

Research Stipend funded PhD Opportunity: Development of PFAS remediation technologies

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Poly- and perfluoroalkyl substances (PFASs) are synthetic fluorinated chemicals that have been used extensively since the 1950s, are highly resistant to environmental degradation, very mobile in the environment and are screened at extremely low drinking water concentrations. Unfortunately, the majority of existing water treatment technologies are unable to remove PFAS to the desired extent. Treatment technologies that are capable of removing PFAS are prohibitively expensive or are only useful for a very limited lifespan. Additionally, these treatment technologies only serve to concentrate the contaminant. As such, water treatment operators urgently need new water treatment technologies to treat PFAS contaminated water.

This funded PhD project will work with a team to develop a treatment system to completely remove (i.e., defluorinate) PFAS from contaminated waters. This technology will be scalable, such that it can be used to treat significant quantities of contaminated water. The project is a laboratory based project that will be conducted in collaboration with government partner Property NSW and industry partners Arup Pty Ltd, Orica Australia Pty Ltd, Enviropacific Services Pty Ltd and Shimadzu Scientific Instruments (Oceania) Pty Ltd, through an ARC Special Research Initiative grant entitled Development of electrochemically activated sorbents for PFAS defluorination. UNSW has a strong research team investigating the fate and remediation of emerging contaminants, including PFAS. The PhD student will have the opportunity to work in a dynamic research team that includes Professors Denis O'Carroll, Michael Manefield, Naresh Kumar and Stuart Khan as well as Drs. James McDonald and Matthew Lee. The proposed project is interdisciplinary in nature with intensive experimental work. Experience in electrochemistry, biochemistry, environment chemistry, environmental engineering and/or analytical chemistry (gas and liquid chromatography and mass spectrometry) is considered an asset.

The successful candidate will receive a Higher Degree Research Stipend of AUD \$27,596 per year for 3 years funded by UNSW. A successful international candidate will need to satisfy the requirements for a Research Training Program Fee offset or Tuition Fee Scholarship. Please see <https://research.unsw.edu.au/higher-degree-research-programs> for information on your eligibility, competitiveness and PhD entry requirements.

Further information on the project and research stipend may be obtained from Professors Denis O'Carroll (d.ocarroll@unsw.edu.au) and Naresh Kumar (n.kumar@unsw.edu.au). Applicants should submit academic transcripts and a CV to Professors O'Carroll and Kumar.