

# Senior Research & Development Engineer (Power Electronics, EV and ESS)

Department	Power Networks Demonstration Centre (PNDC) ( <a href="http://www.strath.ac.uk/research/powernetworksdemonstrationcentre/">http://www.strath.ac.uk/research/powernetworksdemonstrationcentre/</a> ), Department of Electrical and Electronic Engineering ( <a href="http://www.strath.ac.uk/engineering/electronicalelectricalengineering/">http://www.strath.ac.uk/engineering/electronicalelectricalengineering/</a> )		
Faculty	Faculty of Engineering ( <a href="http://www.strath.ac.uk/engineering/">www.strath.ac.uk/engineering/</a> )		
Staff Category	Knowledge Exchange	Reference No	236470
Reports To	PNDC Programme Delivery Manager	Grade:	8
Salary Range:	£40792 - £50132	Contract Type:	Open Contract
FTE	1	Closing Date	11/08/2019

## Job Advert

The University of Strathclyde in Glasgow possesses a large internationally rated Engineering Faculty with a proud history of successful joint ventures with industrial and enterprise partners. As part of the University's strategic development, the Power Networks Demonstration Centre (PNDC) has been established in Wardpark North near Cumbernauld. 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 – has been 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. With the addition of UK Power Networks, Vodafone, Cisco, S&C Electric, Omicron, and Locamation, the Centre has expanded its membership to eight industry partners and this growth is set to continue.

The PNDC provides: a purpose-built platform for showcasing state-of-the-art electrical distribution, generation, storage and demand side innovation; a rapid technology pipeline accelerating the proving and deployment of integrated smart grid solutions with commercial partners; a realistic and controllable test bed from primary plant to state-of-the-art control room for the development of emerging smart grid technologies that will support the realisation of a de-carbonised grid. The PNDC is formally linked to the University through the Institute for Energy and Environment within the Department of Electronic and Electrical Engineering.



The PNDC seeks to appoint an experienced and enthusiastic Senior Research and Development Engineer to lead and manage delivery of high value research knowledge exchange programmes in the area of Power Electronics, including Electric Vehicle and Energy Storage System capability. The candidate will also be able to lead on and contribute to high value industrial funding proposals. The post holder will be expected to work between the PNDC and its industrial partners and there will be a strong emphasis on knowledge exchange.

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

- a) Design of power electronics converters for industrial applications
- b) Development of a detailed technical specifications for new design concepts
- c) Utilization of new semiconductor technology for converters and power supplies
- d) Industrial application of power electronics (e.g. EV, storage or power conversion applications)
- e) Control systems for power electronics (e.g. synthetic inertia)

The post holder will require the knowledge, skills and experience normally associated with a first degree in Electronics and Electrical Engineering and PhD or equivalent industrial experience. The post holder will have an established track record in leading the delivery of research and development projects in collaboration with industry or in industrial context.

The post holder will have the ability to work autonomously, plan and prioritise own workload with minimal inputs from higher management, and deal with complex problems presented to them by colleagues. The post holder will also need significant experience of project planning and delivery, as well as excellent communication and interpersonal skills, with a proven ability to interact with a range of stakeholders from industry and academia.

## Job Description

### Brief Outline of Job:

You will undertake specific research and development projects under the guidance of the PNDC leadership team, providing regular updates and reports for industrial partners, and thus supporting the Centre objectives and targets. A strong engagement with industry colleagues, as well as with the PNDC and wider University team, will support the realisation of relevant and valuable results. You will lead specific research areas while contributing to others, and will develop project plans for consideration by industrial partners and clients as well as writing research proposals for geared funding. Through engagement with relevant professional and knowledge exchange activities, you will support the PNDC's external profile and technical leadership. Working as part of a dynamic team you will further support PNDC administrative and operational activities.

### Main Activities/Responsibilities:

1.	Provide technical expert advice and lead on collaborative research, development and testing projects relevant to the PNDC Power Electronics and Distributed Energy Resources research theme. Determine and utilise appropriate new research methods, with a focus on practical implementation and validation within the PNDC facilities.
2.	Work with academics, the PNDC R&D Manager and the PNDC research staff to develop the Power Electronics, EV and ESS related R&D program. Maintain and improve the relationship with the theme's industrial partners.
3.	Assess, evaluate and interpret outcomes of R&D project activity, identifying new applications/approaches/techniques or technologies and ensuring that any IP generated is recognised and managed appropriately.
4.	Provide expert guidance to project teams in area of expertise to ensure resource efficient solutions are developed in response to industry and research challenges. Mentor colleagues with less experience and advise on personal development.
5.	Apply technical knowledge to industry issues to investigate and quantify problems experienced by PNDC members and clients, by developing project outlines and project specifications for consideration as part of the centre core programme or directly funded work. Contribute to the development of geared funding proposals.
6.	Project manage larger, more complex projects, ensuring deliverables are met and clear reporting is available. Manage delivery of 3rd party contributions or suppliers as required including resolving problems of meeting objectives and deadlines and resolving any difficulties that may occur between the internal team and partners.
7.	Maintain appropriate engagement with industrial members and third party vendors to ensure relevance and accuracy of work. Maintain professional awareness to ensure originality and exploitability of the research outputs.
8.	Provide quality technical and progress reports of research, development and testing work for distribution to members and clients. Adopt best practice in effective knowledge transfer and support wider dissemination at conferences and in peer reviewed journals.
9.	As part of the dynamic team at PNDC, contribute to the safe operational running of the centre, including effective administration and knowledge exchange events and initiatives.

10.	Maintain appropriate engagement with colleagues in the wider university teams, to support the capture of further funding opportunities, exploit synergy with other research programmes and contribute to alignment with key industry member needs.
11	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.
12	Contribute to policy and industry consultations where appropriate, in support of PNDC input to the sector.

## 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 Good honours degree (minimum class 2:1) in a relevant engineering discipline. E.g. Electrical and Electronic Engineering

E2 Professional experience or PhD in a topic related to Power Electronics and their industrial application.

D1 Professional qualifications relating to installation, safety and operation of distributed energy resources

### Experience

E3 Significant experience of addressing a range of industrial and commercial challenges within an academic or industrial enterprise.

E4 Ability to lead in and take technical ownership of research and development areas, and manage the work of a R&D engineers

E5 A track record of developing research and development project proposals and securing funding

E6 A track record of engaging with industry and research institution to shape collaborative research and development projects or programs

D2 A track record of leading the delivery of research and development projects

D3 Experience in working in teams and managing/mentoring colleagues.

D4 Experience of the design, development and execution of test methods.

D5 Knowledge of protection, control, automation and/or measurement schemes, Experience of working in, or for, the electricity supply industry.

D6 Line management experience of a team of people.

### Job Related Skills and Achievements

E7 Excellent written and verbal communication skills, with an ability to interact with a range of stakeholders in both industry and academia.

E8 Ability to influence stakeholders, internally and externally, at varying levels and ability to convey compelling arguments with complex technical information

E9 High levels of initiative with the ability to apply knowledge in a highly practical environment, and to generate new ideas.

### Personal Attributes

E10 An ability to work as part of a team, through participation in collaborative projects, and developing evidence of leadership

E11 Ability to develop new areas and manage associated ambiguity as new research themes emerge

D7 An ability to listen, engage and persuade, and to present complex information in an accessible way to a range of audiences

## 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, Delivery Programme Manager, [Simon.hill@strath.ac.uk](mailto:Simon.hill@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 Knowledge Exchange staff category can be found at: [Conditions of Employment](#).

### Probation

Where applicable, the successful applicant will be required to serve a 12 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](#).

### Relocation

Where applicable, the University offers a relocation package to support new employees who meet the eligibility criteria. The relocation package is offered as a contribution towards costs incurred, and is designed to be flexible, allowing staff to use the financial support available in the way that will be most helpful to them. Further details are outlined in the Relocation Policy.

### 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.

