



Research and Development Engineer (Power Systems and Protection)

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	573493
Reports To	Lead R&D Engineer (Digital Grids)	Grade:	7
Salary Range:	£36024 - £44263	Contract Type:	Fixed Term (24 months)
FTE:	1 (35 hours/week)	Closing Date	Friday, 20 September 2024
Holidays	31 days + 11 statutory days Option to purchase additional holidays.		
Pensions	Contributory pension scheme available to all staff including generous employer contribution.		
Training	Professional Development with Organisational and Staff Development Unit (OSDU) plus external training if required.		
Family Friendly Benefits	Generous parental leave provision, on-campus nursery and options for flexible working.		
Health and Wellbeing	University Sport centre, Occupational Health service, access to health and wellbeing events, cycle to work scheme, Employee Assistance Programme, agile working and established carers support network and carer friendly policies.		

Job Advert

This is an exciting role within PNDC that will be responsible for the development and delivery of a cutting-edge innovation projects in the area of power systems and their protection. The post-holder will focus on modelling and laboratory-based testing of new solutions while working with PNDC's industrial partners.

To be considered for the role, you will:

- Have substantial experience in power system modelling, carrying out power system studies and working with protection schemes gained from working in a relevant industry or in academia.
- Have experience of the delivery of research and development projects in collaboration with industry or within an industrial context.
- Have hands on experience in designing, implementing and testing protection schemes enabling the secure and resilient supply of electricity.
- Demonstrate excellent technical writing ability and strong communication skills.
- Be a self-starter, and be able to plan, conduct and co-ordinate research and knowledge exchange activities with minimal supervision, as well as generate new ideas and concepts, with the capacity to work in a dynamically changing team environment

About PNDC

Established in 2013 as one of the University of Strathclyde's industry-facing innovation centres, PNDC is a world-class whole energy systems innovation, test and demonstration environment across multiple locations, shaping the energy transition through its leading-edge programme of work. The facilities and capabilities offered by PNDC are unique in Europe, attracting global organisations to partner with us in our combined efforts to accelerate the deployment of innovations across the whole energy system.

PNDC continues to evolve its capabilities in the established facility located in Cumbernauld and support innovation in advancing power networks and accelerating the decarbonisation of heat and transport. PNDC is investing over £20m in new capabilities with a particular focus on decarbonisation of heat and transport, and will launch a second testing facility in 2023.

The PNDC innovation programme covers three main focus areas: Advancement of Power Networks, Decarbonisation of Heat, and Decarbonisation of Transport. The programme includes a number of innovation themes within each area as well as whole energy system innovation across power networks, heat and transport.

Advancement of Power Networks concentrates primarily on accelerating and de-risking innovations that support the major changes in electricity generation and demand characteristics resulting from the net zero transition. Particular focus is placed on solutions that increase power system robustness and security, support the digitalisation of the entire power network sector, and those that facilitate the greater flexibility and participation of demand side innovations in the energy transition.

Decarbonisation of Heat concentrates primarily on accelerating and de-risking novel low carbon heating solutions, both at large scale (e.g. zero-carbon CHP, district heating schemes, hydrogen-for-heating) and at smaller scale addressing the domestic/small commercial scale markets (e.g. heat pumps, hydrogen boilers, solar thermal). Particular focus is also placed on the integration of novel low carbon heating technologies into the wider energy system, their control and scheduling, and the impact of consumer behaviour on technology deployment.

Decarbonisation of Transport concentrates primarily on accelerating and de-risking novel low carbon transport systems for land, marine and aero transport sectors. This covers both innovations in vehicle charging infrastructure and innovations in on board systems. Particular focus is placed on new electric drive trains and on board power systems, including a number of new components such as fuel cells, batteries, and power electronic machine and drive components.

We are a dynamic, flexible and collaborative team, where colleagues support each other through constructive challenge as well as simply lending a hand to build something new. We are energised when we see the products we've helped develop being deployed and actively reducing costs to consumers, increasing reliability of supply or making the world a more sustainable place. If this appeals to you, then please visit our website (www.pndc.co.uk) to learn more about our Focus Areas and our team.

While part of the University of Strathclyde, the PNDC is an off campus industry facing facility based near Cumbernauld.

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 work across assigned research areas in accordance with PNDC research programme objectives, as well as externally funded projects, and will develop project plans for consideration by industrial partners and clients as well as research proposals for geared funding. Through engaging in 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 input to PNDC administrative and operational activities.

Main Activities/Responsibilities:

1.	Conduct collaborative research, development and testing projects relevant to the PNDC research programme, determining and utilising appropriate research methods, with a focus on practical implementation and validation within the PNDC facilities.
2.	Maintain appropriate engagement with industrial members and third-party vendors to ensure relevance and accuracy of deliverables. Maintain professional awareness to ensure originality and exploitability of the research outputs.
3.	Provide quality technical and progress reports of research, development and testing work for distribution to members and clients, adopting best practice in effective knowledge transfer to members, and supporting wider dissemination at conferences and in peer-reviewed journals.
4.	As part of the dynamic team at PNDC, contribute to the Centre's safe operational running, effective administration, and knowledge exchange events and initiatives.

5.	Plan and manage own workload, with guidance from colleagues as required, while adopting safe and appropriate working practices.
6.	Contribute to assigned PNDC core research themes in collaboration with theme leads, academics, and PNDC leadership to deliver the centre's growth ambitions. Maintain key relationships with industry partners and stakeholders.
7.	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.
8.	Apply technical knowledge to industry issues to investigate and quantify problems experienced by PNDC members, and develop project proposals and specifications in response to these. Contribute to the development of geared funding proposals, as part of this.

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 appropriate discipline

E2 PhD in appropriate discipline and/or equivalent relevant industrial experience

D1 Membership, or working towards membership, of a relevant Professional Institution

Experience

E3 Knowledge of and experience with power system operation, stability and protection concepts for AC distribution and transmission networks

E4 Experience in power system modelling and carrying out load flow and fault studies using industry standard software packages such as PSCAD and PowerFactory

E5 Hands on experience with laboratory based testing of AC power components, systems and prototypes

D2 Experience in configuration and testing of protection schemes both conventional and IEC 61850 based

D3 Experience in hardware in the loop testing using RTDS or OpalRT

D4 Experience in high level programming languages (e.g. C++, Python)

Job Related Skills and Achievements

E6 An excellent problem-solver, with track record of achievement in an R&D environment

E7 Ability to conduct individual testing, data analysis, the preparation of test programmes and reports, and to present findings to experienced internal and external technical audiences

E8 High level of initiative with the ability to apply knowledge in a highly practical environment, and to generate new ideas

D5 Ability to translate new ideas into industrial projects and successful funding proposals

Personal Attributes

E9 Enthusiastic self-starter and able to work independently to deadlines, with a customer focus

E10 Excellent organisational, interpersonal and communication skills, with the 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 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/workforum>).

Informal enquiries about the post can be directed to Ibrahim Abdulhadi, Lead R&D Engineer (ibrahim.f.abdulhadi@strath.ac.uk).

Conditions of Employment

Conditions of employment relating to Knowledge Exchange Staff can be found here: [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](#).

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.

Interviews

Formal interviews for this post will be held on a date to be confirmed.

Equality and Diversity

The University of Strathclyde is a socially progressive institution that strives to ensure equality of opportunity and celebrates the diversity of its student and staff community. Strathclyde is people-oriented and collaborative, offering a supportive and flexible working culture with a deep commitment to our equality, diversity and inclusion charters, initiatives, groups and networks.

We strongly encourage applications from Black, Asian and minority ethnicity, women, LGBT+, and disabled candidates and candidates from lower socio-economic groups and care-experienced backgrounds.

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.

