

Senior Research & Development Engineer (Communications and Systems Integration)

Department	Power Networks Demonstration Centre (PNDC) (https://pndc.co.uk), 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	401648
Reports To	PNDC R&D Manager	Grade:	8
Salary Range:	£42,149- £51,799	Contract Type:	Open Contract
FTE:	1	Closing Date	Sunday, 24 October 2021

Job Advert

The PNDC seeks to appoint an experienced and enthusiastic Senior Research and Development Engineer to lead and manage delivery of high value research and knowledge exchange programmes, and develop PNDC communications and systems integration capability. This will involve the candidate pro-actively engaging with industrial partners and leading initiatives which develop research opportunities, funding awards and create impact for PNDC stakeholders. The candidate will also be able to lead and contribute to high value industrial project 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.

Opportunities for innovation are extensive, through the strong working relationship and routes to market afforded by the PNDC industry members, which include UKPN, SSEN, & SPEN. This will be supplemented with collaborative opportunities with other research and industry teams in the UK and abroad.

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

- a) Industrial Internet-of-Things
- b) Communication Frameworks e.g. Modbus, DNP3, OpenFMB. OpenADR etc.
- c) Communications Technologies e.g. LTE/5G, IoT, IP/MPLS
- d) Cyber Security and Data Encryption
- e) System Integration and Cloud Computing

The post holder will require the knowledge, skills and experience normally associated with a first degree in Electronics, Electrical Engineering, Computer Engineering, Communications, Computer Science or similar and, PhD or equivalent industrial experience for example in wireless communications, cloud computing and cyber security. 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 Power Networks Demonstration Centre 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 and many other partners, the Centre has expanded its membership to twelve 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 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:

In close collaboration with the Communication and System Integration Academic Lead and the PNDC R&D Manager, the Senior R&D Engineer will lead the development of PNDC communications capabilities, and the development and delivery of the communications and systems integration R&D programmes.

The post holder will work in one or more of the following areas with-in the Communication and System Integration theme:

- a) Industrial Internet-of-Things
- b) Communication Frameworks e.g. Modbus, DNP3, OpenFMB. OpenADR etc.
- c) Communications Technologies e.g. LTE/5G, IoT, IP/MPLS
- d) Cyber Security and Data Encryption
- e) System Integration and Cloud Computing

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.	Provide technical expert advice and lead on collaborative research, development and testing projects relevant to the PNDC communications and systems integration R&D theme. Determine and utilise appropriate new research methods, with a focus on practical implementation and validation within the PNDC facilities, generating impact for industrial partners.
2.	Provide leadership in identifying and securing additional funding for active research activities, increasing the research portfolio and leveraging industrial funding where possible.
3.	Work with academics, the PNDC R&D Manager and the PNDC research staff to develop the communication and systems integration theme (and as required other themes) program of work. Maintain and improve the relationship with the theme's industrial partners.

4.	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.
5.	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.
6.	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. Lead on and contribute to the development of geared funding proposals.
7.	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.
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)

E.1 Good honours degree (minimum class 2:1) in Electronics, Electrical Engineering, Computer Science, Communications or similar and significant professional experience OR PhD in Electronics, Electrical Engineering, Computer Science, Communications or similar and professional experience.

D.1 Chartered Engineer/ Member of professional body in an appropriate discipline.

Experience

E.2 Expert in a variety of communications technologies and their industrial applications.

E.3 Significant experience of addressing a range of industrial and commercial challenges within an academic or industrial enterprise, leading the delivery of research and development.

E.4 Ability to lead in and take technical ownership of research and development areas, and manage the work of R&D engineers, managing and mentoring colleagues.

E.5 A track record of developing research and development project proposals and securing funding awards

D.2 Experience in next generation wireless networks i.e. 5G/LTE, NB-IoT, LoraWAN etc.

D.3 Experience in cyber security and track record in research in this area.

D.4 Experience of cloud computing, virtualization platforms (Kubernetes and Docker) and remote access.

D.5 Experience of the integration or use of SCADA, PLC, RTU or similar systems.

D.6 Experience of the systems engineering approach.

Job Related Skills and Achievements

E.6 Excellent written and verbal communication skills, with an ability to interact with a range of stakeholders in both industry and academia.

E.7 Ability to influence stakeholders, internally and externally, at varying levels and ability to convey compelling arguments with complex technical information.

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- D.7 High levels of initiative with the ability to apply knowledge in a highly practical environment, and to generate new ideas.
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- D.8 Programming skills and track record in successfully developing complex software in a variety of languages (e.g. C, C++, Python, PLC based languages) and environments.
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- D.9 Experience in penetration testing, exploiting vulnerabilities in industrial systems.
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Personal Attributes

- E.8 An ability to work as part of a team, through participation in collaborative projects, and developing evidence of leadership.
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- E.9 Able to work in a structured quality management environment, contributing to continuous improvement.
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- E.10 An ability to listen, engage and persuade, and to present complex information in an accessible way to a range of audiences.
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Application Procedure

Applicants are required to complete an application form including the name of three referees who will be contacted before interview without permission, unless you indicate that you would prefer otherwise. Applicants should also submit a Curriculum Vitae and a covering letter as a single document 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](#).

Pre-employment health screening

An offer of appointment will be subject to a medical assessment by Occupational Health. An individual who accepts an offer of employment must complete a confidential medical questionnaire and forward it to the Occupational Health Nurse within 5 days of receipt. If further information is required the individual may be contacted by the OHN or a Medical Advisor and a personal appointment with the individual may be arranged. An unconditional contract of employment will not be issued until Human Resources receives confirmation that applicant is fit to undertake the duties of the post.

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.

Interviews

It is anticipated that interviews will be held on Friday, 5 November 2021

Equality and Diversity

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

