

Research Associate in Computational and Theoretical
Fluid Mechanics
University of Sheffield

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Posted Feb. 10, 2025, set to expire Jun. 11, 2025

Job Title Research Associate in Computational and Theoretical Fluid Mechanics
Department Mechanical, Aerospace & Civil Engineering
<https://www.sheffield.ac.uk/mac>
Institution University of Sheffield
Sheffield, , United Kingdom

Date Posted Feb. 10, 2025

Application Deadline Mar. 2, 2025

Position Start Date Available immediately

Job Categories Post-Doc

Academic Field(s) Mechanical Engineering

Apply Online Here https://jobsite.sheffield.ac.uk/job/Sheffield-Research-Associate-Investigation-of-Fouling-in-Brazil's-Pipeline-Systems-for-Improved-Water-Supply-a/601-en_GB/?utm_campaign=jobsacuk&utm_source=jobsacuk&applySourceOverride=Jobs.ac.uk

Apply By Email

Job Description

Topic: Investigating the effect of fouling in entrance and fully-developed pipe flows

Work Arrangement: Full Time (Hybrid)

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Salary per annum (£): 37,999.00 - £46,485

Duration: Fixed Term for 30 months.

The University of Sheffield are seeking a committed and motivated Research Associate in Computational and Theoretical Fluid Mechanics to join the School of Mechanical, Aerospace and Civil Engineering at the University of Sheffield. This exciting opportunity involves leading the development of advanced mathematical and computational models to investigate transition to turbulence in pipe flows influenced by fouling.

The project, funded by the *Royal Society Collaboration Grant*, is in partnership with Universidade Federal Fluminense and Universidade Federal do Rio de Janeiro, home to a unique, state-of-the-art laboratory for pipe-flow experiments.

The candidate will investigate the impact of fouling on pipe flows, from the entrainment of realistic ambient disturbances at the pipe entrance to the fully-developed turbulent regime, using a powerful combination of theory (asymptotic methods, receptivity and stability analysis) and Direct Numerical Simulations. Experimental validation will be supported by our collaborators in Rio using their advanced experimental facilities.

As part of the School's renowned [Thermofluids Research Group](#), you will work in one of the world's leading hubs for fluid mechanics research. Additionally, you will benefit from interactions with the interdisciplinary [Sheffield Fluid Mechanics Group](#). This role includes an extended research visit to Rio de Janeiro, to work closely with the experimental partners.

You will have completed, or be close to completion of, a PhD in Fluid Mechanics or a related field, or equivalent professional experience. Significant experience in high-fidelity simulations of turbulent flows, high-performance computational methods and programming and mathematical modelling of wall-bounded shear flows and flow instabilities is essential.

We are committed to exploring flexible working opportunities which benefit the individual and University.

We're one of the best not-for-profit organisations to work for in the UK. The University's Total Reward Package includes a competitive salary, a generous Pension Scheme and annual leave entitlement, as well as access to a range of learning and development courses to support your personal and professional development. More details can be found on our benefits page: sheffield.ac.uk/jobs/benefits

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For more details, including how to apply, please visit:

[Research Associate Computational and Theoretical Fluid Mechanics Job Details | University of Sheffield](#)

If you are interest, we encourage you to get in touch with us:

[Dr Elena Marensi](#), Lecturer in Fluid Mechanics (Project Lead) on e.marensi@sheffield.ac.uk, or

[Prof Pierre Ricco](#), Professor in Fluid Mechanics (Project Collaborator) on p.ricco@sheffield.ac.uk

Contact Information

Please reference Academickeys in your cover letter when applying for or inquiring about this job announcement.

Contact Elena Marensi
Mechanical, Aerospace & Civil Engineering
University of Sheffield
Sheffield
United Kingdom

Contact E-mail e.marensi@sheffield.ac.uk