PHD POSITION ON DRAG REDUCING LUBRICANT-INFUSED SURFACES

JOB DESCRIPTION

A PhD project is available in the group of Prof Chiara Neto in the School of Chemistry at the University of Sydney on the study of drag reduction by lubricant-infused surfaces. The project is in collaboration with MicroTau Pty Ltd.

1Prof Neto and her group in the Nano Interfaces lab

Surface coatings have the potential to substantially reduce the energy required to drive fluid flow. This project will investigate a family of surfaces called riblets, for the scalable production of highly drag-reducing and anti-fouling coatings through a microprinting technology developed by MicroTau. In the project, the riblets will be designed, fine-tuned based on microfluidic testing and produced to combine drag-reducing and marine anti-fouling properties. The focus will be on connecting material properties to performance in drag reduction and fouling reduction. This PhD project will benefit the larger Future Fellowship project funded by the Australian Research Council and awarded to Prof Chiara Neto.

This project will take place within the Nano-Interfaces Group with a strong collaborative atmosphere between students and postdoctoral fellows. As part of the PhD program, you will interact strongly with the Sydney-based industrial partner MicroTau, thereby gaining valuable transferrable skills. For more details visit https://neto.sydney.edu.au/ and https://www.microtau.com.au/

his scholarship is valued at $35,950 per annum and is tenable for 3.5 years. The successful candidate will also be eligible for a top-up scholarship of $5,500/year, awarded by the NSW Defence innovation Network.

YOUR PROFILE

You have a BSc or BEng Honours degree, with research projects in Mechanical or Chemical Engineering, Material Science or a closely related discipline. You have in depth-knowledge of fluid flow experiments or modelling. You are motivated and enthusiastic about working on the interface between fundamental and applied research. Preferably you have experience with

microfluidic devices, and modelling of interfacial laminar flow. You have the ability to work independently and as a member of a research team, while demonstrating a collaborative attitude.

You are able to review and engage with interdisciplinary studies and are driven by curiosity. You have excellent analytical skills and an analytical mind-set, excellent communication skills, written as well as spoken. English language proficiency is a must and a written test, as well as a scientific presentation, will be part of the interview procedure.

INFORMATION AND APPLICATION

Questions regarding this position can be directed to Prof. Chiara Neto chiara.neto@sydney.edu.au. Applications should be submitted by March 15th, 2022 here: https://www.sydney.edu.au/scholarships/d/phd-scholarship-on-lubricant-infused-surfaces.html

Including contact information for at least two academic references, academic transcript and cover letter, addressing your ability to contribute to microfluidic studies of flow on structured surfaces.