Research Scholarship

Required	Content
Name	PhD Scholarship in Computational Modelling of Pipeline Transport of Highly Concentrated Wastewater Sludges
Introduction	*For Australian permanent resident/or citizens or International students whom located in Australia and are interested in pursuing a Ph.D. at non-Newtonian fluid dynamics and wish to make a real impact on the wastewater industry by optimizing the energy efficiency of their pumps, then this is the project for you.*
Value and duration	A stipend of $30,500 per annum (tax free) is available for 3 years for an outstanding and highly motivated graduate with 1st class Honours in Chemical or Mechanical Engineering, Physics or Mathematics. Higher degree by research candidates in the School of Engineering at RMIT University receive a laptop for their sole use while they are enrolled, access to well-appointed research rooms and world-class laboratories, generous funding for research consumables and travel during their candidature and access to research seminars and professional development opportunities.
Number of scholarships available	One position
Eligibility	RMIT eligibility criteria are available here. • *A strong background in fluid dynamics and applied mathematics/numerical methods. The latter is not essential but a commitment to learn is.* • *Understanding and experience with development of Computational Fluid Dynamics, including finite volume and spectral methods.* • *An understanding of suspension rheology and continuum mechanics.* • *Some experience in programming, preferably in a high level language (C, C++, Fortran).* • *Excellent English skills, both oral and written, are necessary. For candidates applying from countries where English is not the single official language, proof of English proficiency is needed.* **Location** Melbourne CBD
How to apply	*Please send the following documents to Dr. Daniel Lester on Daniel.lester@rmit.edu.au.* • Cover letter specifically addressing how the candidate complies with the required qualifications for the position • CV including your qualification certificates • Academic transcripts • Name and email addresses of three referees *As the scholarship selection process is very rigorous, candidates that only satisfy the selection criteria above at a moderate level are encouraged not to apply.* Following confirmation of eligibility and suitable, applicants will need to apply directly to RMIT through the standard HDR application process.
Open date	9th Nov. 2020
Close date	30th Nov. 2020

Terms and conditions	This scholarship will be governed by RMIT's University Research Scholarship Terms and Conditions.
Further information	*We seek a highly motivated and quantitatively talented candidate to pursue a PhD project that will develop new and fundamental understanding of how complex multiphase suspensions flow under laminar, transitional and turbulent conditions. This position is part of the "Efficient Pipeline Transport of Highly Concentrated Wastewater Sludges" Linkage Project funded by the Australian Research Council, which aims to investigate the rheology and fluid mechanics of highly concentrated wastewater sludges (HCWS) and develop predictive tools for design and optimization of pipeline transport systems.* *The rheology of HCWS is strongly non-Newtonian and leads to complex flow phenomena in the transition and turbulent regimes. As such, conventional tools and techniques cannot accurately predict the pipe flow dynamics and pumping requirements of HCWS. To overcome these limitations, this PhD project will involve the development, application and validation of novel computational tools for the pipe flow of these complex materials and will involve close collaboration with a research team with extensive experience in the computational modelling and rheology of dense suspension flows.* *A combination of spectral and finite volume Computational Fluid Dynamics (CFD) methods are required to understand and predict transitional and turbulent suspension flow. This problem sits at the cutting edge of scientific enquiry; despite its importance, suspension flow under such conditions has received very little attention to date and is not well understood. The progress to be made in this project will be at the forefront of research in this area.*
Contact	*Dr. Daniel Lester on Daniel.lester@rmit.edu.au.*