

WEI GAN

Affiliation: School of Engineering, Cardiff University

Address: Queen's Buildings, 5 The Parade, Newport Road, Cardiff, CF24 3AA, UK

Email: ganw4@cardiff.ac.uk



EDUCATION BACKGROUND

PhD in Electrical Engineering, Huazhong University of Science and Technology, China 09.2016 – 06.2021

Supervisor: Prof. Jianbo Guo and Prof. Wei Yao

- Thesis: Coordinated planning of integrated energy system considering integrating new energy vehicles
- Focus: Electric vehicles integration; coupled power-transportation systems; multi-energy systems optimization

BEng in Electrical Engineering, Huazhong University of Science and Technology, China 09.2012 – 06.2016

Supervisor: Prof. Wei Yao

- Thesis: Energy storage planning for renewable energy integration
- Focus: Energy storage integration; power system optimization

RESEARCH EXPERIENCE

Research Associate at Cardiff University, UK 10.2021 – Present

Supervisor: Prof. Jianzhong Wu and Dr Yue Zhou

Conducted multi-disciplinary research with a focus on the whole-system network impact analysis of peer-to-peer energy trading

PhD student at Huazhong University of Science and Technology, China 09.2016 – 06.2021

Supervisor: Prof. Jianbo Guo and Prof. Wei Yao

Conducted power system optimization research with a focus on the robust operation and planning of power system with the integration of energy storage and renewable energy

Visiting Researcher at Illinois Institute of Technology, USA 07.2019 – 12.2020

Supervisor: Prof. Mohammad Shahidehpour

Conducted multi-disciplinary research with a focus on the coordinated optimization of coupled transportation and power system with the proliferation of electric vehicles

Visiting Researcher at China Electric Power Research Institute, China 01.2018 – 06.2019

Supervisor: Prof. Jianbo Guo and Prof. Xiangjun Li

Conducted application-oriented research with a focus on the application demonstration of distributed energy storage in active distribution network

SELECTED PUBLICATIONS

1. **Gan W**, Ai X, Fang J, Yan M, Yao W, Zuo W, and Wen J. Security constrained co-planning of transmission expansion and energy storage. *Applied Energy* 2019;239:383-394.
2. **Gan W**, Yan M, Yao W, and Wen J. Peer to peer transactive energy for multiple energy hub with the penetration of high-level renewable energy. *Applied Energy* 2021;295:117027.
3. **Gan W**, Yan M, Yao W, Guo J, Ai X, Fang J, and Wen J. Decentralized computation method for robust operation of multi-area joint regional-district integrated energy systems with uncertain wind power. *Applied Energy* 2021;298:117280.
4. **Gan W**, Shahidehpour M, Yan M, Guo J, Yao W, Passo A, Zhang L, and Wen J. Coordinated planning of transportation and electric power networks with the proliferation of electric vehicles. *IEEE Transactions on Smart Grid* 2020;11(5):4005-4016.
5. **Gan W**, Shahidehpour M, Guo J, Yao W., Passo A, Zhang L, and Wen J. Two-stage planning of network-constrained hybrid energy supply stations for electric and natural gas vehicles. *IEEE Transactions on*

Smart Grid 2021;12(3):2013-2026.

6. **Gan W**, Shahidehpour M, Guo J, Yao W, Passo A, Zhang L, and Wen J. A tri-level planning approach to resilient expansion and hardening of coupled power distribution and transportation systems. *IEEE Transactions on Power Systems* 2022;37(2):1495-1507.
7. **Gan W**, Yan M, Yao W, Guo J, Fang J, Ai X, and Wen J. Multi-network coordinated hydrogen supply infrastructure planning for the integration of hydrogen vehicles and renewable energy. *IEEE Transactions on Industry Applications* 2022;58(2):2875-2886.
8. **Gan W**, Yan M, Wen J, Yao W, Zhang J. A low-carbon planning method for joint regional-district multi-energy systems: From the perspective of privacy protection. *Applied Energy* 2022;311:118595.

EDITORIAL ACTIVITIES

- Young Editor of Applied Energy (IF 11.446)
- Young Editor of Protection and Control of Modern Power Systems (IF 10.5)
- Guest Editor of Applied Energy
- Guest Editor of Frontiers in Energy Research
- Guest Editor of Frontiers in Computer Science

VOLUNTEER ACTIVITIES

- Interim Communication Team Leader, CIGRE UK NGN
- Committee Member of IEEE PES YP (Young Professionals)
- 2023 IEEE PES Day UK Ambassador
- Committee Member for 2023 UK-China Workshop and Young Elite Scientists Sponsorship Programme on Electrical Technology and Energy Equipment
- Committee Member for the 2024 Conference of School of Engineering at Cardiff University

PEER REVIEW SERVICE

- Applied Energy
- IEEE Transactions on Sustainable Energy
- IEEE Transactions on Smart Grid
- IEEE Transactions on Power System

HONORS AND AWARDS

- ESI Highly Cited Paper, 2023
- Best Poster Award, Supergen Energy Networks Conference, 2023
- Best Paper Award, Power System Technology, 2021
- Best Reviewer Award, IEEE Transactions on Sustainable Energy, 2020

INVITED PRESENTATIONS

- Co-organized and gave a talk for the third issue of "CEPRI-IEEE PES Power Energy Youth Forum" on "discussion of multi-vector energy technology development under net-zero target"
- Chair and speaker for the sub-forum at the 2023 international conference on resource sustainability (icRS) on "statistical impact quantification of peer-to-peer energy trading"

ACADEMIC SUPERVISION

- Co-supervise 2 PhD student and 4 MSc students at Cardiff University, UK, with three dissertations completed.
- Co-supervise 1 PhD student at Illinois Institute of Technology, USA, with 1 journal paper published.
- Co-supervise 1 MSc student at China Electric Power Research Institute, China, with 1 journal paper published.