

Research & Development Engineer (Power Electronics)

Department	Power Networks Demonstration Centre (PNDC) (http://www.strath.ac.uk/research/powernetworksdemonstrationcentre/), Department of Electrical and Electronic Engineering (http://www.strath.ac.uk/engineering/electronicalelectricalengineering/)		
Faculty	Faculty of Engineering (www.strath.ac.uk/engineering/)		
Staff Category	Knowledge Exchange	Reference No	353651
Reports To	PNDC Programme Delivery Manager	Grade:	7
Salary Range:	£32817 - £40322	Contract Type:	Fixed Term (24 months)
FTE	1	Closing Date	07/03/2021

Job Advert

The PNDC is a world-class facility with dedicated staff that will accelerate the adoption of new, 'smart' technologies within advanced power grids, supporting the increased accommodation of renewable energy, electric vehicles and demand side management. The £12.5 million Centre - the first of its kind in Europe – was founded by the University of Strathclyde and leading energy companies including Scottish Power Energy Networks and Scottish and Southern Energy Power Distribution, with support from Scottish Enterprise and the Scottish Funding Council. The Centre has expanded its membership since its founding and this growth is set to continue.

The PNDC are looking to appoint a Research and Development Engineer to research, develop, test and demonstrate technologies for electrification of transport and energy storage in the utility and transportation sectors. Opportunities for innovation are extensive, through the strong working relationship and routes to market afforded by the PNDC's industry members and commercial engagements. This will be supplemented with collaborative opportunities with other research and industry teams in the UK and abroad.

The successful candidate will work as part of a growing team on a wide range of technical projects, with a particular emphasis on experimental validation and testing. You will develop project proposals for consideration by industrial partners and clients and will be expected to lead on and contribute to high value industrial funding proposals, in addition to working with the PNDC's industrial partners, with a strong focus on knowledge exchange, providing regular updates and reports. You will support the PNDC's external profile and technical leadership by engaging in relevant professional and knowledge exchange activities. Working as part of a dynamic team, you will input to PNDC administrative and operational activities.

To achieve the above, the R&D Engineer will have sufficient research and/or industrial experience in at least two of the following technical areas:

- Control systems for power electronics converters
- Utilization of new semiconductor technology for power converters and power supplies
- Industrial application of power electronics
- System integration of power electronics converter for industrial application
- Electrical machines configuration, integration, and performance evaluation
- Design of power electronics converters for industrial applications
- Development of detailed technical specifications for new design concept

To be considered for the role, you will have a good honours degree and PhD / higher degree (or equivalent professional experience) in appropriate discipline. You will have the ability to conduct individual knowledge exchange projects, work directly and independently with clients, and to prepare new knowledge exchange proposals.

Whilst not essential for the role, applications are welcomed from candidates with: membership/working towards membership of a relevant Chartered/professional body (including the Higher Education Academy), experience of relevant student supervision and teaching activities.

Job Description

Brief Outline of Job:

To undertake a specific knowledge exchange project/s under the general guidance of a knowledge exchange / research leader; to establish a personal knowledge exchange portfolio and plan knowledge exchange proposals, with assistance from senior colleagues as required; to engage where required in relevant research and teaching; and input to administrative activities.

Main Activities/Responsibilities:

1.	Research, develop, test & demonstrate power electronics applications at low voltage and high voltage in the energy sector, as for example solid state transformers and soft normal open point using the PNDC's facility in a safe and efficient manner.
2.	Contribute to PNDC's innovation program in collaboration with industrial stakeholders, academics and R&D colleagues to deliver the centre's growth ambitions.
3.	Apply technical knowledge to industry issues to investigate and quantify problems experienced by PNDC members, developing project proposals & specifications in response to these.
4.	Maintain key relationships with industry partners and stakeholders and appropriate engagement with PNDC industrial members to ensure relevance and accuracy of deliverables, and exploitability of research outputs.
5.	Provide quality technical and project progress reports for distribution to members and clients, adopting best practice in effective knowledge transfer; support wider dissemination at conferences and in peer-reviewed journals.
6.	Contribute to PNDC's safe operational running, effective administration, and knowledge exchange events and initiatives.
7.	Plan and manage workload, with guidance from colleagues as required, while adopting safe and appropriate working practices.
8.	Provide guidance and support fellow researchers in other research areas to help meet PNDC objectives.
9.	Engage in continuous professional development, participating in external networks and consultations to maintain current knowledge of relevant state of the art, patent positions, products and Technology Readiness Levels.
10.	Click here to enter text.

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)

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| E1 | Good honours degree and PhD / higher degree (or equivalent professional experience) in an appropriate discipline related to Power Electronics, Machines and Drives. |
| D1 | Membership of relevant professional bodies relating to installation, safety and operation of distributed energy resources or other power electronics applications. |

Experience

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| E2 | Experience of addressing a range of industrial and commercial challenges within an academic or industrial enterprise and with external stakeholders. |
| E3 | Experience of the design, development and execution of test methods |

- D2 Proficiency in electrical system simulation programs (e.g. OpenDSS, DigSILENT, Matlab/Simulink);
- D3 Experience in engaging with industry and research institutions to shape collaborative research and development projects or programs and securing funding.
- D4 Experience with digital real-time simulators (i.e. RTDS, Opal-RT etc.);
- D5 Experience programming controllers for power electronics and testing (FPGA, DSP)

Job Related Skills and Achievements

- E4 High levels of initiative with the ability to apply knowledge in a highly practical environment, and to generate new ideas;
- E5 Ability to lead in and take technical ownership of research and development projects, and deliver at a high technical industrial standard.

Personal Attributes

- E6 Excellent interpersonal and communication skills (oral and written), with the ability to listen, engage and persuade, and to present complex information in an accessible way to a range of audiences.
- E7 The ability to work independently and conduct individual research and knowledge exchange activity, with minimum supervision, and as part of a small team.
- E8 Enthusiastic self-starter and able to work to deadlines, with a customer focus.

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 Simon Hill, PNDC Delivery Programme Manager (simon.hill@strath.ac.uk / +44 1236 617189).

Conditions of Employment

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

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](#).

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](#).

Interviews

It is anticipated that interviews for this post will be held on 24/03/2021.

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 gender equality in academia across all academic disciplines and professional and support functions.

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.

