

Junjie Yin

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Education

Southeast University (SEU)

Nanjing

MS in Electrical Engineering, GPA: 3.79/4.0

Sep. 2020 - Jun. 2023

- Thesis entitled “Research on Transient Stability of Grid-connected Converter”
- Research interests: Smart Grid; Stability of power system; Grid-connected converters; Integrated energy system; Lyapunov optimization

North China Electrical Power University (NCEPU)

Beijing

BS in Electrical Engineering, GPA: 3.73/4.0 (Top 1%)

Sep. 2016 - Jun. 2020

- Thesis entitled “Research on Multi-energy Flow Interactive Coupling Characteristics and Optimal Scheduling of Integrated Energy System”

Technical Skills

Programming

Matlab, C, Python

Professional Softwares

Simulink, PLECS, Mathcad, PSCAD, RT-Box, Multisim, CVX, IBM Cplex, Yalmip

Drawing & Typesetting

Photoshop, Illustrator, SketchUp, Office, L^AT_EX, Beamer

Languages

English, Mandarin (Native)

Representative Publications

Journal Papers:

- [1] **J. Yin**, J. Wang, J. You, et al. “Integrated Energy System Optimal Operation in Coal District with Hydrogen Heavy Trucks,” *Frontiers in Energy Research*, vol. 9, pp. 748673, 2021. (SCI, IF: 4.008) [Link](#)
- [2] **J. Yin**, Y. Chen, G. Sang, et al. “QoE-Oriented Rate Control and Resource Allocation for Cognitive M2M Communication in Spectrum-Sharing OFDM Networks,” *IEEE Access*, vol. 7, pp. 43318-43330, 2019. (SCI, IF: 3.367, Cited by 13 papers) [Link](#)
- [3] W. Xu, W. Zhang, Y. Hu, **J. Yin** and J. Wang, “Multi Energy Flow Optimal Scheduling Model of Compressed Air Energy Storage Based on Matrix Modeling of Energy Hub,” *Transactions of China Electrotechnical Society*, 2022. (In Chinese, Accepted on Aug. 2022)
- [4] J. Wang, **J. Yin**, X. Jin. “Improved Reactive Loop-Based Sequence Impedance Model and Stability Analysis of VSG Inverters with Coupling Frequency,” *IEEE Transactions on Power Electronics*, 2022. (Submitted)

Conference Papers:

- [1] W. Zhang, W. Xu, Y. Hu, **J. Yin**. “Multi Energy Flow Optimal Scheduling Model of Compressed Air Energy Storage Based on Matrix Modeling of Energy Hub,” *Proceedings of 2022 The 4th International Conference on Power and Energy Technology (ICPET 2022)*, pp. 789-794, Xining, China, Jul. 2022.
- [2] S. Jiang, Y. Wang, D. Wang, **J. Yin***, H. Yan, J. Wang. “Reliability Assessment of Distribution Network Considering Differentiated End-Users Demand for Reliability,” *Proceedings of 2020 International Conference on Smart Grid and Energy Engineering (SGEE 2020)*, pp. 12026-12032, Guilin, China, Nov. 2020.

Patents:

- [1] **J. Yin**, J. Wang, N. Wang, et al. “A User-Oriented Calculation Method of Distribution Network Reliability Evaluation Index.” China Patent No. 2022108630263. 23 Jul. 2022.
- [2] J. Wang, **J. Yin**, H. Yan. “Method for Weight Formulating of the Evaluation Index of Distribution Network Reliability.” China Patent No. 2022100109403. 06 Jan. 2022.
- [3] J. Wang, **J. Yin**, X. Li. “A Modeling Method of Converter Sequence Impedance in Rectifier-Inverter Mode.” China Patent No. 2021112230502. 20 Oct. 2021.
- [4] J. Wang, **J. Yin**, X. Li. “An Improved Control Method for Power Decoupling Based on Adaptive Virtual Impedance.” China Patent No. 2021112230517. 20 Oct. 2021.

Research Projects

Research on Active and Rapid Support Technology of Transient Frequency and Voltage for

Beijing

Photovoltaic/Wind Farm Stations

Topic Investigator

Dec. 2021 - Nov. 2025

- Funded by National Key Research and Development Program of China (No. 2021YFB2400500)
- Studied the difference and integration between Grid-Forming (GFM) and Grid-Following (GFL) converters
- Conducted qualitative and quantitative analysis of transient stability, by Equal area criterion (EAC) and Lyapunov function
- Proposed Virtual Synchronous Generator (VSG)-based converters stabilization control methods
- Verified by Hardware-in-the-Loop (HIL) experiment, utilizing the RT-Box and PLECS

Research on Distribution Network Planning and Power Supply Restoration Technology Facing the Reliability Needs of End Users

Tianjin

Topic Investigator

Jan. 2020 - Dec. 2021

- Funded by State Grid Corporation Headquarters Technology Project (No. 5400-202012118A-0-0-00)
- Proposed innovatively the distributed network reliability evaluation index based on the value engineering theory
- Established a comprehensive reliability evaluation index system considering the number of users and power supply capacity
- Calculated the reliability evaluation index weight based on Analytic hierarchy process (AHP)-Entropy weight method (EWM)

Research on Friendly Grid-Supporting and Online Evaluation Technology of New Energy for Bilateral Service Between Plant and Grid

Yangzhou

Project Investigator

Jun. 2021 - Dec. 2022

- Funded by Jiangsu Power Grid Corporation Scientific Research Project (No. J2021012)
- Studied Kmeans-based PV generation units clustering and characteristics extraction technology
- Constructed the fault self-diagnosis evaluation system of PV, aiming to accurately locate the fault panel
- Proposed the VSG-based inertia evaluation and control method for PV system to realize the friendly interaction

Research on Interaction and Coupling Characteristics of Multi-energy Flow in Integrated Energy System

Changzhou

Project Investigator

Sep. 2019 - Dec. 2020

- Funded by Jiangsu Power Grid Corporation Scientific Research Project (No. J2019082)
- Studied the various characteristics of multi-energy flows on different spatio-temporal scales
- Established a matrix modeling of energy hub to portray the conversion relationships between multi-energy flows
- Proposed power-to-gas (P2G) optimized scheduling model of IES based on second-order cone programming (SOCP)
- Verified the feasibility, economy, low carbon, and effectiveness of the proposed mechanism by MATLAB/CPLEX

Awards and Honors

Oct. 2020-2021	Scholarship: "Graduate Scholarship of SEU" (3 Times), "Graduate Scholarship of NR Electric Co., Ltd"	Nanjing
Nov. 2020	Contest: Second Prize of China in "National Post-Graduate Mathematical Contest in Modeling"	Shanghai
Jun. 2020	Honorary Title: "Excellent Graduate of Beijing"	Beijing
Nov. 2019	Contest: First Prize of Beijing in "Contemporary Undergraduate Mathematical Contest in Modeling"	Beijing
Oct. 2017-2019	Scholarship: "Undergraduate Scholarship" (3 Times), "Scholarship of Beijing Banner Electric Co., Ltd"	Beijing
Sep. 2017-2019	Honorary Title: "Outstanding Student Leaders" (2 Times), "Distinction Student"	Beijing

Volunteer Services

IEEE ACCESS, IEEE Transactions on Industry Applications

ScholarOne Website

Peer Reviewer

Oct. 2020 - Present

- Reviewed 15 manuscripts submitted to IEEE ACCESS
- Reviewed 2 manuscripts submitted to IEEE Transactions on Industry Applications

International Academic Conferences

Several Cities

Presentation / Attendance

Oct. 2019 - Present

- IEEE 5th International Electrical and Energy Conference (CIEEC 2022), Nanjing, May. 2022
- The 5th IEEE Conference on Energy Internet and Energy System Integration (EI² 2021), Taiyuan, Oct. 2021
- International Conference on Smart Grid and Energy Engineering (SGEE 2020), Guilin, Nov. 2020
- 2019 Annual Meeting of Chinese Society for Electrical Engineering (CSEE Annual 2019), Beijing, Nov. 2019

Frontiers Journals, Higher Education Press

Beijing

Publicist

May. 2022 - Aug. 2022

- Promoted the public acknowledgment of "Frontiers Journals", an English academic journal series launched by Higher Education Press (HEP), through posters, online forums, and meetings with scholars

Yangzhou Electric Power Co., Ltd, State Grid

Yangzhou

Intern

Jul. 2021 - Jan. 2022

- Investigated the power overcapacity problems of typical users (e.g., Tea factory) and designed suitable methods
- Experienced the workflow of dispatch centers, transformer substations and other departments on the spot

North China Electric Power University

Beijing

Student Leader

Feb. 2016 - Jun. 2020

- Received and dispatched messages/materials, and allocated tasks detailedly in School of Electrical and Electronic Engineering
- Held responsible for elections, proposals, candidate reviews, and the annual Congress, serving as a member of Student Committee