Cave or Gan Palace*

18.00 hour: *Dinner at Ganjiajie Lemon Duck Restaurant*

20.30 hour: *Go back to the Hotel*



Remark: *The programs maybe change without prior notice.*