

Dr. Pudong Ge

Electrical and Electronic Engineering Building, Imperial College London, UK

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EDUCATION

Imperial College London

PhD in Electrical Engineering, with Dr. Fei Teng

London, UK

Sep. 2019 – Oct. 2023

Nanyang Technological University

Global Fellowship by Turing Grants with Prof. Ron Hui, FIEEE, FREng

Singapore

June 2023 – Aug. 2023

Southeast University

MEng in Electrical Engineering

Nanjing, China

Sep. 2016 – June 2019

Nanjing University of Science & Technology

BEng in Electrical Engineering & Automation

Nanjing, China

Sep. 2012 – June 2016

WORKING EXPERIENCE

University of Oxford

Academic Visitor

Oxford, UK

Jan. 2025 –

Imperial College London

Research Associate/Assistant

London, UK

Aug. 2023 –

Imperial College London

Research Assistant

London, UK

Nov. 2020 – June 2021

- **Project:** Energy for Development - Low Carbon Energy and Industry for Economic Growth in Mongolia, GCRF
- **Subtopic:** Energy infrastructure in Mongolia: local, national and international perspective

Teaching Assistant

Sep. 2020 – Present

- **Modules:** Electrical Energy Systems; Debating and Non-technical / Soft Skills Development (Energy Future Lab)
- **Responsibility:** General administration; Panopto (Lecture recording); Marking; Tutorial support

RESEARCH INTEREST

- **Cyber-physical power system resilience**
- **Power-electronic dominated grid digitalisation**
- **Multi-network dynamics and resilience**

ACADEMIC AWARDS

1. **Future Research Direction Award**, 2024 ABCP Annual Conference
2. **Future Digileader**, Digital Futures (jointly established by KTH Royal Institute of Technology, Stockholm University and RISE Research Institutes of Sweden)
3. **Sole Winner** of Ph.D. Dissertation Challenge, IEEE I&CPS Asia 2023
4. Chinese Government Award for Outstanding Self-financed Students Abroad, 2022
5. **Imperial Global Fellowship** by Turing Grant Scheme
6. **Wiley Top Downloaded Paper**, 2019-2020

PUBLICATIONS

Journal Papers

1. **P. Ge**, B. Chen, et al., “Cyber-Resilient Distributed Self-Triggered Control of Networked Microgrids Against Multi-Layer DoS Attacks”, *IEEE Trans. on Smart Grid*, vol. 14, no. 4, pp. 3114-3124, July 2023.
2. **P. Ge**, P. Li, et al., “Fixed-Time Convergent Distributed Observer Design of Linear Systems: A Kernel-Based Approach”, *IEEE Trans. on Automatic Control*, vol. 68, no. 8, pp. 4932-4939, Aug. 2023.
3. **P. Ge**, F. Teng, et al., “A Resilience-Oriented Centralised-to-Decentralised Framework for Networked Microgrids Management”, *Applied Energy*, 2022, 308: 118234.
4. **P. Ge**, B. Chen, et al., “Event-triggered Distributed MPC for resilient voltage control of an islanded microgrid”, *International Journal of Robust and Nonlinear Control*, vol. 31, no. 6, pp. 1979-2000, Apr. 2021.
5. **P. Ge**, Y. Zhu, et al., “Resilient Secondary Voltage Control of Islanded Microgrids: An ESKBF-Based Distributed Fast Terminal Sliding Mode Control Approach”, *IEEE Trans. on Power Systems*, vol. 36, no. 2, pp. 1059-1070, March 2021.
6. **P. Ge**, X. Dou, et al., “Extended-State-Observer-Based Distributed Robust Secondary Voltage and Frequency Control for an Autonomous Microgrid”, *IEEE Trans. on Sustainable Energy*, vol. 11, no. 1, pp. 195-205, Jan. 2020.
7. **P. Ge**, Q. Hu, et al., “Increasing operational flexibility of integrated energy systems by introducing power to hydrogen”, *IET Renewable Power Generation*, vol. 14, no. 3, pp. 372-380, Nov. 2019.
8. C. Caputo, M.-A. Cardin, **P. Ge**, et al., “Design and planning of flexible mobile Micro-Grids using Deep Reinforcement Learning”, *Applied Energy*, vol. 335, p. 120707, 2023.
9. M. Liu, Z. Zhang, **P. Ge**, et al., “Enhancing Cyber-Resiliency of DER-based SmartGrid: A Survey”, *IEEE Trans. on Smart Grid*, Early Access, 2024.
10. X. Dou, **P. Ge**, et al., “Reactive Power and Voltage Robust Control for Active Distribution Network Considering Uncertain Delay (in Chinese)”, *Proceedings of the CSEE*, vol. 39, no. 5, pp. 1290-1300, 2019.
11. J. Ma, X. Dou, K. Chen, Y. Jiao, and **P. Ge**, “Design of network information observer based on Kalman filtering algorithm (in Chinese)”, *Electric Power Automation Equipment*, vol. 39, no. 10, pp. 215-223, 2019.
12. X. Dou, L. Chang, C. Ni, X. Duan, **P. Ge**, and Z. Wu, “Multi-level Dispatching and Control of Active Distribution Network for Virtual Cluster of Distributed Photovoltaic (in Chinese)”, *Automation of Electric Power Systems*, vol. 42, no. 3, pp. 21-31, 2018.

White Papers & Book Chapters

1. F. Teng, S. Chhachhi, **P. Ge**, et al., “Balancing privacy and access to smart meter data: an Energy Futures Lab briefing paper”, *Energy Futures Lab, Imperial College London*, 2022.
2. S. Rath, C. Konstantinou, B. Papari, C. Edrington, **P. Ge**, et al., “Microgrids in mission-critical applications”, *IET Digital Library, Cyber Security for Microgrids*, Chap. 3, pp. 39-58, 2022.

Conference Papers

1. **P. Ge**, C. Caputo, F. Teng, et al., “A Wireless-Assisted Hierarchical Framework to Accommodate Mobile Energy Resources”, *IEEE SmartGridComm 2022*, Singapore, Oct. 2022.
2. **P. Ge**, C. Konstantinou, and F. Teng, “Cyber-Physical Disaster Response of Power Supply Using a Centralised-to-Distributed Framework”, *IEEE SmartGridComm 2021*, Aachen, Germany, Oct. 2021.
3. L. Castiglione, Z. Hau, **P. Ge**, et al., “HA-Grid: Security Aware Hazard Analysis for Smart Grids”, *IEEE SmartGridComm 2022*, Singapore, Oct. 2022.
4. T. Wang, X. Zhu, **P. Ge**, et al., “Expanding flexibility with P2H for integrated energy systems”, *8th Renewable Power Generation Conference (RPG 2019)*, Shanghai, China, 2019.

PROJECT EXPERIENCE

1. “Global Center: Electric Power Innovation for a Carbon-free Society (EPICS)”, EPSRC, 2023-2028, **Participant**
2. “Technology Transformation to Support Flexible and Resilient Local Energy Systems”, EPSRC (EP/T021780/1), 2020-2023, **Leader**
3. “ICT-enabled Platform for Development and Verification of Distributed Resilient Control of Cyber-Physical Power Systems”, Royal Society, 2021-2022, **Leader**

4. “Energy for Development - Low Carbon Energy and Industry for Economic Growth in Mongolia”, Research England GCRF, 2020-2021, **Co-Leader**
5. “Socio-Techno-Economic Pathways for sustainable Urban energy Development (STEP-UP)”, ESRC (ES/T000112/1), 2019-2022, **Participant**

INVITED TALKS

1. “Cyber-physical energy system towards zero-carbon transition”, IEEE PES ISGT EUROPE 2024 (October 14th-17th, 2024, Croatia), **Panel Session Chair**
2. “Cyber-Physical Resilience Enhancement Design for Digitalised Power Systems”, 2024 UK-China Workshop and Young Elite Scientists Sponsorship Programme on Electrical Technology and Energy Equipment
3. “Resilience-Oriented Control Design for Cyber-Physical Power Systems”, China Electrotechnical Society Young Professional Webinar (5th)
4. “Mobility4Resilience”, 2024 ABCP Annual Conference (5 July 2024, Leicester, UK).
5. “Resilience-Oriented Networked MGs Management”, Nanyang Technological University, Singapore
6. “Resilience-Oriented Control Framework of Digitized Power Systems from a Cyber-Physical Perspective”, IEEE I&CPS Asia 2023, Chongqing, China
7. “A Resilience-Oriented Centralised-to-Decentralised Framework Design for Networked Microgrids Control and Management”, Southeast University, Nanjing, China

ACADEMIC ACTIVITIES

Member: IEEE Task Force on Cyber-Physical Interdependence for Power System Operation and Control

Professional Affiliations: Member, IEEE & IEEE Power and Energy Society (PES)

Reviewer of International Journals: IEEE Trans. on Sustainable Energy, IEEE Trans. on Power Systems, IEEE Trans. on Industry Applications, IEEE Trans. on Cloud Computing, Applied Energy, International Journal of Electrical Power and Energy Systems, CSEE Journal of Power and Energy Systems, Control Engineering Practice, Journal of Cleaner Production, IET Renewable Power Generation

Co-Supervision: Mr Michael Nestor, Mr Le Fang(PhD); Mr Mohamed Jamal(Msc); Mr George Zhang(Undergraduate)

REFERENCE LIST

1. Prof. Vladimir Terzija from Newcastle University (PhD thesis examiner), FIEEE, Humboldt Fellow, Email: vladimir.terzija@ncl.ac.uk
2. Dr. Fei Teng from Imperial College London (PhD supervisor), Email: f.teng@imperial.ac.uk
3. Prof. Ron Hui from The University of Hong Kong (exchange supervisor and collaborator), FIEEE, FREng, Fellowship of the Australian Academy of Technological Sciences & Engineering, Fellow of the US National Academy of Inventors, Email: ronhui@eee.hku.hk
4. Prof. Tim Green from Imperial College London (collaborator), FIEEE, FREng, Email: t.green@imperial.ac.uk
5. Dr. Boli Chen from University College London (collaborator), Email: boli.chen@ucl.ac.uk