THE POST

College:	**College of Engineering, Mathematics and Physical Sciences**
Post:	**Postdoctoral Research Associate / Postdoctoral Research Fellow**
Reference No:	**P68603**
Grade:	**E/F**
HERA:	**ARF/RFEL**
Reporting To:	**Dr Philipp Thies**

The above full time post is available from 1st of March 2020 for 22 months in the College of Engineering, Mathematics and Physical Sciences, Cornwall, Penryn Campus.

Job Description

Main purpose of the job:

This research project supports the underpinning research as part of the recently awarded EPSRC Supergen Offshore Renewable Energy (ORE) hub. The successful applicant will join a strong research group in Offshore Renewable Energy, with extensive physical and computational facilities and an international track-record in Ocean Technology.

The EPSRC Supergen ORE hub was created in July 2018 to bring together a network of academic, industrial and policy stakeholders to champion and maintain the UK's wave, tidal and offshore wind expertise. The hub is a £9 Million initiative funded by the Engineering and Physical Sciences Research Council (EPSRC). It is a consortium of Universities researching Offshore Renewable Energy, led by the University of Plymouth and also includes University of Aberdeen, University of Edinburgh, University of Exeter, University of Hull, University of Manchester, University of Oxford, University of Southampton, University of Strathclyde and University of Warwick.
The Supergen ORE Hub brings together and builds on the work of the former Wind and Marine Supergen Hubs following consultation with the research community. The new hub looks for synergies between wind, wave and tidal technologies as well as building on current research in each area. As part of the hub there is an extensive training and development network for Early Career Researchers, and the post holder will be able to actively participate in these personal development opportunities.

The successful applicant will be involved in an inter-disciplinary team and be a strong team player. Applicants will be a nationally recognised authority in marine or offshore engineering, with skills in global hydrodynamic modelling and local Finite Element Modelling tools. They should be able to work collaboratively, supervise the work of others and act as team leader as required. The post-holders will contribute to team decision making and use creativity to analyse and interpret research data to generate original ideas based on outcomes leading to the publication of research of international standing and quality. Ideally, the candidate will have been active in the field of marine or offshore engineering with a background in floating offshore designs, dynamic cable modelling and/or cable design. A record of effective project management and enthusiasm to cross disciplines is an advantage. Any experience in experimental and physical testing would also be beneficial.

POSTDOCTORAL RESEARCH ASSOCIATE

Main duties and accountabilities:

1. To undertake research as appropriate to the field of study including:

- Undertake Engineering Design Analysis for dynamic submarine power cables,
- Development of detailed global and local load models for floating offshore installations;

- Modelling and mechanical testing of submarine power cables;
- Risk and reliability assessments of ORE systems;
- Writing up research work for publication;
- Developing research objectives and proposals for own or joint research;
- Making presentations at national and international conferences and similar events;
- Dealing with problems which may affect the achievement of research objectives and deadlines;
- Analysing and interpreting the results of own research and generating original ideas based on outcomes;
- Using new research techniques and methods;
- Using initiative and creativity to identify areas for research, developing new research methods and extending the research portfolio;
- Using creativity to analyse and interpret research data and draw conclusions on the outcomes.

2. To contribute to teaching and to be involved in the assessment of student knowledge including assisting in the supervision of student projects and in the development of student research skills.

3. To work in collaboration with colleagues as appropriate to the field of study including:

   - Contributing to collaboration with industry partners
   - Contributing to collaborative decision making within the research group;
   - Contributing to the production of collaborative research reports and publications.
   - Preparing papers and presenting information on research progress and outcomes to bodies supervising research, e.g. steering groups.

4. To communicate complex information, orally, in writing and electronically.

5. To prepare proposals and applications to external bodies, e.g. for funding and contractual purposes

6. To contribute to the planning of research projects.

7. To use research resources, laboratories and workshops as appropriate and to take responsibility for reducing hazards and for the health and safety of others. Where appropriate, will also be responsible for conducting risk assessments.

8. To monitor research budgets as appropriate.

9. To engage in continuous professional development and to be responsible for continually updating knowledge and understanding in field of study or specialism and for developing skills.

This job description summarises the main duties and accountabilities of the post and is not comprehensive: the post-holder may be required to undertake other duties of similar level and responsibility. Please visit the Human Resources website to view the Associate Research Fellow role profiles.

Person Specification (POSTDOCTORAL RESEARCH ASSOCIATE)

Competency	Essential	Desirable
Attainments/Qualifications	MEng in Offshore Engineering, Naval architecture or a related field of study.	PhD (or nearing completion) or equivalent qualification / experience in a related field of study.
Skills and Understanding	Sufficient knowledge in the discipline and of research methods and techniques to work within established research programmes.	Evidence of research activity and published research.
Prior Experience	Experience in Engineering Design and Analysis.	Demonstrable track-record in Engineering Design Optimisation.
Behavioural Characteristics	Excellent written and verbal communication skills. Able to communicate material of a specialist or highly technical nature.	Able to manage research and administrative activities and to balance the competing pressures of research and administrative demands and deadlines.

	Able to liaise with colleagues and students. Able to build contacts and participate in internal and external networks for the exchange of information and collaboration. Able to identify potential sources of funding. Actively participate as a member of a research team. Engage in continuous professional development. Understand equal opportunity issues as they may impact on areas of research content. Where appropriate to the role, willingness to undergo training in order to conduct risk assessments.	
Circumstances	Willing to work flexibly to achieve project demands and travel abroad.	
Additional Competencies/Experience	Understanding of core challenges around the use of submarine dynamic power cables Experience with offshore engineering design tools and software "Matlab".	Strong experience in the design and testing of dynamic power cables. Experience in detailed engineering analysis, incorporating global load analysis into local stress analysis. Skills with OrcaFlex, UFlex, or similar.

POSTDOCTORAL RESEARCH FELLOW

Main duties and accountabilities:

1. To undertake research as appropriate to the field of study. The responsibilities may include all or some of the following:

- Undertake Engineering Design Analysis for dynamic submarine power cables,
- Development of detailed global and local load models for floating offshore installations;
- Modelling and mechanical testing of submarine power cables;
- Risk and reliability assessments of ORE systems;
- Acting as principal investigator on research projects;
- Developing research objectives, projects and proposals;
- Conducting individual or collaborative research projects;
- Identifying sources of funding and contributing to the process of securing funds;
- Extending, transforming and applying knowledge acquired from scholarship to research and appropriate external activities;
- Writing or contributing to publications or disseminating research findings using media appropriate to the discipline;
- Making presentations at conferences or exhibiting work in other appropriate events;
- Assessing, interpreting and evaluating outcomes of research;

- Developing new concepts and ideas to extend intellectual understanding;
- Resolving problems of meeting research objectives and deadlines;
- Developing ideas for generating income and promoting research area;
- Developing ideas for application of research outcomes;
- Deciding on / following research programmes and methodologies, often in collaboration with colleagues and sometimes subject to the approval of the head of the research programme on fundamental issues.

2. To contribute to teaching and learning programmes in the School and to supervise postgraduate research students.

3. To act as research team leader including:

- Participate in the research and networking activities of the EPSRC Supergen ORE Hub
- Mentoring colleagues with less experience and advising on their professional development;
- Coaching and supporting colleagues in developing their research techniques;
- Supervising the work of others, for example in research teams or projects;
- Developing productive working relationships with other members of staff;
- Co-ordinating the work of colleagues to ensure equitable access to resources and facilities;
- Dealing with standard problems and help colleagues to resolve their concerns about progress in research.

4. To routinely communicate complex and conceptual ideas to those with limited knowledge as well as to peers using high level skills and a range of media and to present the results of scientific research to sponsors and at conferences.

5. As determined by the nature of the project and at the direction of the PI, to plan, co-ordinate and implement research programme activity including:

- Managing the use of research resources and ensure that effective use is made of them;
- Monitoring and reporting on the use of research budgets;
- Helping to plan and implement commercial and consultancy activities;
- Where appropriate, to plan and manage own consultancy assignments.

This job description summarises the main duties and accountabilities of the post and is not comprehensive: the post-holder may be required to undertake other duties of similar level and responsibility. Please visit the Human Resources website to view the Research Fellow role profiles.

Person Specification POSTDOCTORAL RESEARCH FELLOW

Competency	Essential	Desirable
Attainments/Qualifications	PhD in a related field of study.	Be a nationally recognised authority in the subject area of ocean engineering / Engineering Design.
Skills and Understanding	Possess sufficient specialist knowledge in the discipline to develop/follow research programmes and methodologies. Record of research output in high quality publications.	Understanding/Experience in the offshore engineering and/or submarine cable design.
Prior Experience	Experience of managing research projects and research teams.	Experience of undergraduate / postgraduate teaching and supervision. Experience of acting as investigator on research projects.
Behavioural Characteristics	Excellent written and verbal communication skills.	Able to identify sources of funding, generate income, obtain

	Able to communicate complex and conceptual ideas to a range of groups. Evidence of the ability to collaborate actively within the Institution and externally to complete research projects and advance thinking. Able to participate in and develop external networks. Able to balance the pressures of research, administrative demands and competing deadlines.	consultancy projects, or build relationships for future activities.
Circumstances	Willing to work flexibly to achieve project demands.	
Additional Competencies/Experience	Strong experience in the design and testing of submarine power cables. Experience in design and analysis processes for offshore installations and/or submarine power cables. Understanding of the core challenges around the Floating Offshore Renewable Energy design. Experience with offshore design tools and software “Matlab”.	Experience in design, modelling and testing of offshore systems. Skills with OrcaFlex, UFlex, Cable CAD, or similar.

Informal Enquiries
Before submitting an application you may wish to discuss the post further by contacting Dr Philipp Thies (P.R.Thies@exeter.ac.uk , 01326 255849)

Terms & Conditions
Our Terms and Conditions of Employment can be viewed here.

Further Information
Please see our website for further information on working at the University of Exeter.

Detailed information on the Offshore Renewable Energy Research can be found here.

An overview presentation, summarising Phase 1 of this project can be found here.