大会议程 Conference Agenda

2024 年 3 月 8 日 / March 8th, 2024	
ZOOM ID：882 0523 7406　　Password: 240308（进入会议室，请将昵称改为“名字+单位”格式） Link: https://zoom.us/j/88205237406?pwd=YUlKc2xEMFVmRGVoWXlHVDRzMkRmZz09	
时间/ Time	**活动/ Activity**
13:30-14:00	签到&海报展示/ Sign in & Poster Display（参会签到方式：ZOOM 聊天室发送“名字+单位”）
主讲报告 Keynote Speeches	
14:00-14:30	**杨强教授，浙江大学** Prof. Qiang Yang, Zhejiang University, China Report Title: Artificial Intelligence driven smart energy systems: Technical challenges and Case studies
14:30-14:35	大合照 / Group Photo
14:35-15:05	**袁小芳教授，湖南大学** Prof. Xiaofang Yuan, Hunan University, China Report Title: Collaborative Operation Optimization of Processing Equipment and AGVs for Green Discrete Manufacturing
15:05-15:35	**Assoc. Prof. Noor Izzri Abdul Wahab, Universiti Putra Malaysia** Report Title: Optimal Peer-to-peer Energy Trading of Networked Microgrids with Economic Analysis using Artificial Intelligence Techniques
口头报告 Oral Reports	
15:35-15:45	**邓盼园，西安工业大学** Panyuan Deng, Xi’an Technological University, China Title: The solution and verification of face gear measurement model 面齿轮测量模型的求解与验证
15:45-15:55	**王利兵，西安工业大学** Libing Wang, Xi’an Technological University, China Title: A new modeling method and principle verification of offset helical tooth surface gears processed by gear turning method 车齿法加工偏置螺旋齿面齿轮新建模方法及原理性验证
15:55-16:05	**胡国旭，西安工业大学** Guoxu Hu, Xi’an Technological University, China Title: Multi-DOF Pneumatic Soft Exoskeletal Hand Rehabilitation Actuator 多自由度气动软体手部康复驱动器
16:05-16:15	**赵文森，西安工业大学** Wensen Zhao, Xi’an Technological University, China Title: Real-time Thickness Detection of Acetate Fiber Bundles Based on Digital Image Processing

	基于数字图像处理的醋酸纤维丝束在线厚度检测
16:15-16:25	**孙成豪，山东大学** Chenghao Sun, Shandong University, China Title: Sequence impedance modeling of grid-following LC-type voltage source converter 跟网 LC 型逆变器序阻抗建模
16:25-16:35	**苏冲，上海海事大学** Chong Su, Shanghai Maritime University, China Title: Research on modeling and simulation of three-phase rectifier and integrated sliding mode control method 三相整流器建模仿真及其积分滑模控制方法研究
16:35-16:45	**纪崇书，上海海事大学** Chongshu Ji, Shanghai Maritime University, China Title: Research on Marine Electric Propulsion Sliding Mode Control Based on a New Approach Rate 基于新型趋近率滑模算法的船舶推进电机转速控制研究
16:45-16:55	**李红，广西大学** Hong Li, Guangxi University, China Title: Online software design for short-term load forecasting based on design patterns 基于设计模式的在线短期负荷预测软件设计
16:55-17:05	**闭幕式 Closing Ceremony**

大会报告摘要：

杨强教授，浙江大学

Prof. Qiang Yang, Zhejiang University, China

Report Title: Artificial Intelligence driven smart energy systems: Technical challenges and Case studies

Abstract: The current power systems are undergoing a rapid transition towards their more active, flexible, and intelligent counterpart smart grid, which brings about tremendous challenges in many domains, e.g., integration of various distributed renewable energy sources, cyberspace security, demand-side management, and decision-making of system planning and operation. The fulfillment of advanced functionalities in the smart grid firmly relies on the underlying information and communication infrastructure, and the efficient handling of a massive amount of data generated from various sources, e.g., smart meters, phasor measurement units, and various forms of sensors. This talk will briefly cover the AI empowered sustainable energy systems from the aspects of technical challenges and case studies. It demonstrates the increasing interest and rapid expansion in the use of machine learning techniques to successfully address the technical challenges of the smart grid from various aspects. It is also revealed that some issues still remain open and worth further research efforts, such as the high-performance data processing and analysis for intelligent decision-making in large-scale complex multi-energy systems, lightweight machine learning-based solutions, and so forth. Moreover, the future perspectives of utilizing advanced computing and communication technologies, e.g., edge computing, ubiquitous internet of things and 5G wireless networks, in the smart grid are also highlighted. To the best of our knowledge, this is the first review of machine learning-driven solutions covering almost all the smart grid application domains. Machine learning will be one of the major drivers of future smart electric power systems, and this study can provide

a preliminary foundation for further exploration and development of related knowledge and insights.

袁小芳教授，湖南大学

Prof. Xiaofang Yuan, Hunan University, China

Report Title: Collaborative Operation Optimization of Processing Equipment and AGVs for Green Discrete Manufacturing

Abstract: With the energy crisis and environmental problems becoming serious, green manufacturing has attracted growing attention from academic and industrial communities. The discrete manufacturing process often involves a variety of production resources including processing equipment, transportation equipment, etc., and is characterized by strong coupling, nonlinearity, and multi-objectives. Collaborative optimization of production resources is one of the most critical means to globally improve production indicators. Based on the analysis of the needs and opportunities of collaborative optimization in the context of green discrete manufacturing, this report takes the research on the optimization of the collaborative operation of processing equipment and AGV as an example to introduce the relevant optimization model construction and solution methods.

Assoc. Prof. Noor Izzri Abdul Wahab

Universiti Putra Malaysia

Report Title: Optimal Peer-to-peer Energy Trading of Networked Microgrids with Economic Analysis using Artificial Intelligence Techniques

Abstract: Peer-to-peer energy trading has become one of the most promising ways to coordinate networked microgrids (NMGs) for sustainable energy-based economic societies. This study aims to find optimal sizes of the networked microgrids system according to peer-to-peer P2P and peer to grid P2G energy trading markets based on multi-objective artificial intelligent optimizing methods. Three different microgrids operating together to meet different residential loads are considered, each microgrid consists of solar panels (PV), wind turbines (WT), and batteries. The annual cost of energy (ACOE) and the loss of power supply probability (LPSP) are considered as a criterion to formulate a multi-objective function. Grey Wolf optimizer (GWR) and genetic algorithm (GA) techniques are used to obtain the optimal size of networked microgrids components. In the end, the optimum energy exchange is analyzed and compared for two energy trading schemes, including peer-to-grid and peer-to-peer.

附：线上会议 ZOOM 操作方法

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