IEEJ P&ES – IEEE PES Thailand

Joint Symposium 2024

– Advanced Technology in Power Systems –

March 18, 2024

The 3rd Floor, Pullman Bangkok Hotel G Silom

Co-organized by

ELECTRICAL ENGINEERING
SINCE 1929
CHULALONGKORN UNIVERSITY

Center of Excellence in
Electrical Power Technology

For on-site participants

Venue map
https://l.uni.net.th/imgkhdp5nx
Pullman Bangkok Hotel G Silom

For online participants

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Meeting ID: 923 1336 3795
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---------- Technical Program ----------

07:45-08:00 **Registration**

08:00-08:20 **Opening address**

- Dr. Mikimasa Iwata, Vice President - Power and Energy Society of IEEJ
- Dr. Nopbhorn Leeprechanon, Vice Chair – Meeting & Conference of IEEE PES TH

Session I

08:20-08:40 SBP0007B3F0
A Study on Optimizing the Number of Energy-Saving Technologies and Renewable Energy Sources in Net Zero Energy Town
Yamazaki Shogo, Yasutake Naoaki and Kawasaki Shoji (Meiji University)

08:40-09:00 SBP0007B4F0
Analysis of Wholesale Power Price Behavior under Large-scale Integration of Renewable Energy with an Optimal Power Generation Mix Model
Komiyama Ryoichi (The University of Tokyo)

09:00-09:20 PES-24-001
Stability Assessment of Thailand's Microgrid Utility toward High Renewable Integration
Nottakorn Sukmanont, Grissanapong Sungkaew and Thongchart Kerdphol (Kasetsart University)

09:20-09:40 PES-24-002
Optimal Active Power Source Location and Sizing for Microgrid Using Deep Reinforcement Learning Techniques
Nonthawat Khortsriwong, Anurak Deanseekeaw, Boonruang Marungsri (Suranaree University of Technology), Promphak Boonraksa (Rakamangla University of Technology Suvarnabhumi), Terapong Boonraksa (Rakamangla University of Technology Rattanakosin)

09:40-10:00 PES-24-003
A Short-Term Wind Energy Forecasting Model Using Artificial Neural Network and Adaptive Neuro-Fuzzy Inference System
Promphak Boonraksa (Rakamangla University of Technology Suvarnabhumi), Terapong Boonraksa (Rakamangla University of Technology Rattanakosin), Anurak Deanseekeaw, Nonthawat Khortsriwong, Boonruang Marungsri (Suranaree University of Technology)

10:00-10:20 **Break**

Session II

10:20-10:40 PES-24-004
Optimal Battery Energy Storage Sizing for Grid-connected Microgrid integrating with PV power generation considering Energy Cost Reduction and Minimum PAR using Deep Reinforcement Learning Techniques

Anurak Deanseekeaw, Nonthawat Khortsriwong, Boonruang Marungsri (Suranaree University of Technology), Promphak Boonraksa (Rakamangla University of Technology Suvarnabhumi), Terapong Boonraksa (Rakamangla University of Technology Rattanakosin)

10:40-11:00 **An Adaptive Resistance Perturbation-based Maximum Power Point Tracking**
PES-24-005 **Algorithm for Organic Solar Photovoltaic Systems**
Maheswaran Gunasekaran, Surachai Chaitusaney (Chulalongkorn University), Kenichi Kawabe (Tokyo Institute of Technology), Vijayakumar Krisnasamy (SMR Institute of Science and Technology), Sivakumar Selvam (Prince Sultan University)

11:00-11:20 **Optimal appliance scheduling in grid-connected smart buildings integrating with**
PES-24-006 **PV power generation system by considering the peak-to-average Ratio**
Terapong Boonraksa, Punnatorn Meechaka, Nopparut Seali (Rakamangla University of Technology Rattanakosin), Promphak Boonraksa (Rakamangla University of Technology Suvarnabhumi), Anurak Deanseekeaw, Nonthawat Khortsriwong, Boonruang Marungsri (Suranaree University of Technology)

11:20-11:40 **Optimisation of size and energy management of PV-based grid-connected green**
PES-24-007 **hydrogen production systems**
Abba Lawan Bukar, Surachai Chaitusaney (Chulalongkorn University), Babanggida Modu (University of Maiduguri), Chee Wei Tan (Universiti Teknologi), Mukhtar Fatihu Hamza (Prince Sattam Bin)

11:40-12:00 **Thap Sakae Solar Photovoltaic Power Plant Capacity Monitoring using Random**
PES-24-008 **Forest Machine Learning Algorithm**
Emmanuel Ede Ogar and Surachai Chaitusaney (Chulalongkorn University)

12:00-13:00 **Lunch**

Session III

13:00-13:20 **Influence of off-grid utilizing electric vehicles on Power Supply Loss of distribution**
SBP0007AF46 **system**
Ichihara Yudai, Nakamura Yuta, Aoki Mutsumi (Nagoya Institute of Technology), Muto Takaaki, Sakaeda Shingo (CHUBU Electric Power) and Hikoyama Kazuhisa (CHUBU Electric Power Grid)

13:20-13:40 **Physical model approach for estimating energy consumption of electric vehicle**
PES-24-009 *Sakawrat Sricharoen and Komsan Hongesombut (Kasetsart University)*

13:40-14:00 **C-HIL and MIL Simulations of Grid Forming Inverter for Validating Power System**
SBP0007B133 **Stabilizing Effect**
Kishi Shuya, Nakajima Tatsuhito (Tokyo City University),
Mitsugi Yasuaki, Sugimori Satoshi, and Hashiguchi Hiroshi (Toshiba Mitsubishi-Electric Industrial Systems Corporation))

14:00-14:20 **A Study on Relationship Between System Impedance and Reactive Power Output**
SBP0007B435 **of Interconnected Inverters of PV System in Case Voltage Flicker Occurrence**
Hoshi Maiki and Kawasaki Shoji (Meiji University)

14:20-14:40 **Zero Voltage Switching Performance Characteristics of H-Bridge High Power Bi-**
SBP0007B4E2 **Directional Isolated Dual Active Bridge DC-DC Converter**
Kinyua Jamlick and Aoki Mutsumi (Nagoya Institute of Technology)

14:40-15:00 **Break**

Session IV

15:00-15:20 **A Study of Different Number of Secondary Phases in a Transformer with Special**
SBP0007B4E2 **Winding Structure**
Tanaka Aoi, Goto Takuya, Nishitani Tsuyoshi, Yukita Kazuto, Nanahara Toshiya and Goto Yasuyuki (Aichi Institute of Technology)

15:20-15:40 **Customer Classification and Load Profiling Based on Dimensionality Reduction and**
PES-24-010 **Clustering**
Aleksi Hämäläinen and Komsan Hongesombut (Kasetsart University)

15:40-16:00 **Dynamic Analysis of Thailand's Power System toward Third Access Party (TPA)**
PES-24-011 **based on Available Transfer Capacity**
Dhamrongsak Khakkharho, Thanakorn Sutheerawut and Thongchart Kerdphol (Kasetsart University)

16:00-16:20 **Study on the Effect of AC Interference from Transmission Lines on Railway**
PES-24-012 *Wikanda Nantanawut, Cattareya Choopum and Boonchai Techaumnat (Chulalongkorn University)*