

Research Associate*

Department	Electronic and Electrical Engineering (www.strath.ac.uk/eee/)		
Faculty	Faculty of Engineering (www.strath.ac.uk/engineering/)		
Staff Category	Research	Reference No	I63352
Reports To	HoD through Dr Derrick Holliday	Grade:	7
Salary Range:	£32236	Contract Type:	Fixed Term (16 July 2021)
FTE	1	Closing Date	15/01/2019

Job Advert

The University of Strathclyde seeks to recruit a Research Associate in Power Electronics to join the Power Electronics, Drives & Energy Conversion (PEDEC) research group within the Department of Electronic and Electrical Engineering and the Institute for Energy and Environment. This follows the award of EPSRC funding for a research project entitled 'Quieting Ultra-Low-Loss SiC & GaN Waveforms', to investigate wide-bandgap power semiconductor applications. This is a jointly conducted project with the Universities of Bristol and Edinburgh, and Imperial College, London.

You will be responsible for conducting novel research into the control of state-of-the-art silicon carbide (SiC) and gallium nitride (GaN) power semiconductor devices for maximising efficiency, minimising EMI and ensuring reliability. This will entail developing hardware operating at up to 800-1000V, and at power levels of up to several kilowatts. The successful applicant will also be expected to liaise with the partner institutions, to prepare written reports and presentations, and to present and publish research outcomes at high-profile international conferences and in IEEE journals.

To be considered for this position you will be educated to PhD level in Power Electronic Convertors, or you will have significant, relevant experience in addition to a relevant Degree. You should have significant experience of successfully designing and implementing power electronics hardware operating at significant power levels. Specific skills in two or more of the following areas are required: gate driver design; PWM techniques; digital control techniques for power converters; microcontrollers/DSP and FPGA, development of maximum efficiency point tracking algorithms. The successful candidate will work in collaboration with the partner institutions and therefore should have the ability to communicate and exchange ideas effectively.

Candidates must be an excellent team player, and should be able to demonstrate excellent verbal and written communication skills, a record of independently managing his or her own workload, and the potential for developing an outstanding publication record. The successful candidate must prepare written reports and presentations, and to present and publish research outcomes at high-profile international conferences and in IEEE journals.

* Whilst a Research Associate is ideally sought for this position; applications from candidates who are close to PhD completion or whose award is pending, are also welcome. In such circumstances, appointment will be made at RS06 level (Research Assistant) and duties will be adjusted accordingly to reflect the grade of the post. This will continue until the PhD award is confirmed, at which point the duties and grade will be revised accordingly.

Job Description

Brief Outline of Job:

To join the Power Electronics, Drives & Energy Conversion (PEDEC) research group within the Department of Electronic and Electrical Engineering and the Institute for Energy and Environment to investigate wide-bandgap power semiconductor applications.

Main Activities/Responsibilities:

1.	Conduct individual and/or collaborative research, including determining appropriate research methods and contributing to the development of new research methods. in the field of power electronic converters
2.	Power electronic circuit design and implementation
3.	Control system design and implementation, e.g. using DSP, microcontrollers,
4.	Mathematical modelling and software simulation of circuits and control systems
5.	Preparation of technical reports
6.	Write up research work for publication, individually or in collaboration with colleagues, and disseminate results as appropriate to the discipline by, for example, peer reviewed journal publications and presentation at conferences.
7.	Liaising with, and taking a lead in organising meetings with, project partners
8.	Supervise student projects, provide advice to students and contribute to teaching as required by, for example, running tutorials and supervising practical work.

Person Specification

Educational and/or Professional Qualifications

(E=Essential, i.e. a candidate must meet all essential criteria to be considered for selection, D=Desirable)

E1 PhD (or equivalent professional experience) in the field of power electronic converters.

E2 Honours degree in Electrical and Electronic Engineering.

D1 Membership of relevant Chartered/professional bodies (including Higher Education Academy).

Experience

E3 Significant experience of successfully designing and implementing power electronics hardware operating at significant power levels.

E4 Specific skills in two or more of the following areas: gate driver design; PWM techniques; digital control techniques for power convertors; microcontrollers/DSP and FPGA, development of maximum efficiency point tracking algorithms.

D2 Relevant work experience in the field of Power Electronics.

D3 Experience of supervising postgraduate research and undergraduate students, and undertaking teaching activities.

D4 Experience of knowledge exchange related activities.

Job Related Skills and Achievements

E5 Developing ability to conduct individual research work, to disseminate results and to prepare research proposals.

Personal Attributes

E6 Excellent interpersonal and communication skills, and to present complex information in an accessible way to a range of audiences.

E7 The ability to work both as a team member and autonomously, and to plan and organise own workload within objectives to ensure that all activities are completed to deadlines.

Application Procedure

Applicants are required to complete an application form including the name of three referees who will be contacted before interview without further permission, unless you indicate that you would prefer otherwise. Applicants should also submit a Curriculum Vitae and a covering letter detailing the knowledge, skills and experience you think make you the right candidate for the job. Applicants should also complete the Equal Opportunities Monitoring Form.

Other Information

Further information on the application process and working at Strathclyde can be found on our website (<http://www.strath.ac.uk/hr/workforus>).

Informal enquiries about the post can be directed to Dr Derrick Holliday, derrick.holliday@strath.ac.uk / Dr Neville McNeil, Neville.mcneil@strath.ac.uk.

Rewards and Benefits

Our staff have access to a wide range of outstanding benefits that include financial rewards, family friendly and wellbeing benefits and career development opportunities, details of which can be found [here](#).

Conditions of Employment

Conditions of employment relating to the Research staff category can be found at: [Conditions of Employment](#).

Probation

Where applicable, the successful applicant will be required to serve a 9 month probationary period.

Pension

The successful applicant will be eligible to join the Universities' Superannuation Scheme. Further information regarding this scheme is available from [Payroll and Pensions](#).

Equality and Diversity

We value diversity and welcome applications from all sections of the community.

The University currently holds a Bronze Athena SWAN award, recognising our commitment to advancing women's careers in science, technology, engineering, maths and medicine (STEMM) employment in academia.

University Values

The University's Values capture what we're all about: who we are, what we believe in and what we stand for. [Our Values](#) have been derived from how we act and how we expect to be treated as part of Strathclyde.

