

Jiajie Luo

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Voluntary Work Experience

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|---|--|-------------------|
| Secretary | CIGRE UK Technical Committee | 10/2022 - present |
| <ul style="list-style-type: none">• Produce technical documentation• Organise Technical Committee events and meetings• Manage Technical Committee Knowledge Management System (KMS) | | |
| Secretary | CIGRE B4/C4.93 Joint Working Group Grid Forming | 07/2022 - present |
| <ul style="list-style-type: none">• Coordinate over 60 JWG experts worldwide from industry and academy• Contribute to JWG technical brochure | | |
| Secretary and Treasurer | CIGRE UK Next Generation Network | 10/2021 - present |
| <ul style="list-style-type: none">• Manage NGN budget and forecast• Coordinate between NGN teams and steering committee• Plan events including webinars and site visits | | |

Professional Work Experience

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| Software and Control Engineer | Siemens Gamesa, UK | 03/2019 - present |
| <ul style="list-style-type: none">• Design software and control features for wind turbine converter, ensuring satisfactory generator and grid connection performance.• Diagnose and conduct root cause analysis on wind farm site issues.• Maintain and update the Functional Description document for converter control. | | |
| Product Engineer | 3D Engine Ltd, Birmingham | 04/2016 – 12/2018 |
| <ul style="list-style-type: none">• Develop and test the control and communication systems of 3D scanner prototypes.• Product documents writing and GUI development.• Communicate with the hardware sector in the Oxford branch. | | |
| Research Assistant | University of Birmingham | 07/2018 – 03/2019 |
| <ul style="list-style-type: none">• State Grid GEIRI Europe Project: Control Strategy of Multiple Applications of Virtual Synchronous Machines.• R&D on Virtual Inertia Control and analyse its impact on existing grid stability.• Review peer papers from IET and IEEE. | | |
| Teaching Assistant | University of Birmingham | 9/2015 - 03/2019 |
| <ul style="list-style-type: none">• Supervise BEng and MSc projects on various converter control, HVDC and power electronics topics.• Assist in tutorials, labs, presentation evaluation and assignment/thesis marking. | | |

Education

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|---|---------------------------------|-------------------|
| PhD in Electrical and Electronic Engineering | University of Birmingham | 09/2015 – 06/2019 |
| <ul style="list-style-type: none">• Develop novel control methods for power electronic converters and wind generators, including modulation of semiconductor devices. | | |

- Model and simulate (MATLAB/Simulink, PSCAD, RTDS) power systems with converters and wind generations and study steady state and transient performance.
- Analyse costs and evaluate technologies in offshore wind farm projects and develop strategies for offshore wind power generation and grid connection.
- Optimise power system stability when Virtual Synchronous Machine controlled converters and energy storage are connected.
- Scholarship from School of Engineering, University of Birmingham.

BEng in Electrical and Electronic Engineering University of Birmingham 09/2013 – 06/2015

- First Class degree. Ranked top 5 in the department.
- Final year project: Optimised Energy Management of Smart Grid with Electric Vehicles and Wind Energy Generations.
- Key modules: Power Electronics Applications; Object-orientation Program Designing; Electrical Power Transmission and Distribution; Electric Drive and Control Systems; Data Mining; Digital Systems and Embedded Computing.

BEng in Electrical and Electronic Engineering Wuhan, China 09/2011 – 08/2013
Huazhong University of Science and Technology

- Member of Mechanical Innovation Base: Robotic components design, drawing and software modelling (CAD, Solidworks).
- Academic Excellence Scholarship.

Publications

- J. Luo, K. Lin, J. Li, Y. Xue and X. P. Zhang, **Cost Analysis and Comparison between Modular Multilevel Converter and Modular Multilevel Matrix Converter for Offshore Wind Power Transmission**, 15th IET Int. Conf. on AC DC Power Transmission, 2019.
- J. Luo, X. P. Zhang, Y. Xue, K. Gu and F. Wu, **Small Signal Model of Modular Multilevel Matrix Converter for Fractional Frequency Transmission System**, IEEE Access, 2019.
- J. Luo, X. P. Zhang and Y. Xue, **Harmonics Analysis of Modular Multilevel Matrix Converter for Fractional Frequency Transmission System**, IEEE Trans. on Power Delivery, 2020.
- K. Gu, F. Wu, X. P. Zhang, P. Ju, H. Zhou, J. Luo, and J. Li, **SSR Analysis of DFIG-Based Wind Farm With VSM Control Strategy**, IEEE Access, 2019.

Skills

- **Event organising skills**
 CIGRE NGN UK-France joint webinar 2022
 Help organise: 2018 UK-China Future Energy Systems Development Forum.
 2018 IEC TC115 Joint Working Group Meeting.
- **Leadership skills**
 Team lead of Public Relations Department, Student Union of Huazhong University of Science and Technology: Raise sponsorship and manage budget for department events;
 Report and liaise with Public Relations Chair on budget usage.