Information on Postgraduate Research Scholarship
Ref: FS-ES-04-2027-10

Faculty:	Engineering & Science	**School:**	Engineering
Lead Supervisor:	Dr Mahdi Salimi		
Project Title:	Next-Generation AI-Assisted Capacitive Wireless Charging Platform for Dynamic and Universal Electric Mobility		
Project Description:	**Project Overview:** The rapid transition toward decentralized clean energy requires next-generation power electronics capable of seamlessly integrating renewable generation, battery energy storage, and electric vehicle (EV) charging infrastructures into the low-voltage grid. Conventional grid-tied inverters often struggle with dynamic power quality management, grid instability, and complex dynamic load demands under varying environmental conditions. This PhD project focuses on developing, implementing, and experimentally validating advanced closed-loop control and energy management strategies for multifunctional grid-connected power converters. The successful candidate will investigate innovative dynamic modelling, advanced non-linear control algorithms (such as sliding-mode, predictive, and adaptive control), and real-time digital signal processing (DSP) implementation to optimize power quality, harmonic compensation, and bidirectional energy flows. The researcher will benefit from state-of-the-art laboratory facilities at the University of Greenwich, utilizing real-time Hardware-in-the-Loop (HIL) emulation, advanced power semiconductor testbeds (IGBT/SiC/GaN), and DSP/FPGA development tools. **Key Research Objectives:** • Develop state-space dynamic models for grid-connected multifunctional converter topologies integrating PV, energy storage, and EV charging architectures. • Design and evaluate robust, high-performance closed-loop control algorithms for active/reactive power regulation, DC-link stabilization, and harmonic mitigation. • Implement embedded control software in real-time on industrial C2000 DSP platforms. • Perform experimental bring-up and validation on physical converter prototypes using HIL testing and laboratory bench setups. **Candidate Profile:** • **Academic Background:** First or Upper Second Class (2:1) Master's/MEng degree in Electrical Engineering, Power Electronics, Control Systems, or a closely related field. • **Technical Skills:** Strong background in power electronics topologies, closed-loop control theory, dynamic system modeling in MATLAB/Simulink or PLECS, and familiarity with DSP programming or embedded C. • **Desirable:** Hands-on experience with hardware prototyping, power converter bench testing, or Hardware-in-the-Loop (HIL) platforms.		

	If you had a different specific project topic in mind (e.g., Wireless EV Charging or Aerospace Converters), let me know and I can adapt the description accordingly.
Duration:	3 years, full-time study 6 years, part-time study

Support available (subject to satisfactory performance):

For Home students

- A full tuition fee waiver at the Home student rate for the duration of the scholarship.

For International students

- 50% tuition fee waiver against the International student rate for the duration of the scholarship.

Important information

- Tuition fees are subject to annual review and may increase during the course of study.
- This scholarship covers tuition fees only and does not include funding for living, accommodation, or maintenance costs.

Person Specification of Essential (E) or Desirable (D) requirements:

Criteria:	**E or D**
Education and Training:	
• 1st Class or 2nd class, First Division (Upper Second Class) honours degree or a taught master's degree with a minimum average of 60% in all areas of assessment (UK or UK equivalent) in a relevant area to the proposed research project	**E**
• For those whose first language is not English and/or if from a country where English is not the majority spoken language (as recognised by the UKBA), a language proficiency score of at least IELTS 6.5 (in all elements of the test) or an equivalent UK VISA and Immigration secure English Language Test is required, if your programme falls within the faculty of Engineering and Science a language proficiency score of at least IELTS 6.5 overall with a minimum of 6.0 in all elements of the test or an equivalent UK VISA and Immigration secure English Language Test is required. Unless the degree above was taught in English **and** obtained in a majority English speaking country, e.g. UK, USA, Australia, New Zealand, etc, as recognised by the UKBA.	**E**
Experience & Skills:	
• Previous experience of undertaking research (e.g. undergraduate or taught master's dissertation)	**E**
Personal Attributes:	
• Understands the fundamental differences between a taught degree and a research degree in terms of approach and personal discipline/motivation	**E**
• Able to, under guidance, complete independent work successfully	**E**
Other Requirements:	
• This scholarship may require Academic Technology Approval Scheme approval for the successful candidate if from outside of the EU/EEA	**E**
• The scholarship must commence before 5th April 2027	**E**

Closing date for applications:	**Midnight UTC on 30th November 2026**

For further information contact:	Mahdi Salimi via M.Salimi@greenwich.ac.uk

Making an application:

Please read this information before making an application. Information on the application process is available at: https://www.gre.ac.uk/research/study/apply/application-process. Applications need to be made online via this link. **No other form of application will be considered**.

All applications **must include** the following information. **Applications not containing these documents will not be considered.**

- **Scholarship Reference Number (FS-ES-04-2027-10)** – included in the personal statement section together with your personal statement as to why you are applying
- **a CV including 2 referees** *
- **academic qualification certificates/transcripts and IELTs/English Language certificate if you are an international applicant, if English is not your first language or you are from a country where English is not the majority spoken language as defined by the UK Border Agency** *

**upload to the qualification section of the application form. Attachments must be a PDF format.*

Before submitting your application, you are encouraged to liaise with the Lead Supervisor on the details above.