R&D Engineer (Whole Energy Systems)

Department	Power Networks Demonstration Centre (PNDC) (http://www.strath.ac.uk/pndc/), Department of Electrical and Electronic Engineering (http://www.strath.ac.uk/eee/)		
Faculty	Faculty of Engineering (www.strath.ac.uk/engineering/)		
Staff Category	Knowledge Exchange	Reference No	395754
Reports To	Lead R&D Engineer Whole Energy Systems	Grade:	7
Salary Range:	£33,309 - £40,927	Contract Type:	Fixed Term (24 months)
FTE:	1 (35 hours/week)	Closing Date	26/09/2021

Job Advert

The Power Networks Demonstration Centre (PNDC), part of the University of Strathclyde (Times Higher Education Awards University of the Year 2019 and Scottish University of the Year 2020), wishes to appoint a R&D Engineer (Whole Energy Systems) to our team to research, develop, test and demonstrate whole energy system solutions – those that span or can impact upon more than one sector of the energy system (electricity, heat, transport). Particular focus for this role is low carbon heating and/or hydrogen-based energy systems. By bringing our expertise to project teams and key stakeholders, we aim to accelerate innovation and de-risk effective deployment and integration of new innovations and drive them towards business-as-usual within the net-zero energy system of the future.

The PNDC is one of the Commercialisation Centres for the recently-announced Hydrogen Accelerator (https://h2-accelerator.wp.st-andrews.ac.uk/). The Hydrogen Accelerator is the Scottish initiative for developing and supporting world-leading hydrogen projects, placing Scotland at the forefront of innovative decarbonising solutions, in particular, relating to hydrogen and hydrogen-based technologies in transport. Funded by Transport Scotland and the Scottish Government, the initiative will support the development and scale-up of hydrogen projects in Scotland.

The R&D Engineer (Whole Energy Systems) will work closely with colleagues in the PNDC to develop and deliver a wide range of technical projects to support the growth of PNDC's whole energy system activities, with a particular emphasis on the experimental validation and testing of low carbon heating and/or hydrogen-based energy systems.

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 PNDC offers a dynamic and varied environment, providing the opportunity to be involved in leading edge work within the energy sector. As part of the University of Strathclyde, the PNDC can offer a wide range of benefits to the post holder, including a generous holiday entitlement, pension scheme, and discounts to the state-of-the-art Strathclyde Sport gym and leisure facilities. The University also 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.

To be considered for the role, you will

- Possess the knowledge, skills and experience normally associated with a PhD in a relevant field or you will be educated to Honours Degree level with relevant industrial experience
- Have experience in low-carbon technology with particular experience of low carbon heating and/or hydrogen-based energy systems
- Be able to apply this knowledge in a highly practical environment, have experience of working on research and development projects in collaboration with industry or in an industrial context, and you will have good technical writing ability and strong communication skills
- Be a self-starter, and able to plan and conduct individual 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.

Job Description

Brief Outline of Job:

The R&D Engineer (Whole Energy Systems) will undertake specific research and development projects to support the PNDC's innovation activities in whole energy systems, with particular focus on low carbon heating and hydrogen-based energy systems. The role requires strong engagement with industry, PNDC colleagues, the wider University team, and collaboration partners such as those within the Hydrogen Accelerator, to support the realisation of relevant and valuable results. The postholder will also develop project proposals for consideration by industrial partners and clients as well as research applications for geared funding. While part of the University, the PNDC is an off-campus industry facing facility based near Cumbernauld.

Main Activities/Responsibilities:

1.	Conduct research, development and testing activities in collaboration with industrial and academic colleagues focussed in the area of whole energy systems innovation, in particular low carbon heating and/or hydrogen-based energy systems. This will include aspects of: - Developing project requirement specifications through engagement with external partners and by incorporating learnings from previous research - Technology and system design assessments, system integration studies, and engineering studies - Safety evaluations - Modelling, simulation and transient performance studies, including those associated with the integration of low-carbon heating and hydrogen-based energy systems into electrical power systems - Environmental impact analysis - Techno-economic assessments and feasibility studies - Production of technical guidance and briefings - Timely and on-budget delivery
2.	Produce high-quality technical and project progress reports, and supporting dissemination at conferences and in peer-reviewed journals
3.	Contribute to PNDC's innovation programme in collaboration with industrial stakeholders, academics and R&D colleagues to deliver the centre's growth ambitions
4.	Attend and contribute to project review and progress meetings. Attend site visits/meetings as required
5.	Contribute to PNDC's safe operational running, effective administration, and knowledge exchange events and initiatives
6.	Maintain appropriate engagement with colleagues in the wider university teams, to draw in appropriate expertise into project and proposal activity, exploit synergy with other research programmes, and contribute to sector-leading activities aligned with key industry member and stakeholder needs
7.	Identify sources of funding and contribute to the securing of funds for research activities, including fostering links with potential partners, drafting proposals and planning for future proposals
8.	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

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 discipline
E2	PhD in appropriate discipline and/or relevant industrial experience
D1	Membership, or working towards membership, of a relevant Professional Institution.
Experience	
E3	Experience in low carbon heating and/or hydrogen-based energy systems design, analysis and integration
D2	Knowledge of electrical power systems design and systems integration
E4	Experience of engaging with external clients to capture system requirements and developing technical or project specifications from these requirements
E5	Experience in modelling and simulation in a relevant discipline
D3	Knowledge of techno-economic analysis/modelling
E6	Experience in the development and testing of prototype systems
D4	Knowledge of the energy industry landscape, and of low-carbon heating and hydrogen-based energy system innovation and demonstration projects around Scotland and internationally
Job Related Skills and Achievements	
E7	An excellent problem-solver, with a track record of achievement in an R&D environment
E8	High level of initiative with the ability to apply knowledge in a highly practical environment, and to generate new ideas
E9	Ability to conduct testing, data analysis, preparation of test programmes and reports and engaging with industrial clients
D5	Ability to learn quickly in a fast moving, changing environment
E10	Good evidence of technical writing ability and strong communication skills
Personal Attributes	
E11	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
E12	The ability to work independently and conduct individual research and knowledge exchange activity, with minimum supervision, and as part of a small team
E13	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 (https://www.strath.ac.uk/workwithus/vacancies/).

Informal enquiries about the post can be directed to Richard Knight, Director for Strategy & Technology (richard.knight@strath.ac.uk).

Conditions of Employment

Conditions of employment relating to the Administrative and Professional 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.

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 in October 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 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.