

# Florida State University – Postdoctoral Researcher Position in Power Electronics and Related Fields

FAMU-FSU College of Engineering, Florida, USA

Fall 2026–Fall 2028

Manager: Xinze Li

Xinze Li's research group is recruiting a postdoctoral researcher in power electronics, power semiconductor technologies, AI for engineering systems, or related fields. The postdoctoral researcher will work on cutting-edge research at the intersection of power electronics, intelligent systems, and advanced energy technologies, with opportunities to collaborate with students, faculty, industry partners, and research centers.

## ■ Qualifications

Applicants should have, or expect to receive soon, a Ph.D. degree in power electronics, electrical engineering, control, semiconductor devices, applied AI, or closely related fields.

Strong candidates may have experience in one or more of the following areas:

- Power electronics modeling, simulation, control, and hardware implementation
- Design, testing, and debugging of power converters, gate drivers, PCB, and experimental platforms
- Experience with low-voltage and/or high-voltage power electronics systems
- Familiarity with digital control platforms, DSPs, FPGAs, microcontrollers, or real-time control systems
- Experience with tools such as MATLAB/Simulink, PLECS, Ansys, COMSOL, LTspice, Altium, etc.
- Hands-on skills in laboratory testing, data acquisition, instrumentation, and experimental validation
- Research experience in AI for power electronics, control, digital twins, reliability, power semiconductor devices is a plus

## ■ Job Scope

The postdoctoral researcher will play an important role in developing and leading research projects in the group. Responsibilities may include:

- Leading research projects in power electronics, AI-assisted power converter modeling and design, control, digital twins, reliability, or related areas
- Designing experiments, building prototypes, and validating research ideas through hardware and software platforms
- Publishing high-quality journal and conference papers
- Mentoring and teaching graduate and undergraduate students
- Assisting with proposal preparation, project reports, and technical presentations
- Supporting lab development, equipment setup, and research infrastructure building
- Communicating with academic, industry, and government collaborators

## ■ Salary and Benefits

Salary will be discussed based on the candidate's background, experience, and project fit.

The position includes university fringe benefits, which may include:

- Pension or retirement benefits
- Medical insurance
- Professional development and training opportunities through the college and university
- Opportunities to attend conferences, workshops, and research meetings

## ■ What You Can Expect from This Position

This postdoctoral position is designed to support your long-term career development, whether your next step is academia, industry, or a national laboratory.

If you plan to pursue an academic career, this job will strengthen your profile for future faculty roles:

- Build a strong research portfolio
- Publish high-impact papers
- Develop independent research directions
- Gain mentoring and student supervision experience
- Contribute to proposal writing and funding development
- Build collaborations with faculty, research centers, industry partners, and national laboratories

If you plan to pursue an industry career, this position will help you:

- Gain hands-on project management experience
- Work on real engineering problems with practical constraints
- Strengthen hardware, software, testing, and system-integration skills
- Develop experience in prototype development, experimental validation, and technical communication
- Connect with industry partners and professionals in the United States

The goal is not only to complete projects, but to help you become a stronger researcher, engineer, mentor, and leader.

## ■ CAPS Center Research Environment

You will have the opportunity to work with the Center for Advanced Power Systems (CAPS) at FAMU-FSU College of Engineering, a unique research environment for advanced power systems, power electronics, real-time simulation, cyber-physical systems, superconductivity, insulation, and thermal systems. CAPS facilities include:

- State-of-the-art low-voltage and high-voltage power electronics laboratories for converter modeling, control, simulation, and prototyping;
- A 5 MW Prototype Test Facility that integrates real hardware with one of the world's largest university RTDS installations, enabling powerful Power-Hardware-in-the-Loop testing;
- Digital Real Time Simulation capabilities for realistic, low-risk testing of power and energy systems;
- Cyber-physical systems testbeds for distributed control, agent-based control, communication-aware power systems, and HIL experiments;
- High-temperature superconductivity and cryogenic dielectric laboratories;
- A High Electric Field Laboratory supporting insulation diagnostics, condition monitoring, high-voltage testing, and extreme-environment validation;
- Thermal systems laboratories for thermal measurement, evaluation, and testing of power systems.

## ■ Life in Tallahassee

Tallahassee offers a welcoming, affordable, and student-friendly living environment with the energy of a university town and the comfort of Florida life. The city has warm weather, short winters, abundant sunshine, and easy access to outdoor activities. Beautiful Gulf Coast destinations such as Bald Point State Park, Alligator Point, and St. George Island are within convenient driving distance, making beach trips, hiking, fishing, and weekend relaxation easy parts of life in North Florida.

Tallahassee is also well connected to major regional cities. Jacksonville, Orlando, Atlanta, Tampa, and New Orleans are all reachable for conferences, industry visits, and weekend trips.

## ■ How to Apply

Interested candidates are encouraged to send the following materials to: [xinzeli831@gmail.com](mailto:xinzeli831@gmail.com)

Please include:

- Cover letter
- Curriculum Vitae
- Representative publications
- Project experiences

Applications will be reviewed on a rolling basis until the position is filled.

## ■ About Xinze Li



My website



Xinze Li received the Ph.D. degree in electrical and electronic engineering from Nanyang Technological University, Singapore, in 2023. He joined the University of Arkansas, USA, as a postdoctoral research fellow in 2024 and a lecturer in 2025. He will join the Florida State University, FL, USA, as an Assistant Professor starting August 2026. He has interdisciplinary backgrounds of AI and power electronics: He worked as a research engineer for Rolls-Royce Singapore, and he gained AI industry experience in computer vision with Singtel (the largest telecom company in Singapore) and AI research experience in natural language processing.

His research interests center on next-generation AI for next-generation power electronics technologies, including AI for power electronics simulation and modeling, maintenance and reliability, and process automation, as well as digital twins and process optimization for power semiconductor fabrication. His work is driven by three core AI themes: physical AI, explainable AI, and agentic AI.

Xinze was the sole recipient of the 2023 NTU Collaborative Research Award.

He won the Second Prize Paper Award from the IEEE Industry Applications Society and the Outstanding Presentation Award at the IEEE Applied Power Electronics Conference and Exposition 2023. He has 5 invited talks, including 2 education seminars at IEEE APEC 2025 and IEEE ECCE 2025.

**Xinze is a marathon runner whose personal best for the half marathon is 1 hour and 59 minutes.**

**He keeps pushing his limits**, improving from 2 hours and 45 minutes in 2023, to 2 hours and 30 minutes in 2024, and finally breaking the 2-hour mark in 2025. He also enjoys a wide range of outdoor activities, including hiking, kayaking, and swimming.