Research Associate in Computational and Theoretical Fluid Mechanics
University of Sheffield

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:

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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 Engineerng
University of Sheffield
Sheffield
United Kingdom

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