NAN CHEN

PhD Candidate, MSc, Student Member IEEE & CIGRE NGN, AFAHE

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PERSONAL STATEMENT

I am an accomplished, committed and capable researcher in electronic, electrical and systems engineering with a good command of skills including systematic literature review, research data management and analysis, and RTDS-based EMT simulation demonstrations. I serve as Chair of the University of Birmingham IEEE Student Branch where I have organised academic events with internal and external speakers. I have more than five years of working experience in industry as an engineer, and three years of project collaboration experience during my PhD. Ultimately, I am a self-motivated and productive researcher and engineer, and a dedicated and receptive team leader, able to multi-task and keep to deadlines.

EDUCATION

2022 **PhD in Electronic, Electrical and Systems Engineering**

- **University of Birmingham**, Birmingham, UK, **01/2019-12/2022(expected)**
- **Thesis title**: Commutation failure prediction and inverters' interaction mechanism in Multi-Infeed LCC-HVDC systems under asymmetrical faults (thesis submitted)
- Supervisors: Prof. Ying Xue; Prof. Xiao-Ping Zhang

2018 **MSc in Electrical Power Systems with Distinction**

- **University of Birmingham**, Birmingham, UK, **09/2017-09/2018**
- **Dissertation title**: The simulation of DC side fault and the thermal evaluation of the Modular Multilevel Converter based HVDC systems
- Supervisor: Prof. Ying Xue

2012 **Bachelor's Degree in Electrical Engineering and Automation**

- **Huazhong University of Science and Technology (HUST)**, Wuhan, China, **09/2008-06/2012**
- **Dissertation title**: The study of online testing methods of transformer losses
- Supervisor: Dr Chunyan Zang

WORKING EXPERIENCE

01/2019 - Present **Postgraduate Teaching Assistant**, *University of Birmingham, UK*

- Assisted academics with demonstrated-based lab sessions for courses in field of electrical power system
- Undertook tutorial sessions, marked assignments, provided feedback, and prepared course materials (e.g., questions and solutions in lecture slides) for HVDC & FACTS (postgraduate course)

08/2012 - 08/2017 **Engineer**, *Shanghai Electric Machinery Co., Ltd., China*

- Developed new series and next generation of motor products, and guided manufacturing;
- Provided technical quotations for more than **250** projects including international ones, completed the motor designing work for more than **150** projects based on IEC and national standards, and accomplished more than **£150,000** of cost saving for motor products;
- Provided motor operation and maintenance guidance and assisted project negotiation process.

ACADEMIC ADMISTRATION

04/2022 - Present: Chair, IEEE student branch and **Power and IEEE Energy Society (PES) student chapter** at the University of Birmingham

- Collaborated closely with IEEE PES UK&I Chapter in student activities;
- Applied for funding for organizing events, e.g., organized presentation competition & paper contest;
- Developed team work and leadership, and hosted monthly meetings;
- Created and updated official social media accounts;
- Invited distinguished lecturers and industry experts to give technical talks, etc.

11/2020 - 04/2022: Vice-Chair, IEEE student branch and **Power and IEEE Energy Society (PES) student chapter** at the University of Birmingham

- Contacted internal and external professionals and invited them to our student branch activities;
- Leaded and cooperated with team members to organize at least four technical events per year;
- Promoted and reported events on social media and IEEE websites, etc.

RESEARCH EXPERIENCE

09/2021 - 07/2022: Key Researcher Participated in a collaborative project between the ***University of Birmingham***, UK and ***C-EPRI Electric Power Engineering Co. Ltd***, China

- Researched the commutation failure prediction and prevention approaches in LCC-HVDC systems;
- Developed economic analysis from the Life-Cycle Cost perspective.

05/2021 - 05/2022: Research Assistant Employed by the ***University of Birmingham***, UK

- Assisted research work in the department of Electronic, Electrical and Systems Engineering;
- Accomplished literature review, developed innovative methods to fill in research gaps, and validated the results through simulations based on the RTDS platform.

01/2019 - 03/2020: Research Assistant Participated in the project named 'A Proof of Concept - Flexible LCC HVDC Technology' led by ***Engineering & Physical Science Research Council (EPSRC)***, UK

- Designed and constructed the inverter-side of the LCC-HVDC prototype hardware experiment circuit.

RESEARCH TRAINING

01/2019 - Present Software Training

- **Matlab & RTDS online training** held by the *Mathwork Inc.* and *RTDS Technologies Inc*. twice per year for each: Followed the latest development of the new versions of software; Kept familiar with new models/toolkits to further develop my skills of coding, modelling and analysis;
- **R & Python Programming Training** held by the *University of Birmingham* once per year for each: Built a fundamental knowledge of the two programming tools; Have been continuously self-learning and practicing these tools.

01/2019 - 12/2020 Research Skill Training

- **A series of research skill training courses** held by *Research Skills Team in Library Services of University of Birmingham*: Developed my research skills of systematic literature searching, research data management, statistical data analysis, etc.

GRANTS AWARDED

- **Associate Fellow of Advance Higher Education (AFAHE)**, granted by, Advance HE UK, 06/2022
- **Horizon Award for Postgraduate Teachers**, granted by the Higher Education Futures Institute (HEFi), University of Birmingham, 06/2022
- **School Scholarship (£60,840 in total)**, granted by School of Engineering, University of Birmingham, 2019-2021
- **Intermediate Engineer Qualification Certificate**, issued by Shanghai Engineering Series Electrical Equipment Professional Qualification Evaluation Committee, China, 10/2017
- **Occupational Qualification Certificate: Medium Skill Level for the CNC milling**, issued by Shanghai Human Resources and Social Security Bureau, China, 11/2016
- **Occupational Qualification Certificate: Senior Skill Level for the motor winding embedding**, issued by China Machinery Industry Federation (CMIF), 04/2013

PUBLICATIONS

Papers:

- N. Chen, K. Zha, H. Qu, F. Li, Y. Xue, X. -P. Zhang, "**Economic Analysis of Flexible LCC-HVDC Systems with Controllable Capacitors**," CSEE Journal of Power and Energy Systems (Early Access). doi: 10.17775/CSEEJPES.2022.01620, https://ieeexplore.ieee.org/document/9862595
- N. Chen, Y. Yang, L. Li, C. Cui, Y. Xue, X. -P. Zhang, "**Commutation Failure Prediction for Multi-Infeed LCC-HVDC Systems Under Asymmetrical Faults**," IEEE Transactions on Power Delivery (under review, Jul. 2022)

Patents:

- N. Chen, et al., **"Commutation failure prediction for LCC-HVDC systems,"** EPO Patent, submitted May, 2022
- Z. Geng, R. Zhu, N. Chen, "**A cooling device for the electric motor bearing**," CNIPA Patent CN208386310U, Jan. 15, 2019
- D. Yuan, C. He, C. Xin, N. Chen, "**The structure of a retaining ring of the ultra-high-speed induction motor**," CNIPA Patent CN106505770B, Oct. 10, 2018
- Z. Geng, N. Chen, R. Zhu, "**The path of the internal cooling air of the electric motor with the cooling type of IC511**," CNIPA Patent CN204168019U, Feb. 18, 2015

SKILLS

- Proficient in **Microsoft Office Word, Excel, PowerPoint, Visio, RSCAD (RTDS platform), MATLAB, SIMULINK**;
- Skilled in **AutoCAD, SolidWorks, hardware experiment implementations;**
- Fundamental knowledge of **PSCAD, R programming language, Python programing language**.

REFEREES

- **Professor Ying Xue** - Email: dr.yingxue@foxmail.com (was with the University of Birmingham, 2016-2022)

  Address: School of Electric Power Engineering, South China University of Technology, Guangzhou, China; 510006.
- **Professor Xiao-Ping Zhang** - Email: x.p.zhang@bham.ac.uk
- **Dr Daniel Donaldson** - Email: d.l.donaldson@bham.ac.uk

  Address: Department of Electronic, Electrical and System Engineering (EESE), new Engineering Building (Y8), University of Birmingham; Edgbaston; Birmingham, UK; B15 2TT.