

07 May 2025

To whom it may concern,

It is with great enthusiasm that I submit this letter along with my application for a postdoctoral position in your esteemed research group. My name is Wentao Zhang, and I am currently pursuing a Ph.D. in Electrical Engineering at Southeast University, Nanjing, China, under the supervision of Prof. Zhongze Wu. My doctoral studies are expected to conclude in September 2025.

My Ph.D. research focuses on the multi-physics design, analysis, and control of high-performance electric machine systems for electric vehicles (EVs), which can be divided into three parts:

1. **Design methods for high-performance electric machines in EVs**, including novel n-layer flat wire winding designs, DC winding voltage analysis and suppression techniques, and mechanism-driven multi-objective optimization methods.
2. **Advanced cooling system design and analysis**, such as developing high-resolution lumped-parameter thermal models and fluid-solid coupled oil cooling systems for EV machines.
3. **Control and dynamic modeling of electric machine systems**, incorporating spatial harmonic models, advanced control strategies, and converter characteristics into machine performance evaluations.

During my Ph.D. study, I contributed to 21 research publications, including 14 papers in well-regarded IEEE Transactions journals, with three additional works currently under review. My research has also resulted in several patents related to methodologies for electric machine design, optimization, and cooling systems. I am grateful to have received recognition for my work through awards such as the *1st Prize Academic Scholarship* (2023), *CIEEC Best Paper Award* (2023), and the *IEEE IAS CMD Thesis Contest* (2023).

I have attached my CV for your review and would welcome the opportunity to discuss my application further. Thank you for considering my application, and I look forward to the possibility of contributing to your lab's impactful research.

Sincerely,

Wentao Zhang

E-mail: zhangwentaoheu@outlook.com

Tel: (+86) 158-5060-7771