



# Ship Hydrodynamic Research Engineer (KTP Associate)

|                |  |               |                        |
|----------------|--|---------------|------------------------|
| Department     | Naval Architecture, Ocean and Marine Engineering<br>( <a href="http://www.strath.ac.uk/engineering/navalarchitectureoceanmarineengineering/">www.strath.ac.uk/engineering/navalarchitectureoceanmarineengineering/</a> )   |               |                        |
| Faculty        | Faculty of Engineering ( <a href="http://www.strath.ac.uk/engineering/">www.strath.ac.uk/engineering/</a> )  |               |                        |
| Staff Category | KTP Associate  | Reference No  | 646613                 |
| Reports To     | Dr Batuhan Atkas (Knowledge Base Supervisor)<br>Robert Mutton (Company Supervisor)   | Grade         | RS79                   |
| Salary Range   | £32,000 - £39,000  | Contract Type | Fixed Term (24 months) |
| FTE            | 1 (39 hours/week)  | Closing Date  | 29/09/2024             |
| Holidays       | 33 paid days including 8 public holidays   |               |                        |
| Pensions       | Contributory pension scheme available to all staff including generous employer contribution.   |               |                        |
| Training       | KTP Associates spend 10% of their time on training and personal development, including attendance at 2 compulsory Residential Modules.<br>Professional Development with <a href="#">Organisational and Staff Development Unit</a> (OSDU) plus external training if required. |               |                        |

## Job Advert

The Department of Naval Architecture, Ocean and Marine Engineering (NAOME), in partnership with Stone Marine Propulsion Limited (SMP) (<https://stonemarinepropulsion.com/>) are seeking to appoint a KTP Associate to lead a strategic project aimed at embedding enhanced marine propeller design and modelling capabilities within SMP. The post will be predominantly based at SMP's site in Essex, with visits to the University of Strathclyde campus.

Stone Marine Propulsion (SMP) Ltd is a designer and manufacturer of ship propellers. They sell propellers to new build vessels and retrofit them to current vessels. Their current design is the New Profile Technology (NPT) propeller. SMP wish to embed enhanced design/modelling capability from the University of Strathclyde, allowing them complete control of the design process.

The position offers the KTP Associate the following benefits:

- The opportunity of a permanent position with the company: 70% of host companies make a permanent job offer to their Associate at the end of the project
- Fast-track your career
- Take on a role that bridges academia and business.
- Manage your own substantial training and development budget of £2000 per year (you can also use this to attend conferences, cover membership of professional bodies etc.)
- You will 'own' your project, linked to both a university and a business whose experienced teams will provide you with full support. Applying academic knowledge to a real-world challenge is a chance to deliver impact and shape your career.
- A KTP could be the perfect launchpad, helping enhance your career by managing a challenging project central to a business's strategic development and long-term growth.
- A fulfilling employment opportunity where you can apply your knowledge to transform a key strategic innovation idea into reality
- The chance to implement strategic development within an innovative company

- You can choose a variety of training modules during your KTP: Project management, marketing and communication, finance, leadership and/or personal development, and job-specific technical training.
- All the above are in addition to the invaluable experience gained through working on a KTP project with the support of expert teams.

The project is part of the Knowledge Transfer Partnership (KTP) programme that aims to help businesses innovate and grow by working with UK universities. Successful KTP projects are funded by UK Research and Innovation (UKRI) through Innovate UK and are part of the government's Industrial Strategy. To find out how KTP works and the vital role you will play if you successfully secure a KTP Associate position, please visit: [www.ktpws.org.uk](http://www.ktpws.org.uk)

## Job Description

### Brief Outline of Job:

The KTP Associate will lead a strategic project focused on embedding advanced computational modelling capabilities within Stone Marine Propulsion (SMP). The role involves applying cutting-edge techniques such as Artificial Neural Networks (ANNs) and Computational Fluid Dynamics (CFD) to optimise marine propeller design. The Associate will act as a bridge between the University of Strathclyde and SMP, ensuring the successful transfer of knowledge and the integration of new design methodologies into SMP's operations. This role offers an opportunity to significantly impact SMP's product development process and contribute to the company's long-term growth.

### Main Activities/Responsibilities:

|     |   |
|-----|---|
| 1.  | Develop and implement advanced computational models (ANN and CFD) for marine propeller design and optimisation.                                 |
| 2.  | Collaborate closely with SMP's engineering and design teams to integrate new modelling capabilities into existing workflows.                    |
| 3.  | Conduct a thorough analysis of current propeller designs and propose enhancements based on simulation results.                                  |
| 4.  | Organise and deliver training sessions for SMP staff to ensure effective knowledge transfer and capability development.                         |
| 5.  | Regularly liaise with academic mentors at the University of Strathclyde to align project objectives and access specialised resources.           |
| 6.  | Manage project timelines, milestones, and deliverables, ensuring all tasks are completed within the project scope and time frame.               |
| 7.  | Prepare and present progress reports and findings to both SMP and university stakeholders, incorporating feedback to refine project strategies. |
| 8.  | Develop comprehensive documentation and training materials to support the implementation of the new modelling techniques at SMP.                |
| 9.  | Identify and pursue opportunities for further research and potential funding, ensuring the sustainability of the project's outcomes.            |
| 10. | Ensure compliance with all KTP program requirements and contribute to the overall success of the partnership.                                   |

## 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 A strong academic background in a relevant field, such as Naval Architecture, Marine Engineering, or a related discipline, is essential. A Master's degree or higher demonstrates a solid foundation in the required technical knowledge.
- D1 Professional certifications related to Computational Fluid Dynamics (CFD, Artificial Neural Networks (ANNs) and Finite Element Analysis (FEA).

### Experience

- E2 Prior experience in research or industry projects related to ship hydrodynamics, propeller design and manufacture or similar fields.
- D2 Experience in applying artificial neural networks to engineering problems, particularly in the context of fluid dynamics or marine engineering.
- D3 Experience with industry-standard CFD software such as StarCCM+, Ansys, or similar tools.

---

D4 Experience with FEA analysis of ship propellers and shafting system

### **Job Related Skills and Achievements**

E3 Proficiency in CFD tools and techniques, as the project involves hydrodynamic simulations for propeller design

E4 Strong programming skills, particularly in languages such as Python or MATLAB, for implementing artificial neural networks and conducting data analysis.

E5 Experience with Computer-Aided Design (CAD) and Computer-Aided Engineering (CAE) tools, preferably with knowledge of parametric optimisation

E6 Experience in scientific reports and paper writing and presenting them competently to a small and large audience, including conferences.

### **Personal Attributes**

E7 Strong analytical and problem-solving skills for developing accurate predictive models and optimising propeller designs.

E8 Effective collaboration and communication skills to work with a multidisciplinary team comprising engineers/data scientists/industry experts.

E9 Ability to adapt to evolving project requirements and challenges, demonstrating flexibility in the face of unforeseen issues

---

## **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/workforus>).

Informal enquiries about the post can be directed to Dr Batuhan Aktas, ([batuhan.aktas@strath.ac.uk](mailto:batuhan.aktas@strath.ac.uk)).

### **Conditions of Employment**

Conditions of employment relating to the KTP Associate 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 6 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**

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.

