



PhD scholarship in Water Chemistry and Microbiology

Status: **Archived**

Applications open: 10/10/2019

Applications close: 31/08/2020

About this scholarship

Description/Applicant information

A three year fully funded PhD scholarship is available for an outstanding candidate to conduct research at the interface of Water Chemistry and Microbiology in the School of Molecular and Life Sciences. The aim of this project is to generate an in-depth understanding about the survival mechanisms of microorganisms in chloraminated distribution systems as well as the chemical mechanisms involved in the interaction between bacteria and their metabolites with monochloramine. Chloramination is used as an alternative to chlorine for residual disinfection in water distribution pipelines. The decomposition of monochloramine releases free ammonia which promotes bacterial growth, and leads to unexpected high consumption of oxidants. This exposes the pipeline to the potential growth of *Naegleria fowleri* a highly pathogenic organism, previously responsible for multiple deaths of young children. The PhD candidate will develop bioreactors that allow for simulation of a drinking water system mimicking Western Australian conditions. The aim of these experiments is to understand if the biomass is producing different organic material under different conditions relevant to extreme scenarios in a distribution system. This will give us some insight to how the biomass impacts on monochloramine stability. The PhD candidate will be supervised by experts in Water Chemistry and Treatment, and Microbiology. The water chemistry part will be led by Dr Sebastien Allard, Pr Cynthia Joll and Adjunct Professor Keith Cadee (Former General Manager Water Corporation) and the microbiology part by Emeritus Pr Jean-Claude Block (university of Lorraine, France) and Pr Elizabeth Watkin. The PhD candidate will also work closely with our industrial partners (Water Corporation Western Australia).

Student type

- Future Students

Faculty

- Faculty of Science & Engineering
 - Science courses

Course type

- Higher Degree by Research

Citizenship

- Australian Citizen
- Australian Permanent Resident
- New Zealand Citizen
- Permanent Humanitarian Visa
- International Student

Scholarship base

- Merit Based

Value

The successful candidate will receive a stipend of \$35,000 per annum.

The duration of the award shall be for three years with a maximum possible extension of up to six months (assess on a case by case basis).

Scholarship Details

Eligibility criteria

Candidate for this PhD scholarship is expected to:

- Hold an undergraduate degree in Environmental science, Chemistry, Microbiology or relevant field at a high level (honours) of academic achievement;
- Demonstrate an aptitude for research through their analytical and critical thinking skills;



- Be able to work in a team setting and take responsibility for their individual tasks;
- Be experienced in the use of digital technology and software packages;
- Possess excellent spoken and written communications skills that may be evidenced, for example, through their undergraduate thesis/project work and presentations given;
- Practise well-developed time- and self-management skills with strong personal discipline and drive in their work.

Additionally, the applicant should:

- Preferably have experience in Microbiology; and
- Preferably have experience in Water Chemistry.

Enrolment requirements

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How to apply

Application process

Please email Dr Sebastien Allard (s.allard@curtin.edu.au) an expression of interest with:

- Curriculum vitae
- Academic transcripts
- A brief covering letter (no more than 2 sides A4) that addresses the eligibility criteria. The letter should explain why you are interested in the project and how your skills, attributes and experience make you a good candidate for the award.

Need more information?

Enquiries

Please email all enquires to Dr Sebastien Allard (s.allard@curtin.edu.au)

Further information

For more detail or informal discussion of the research project and/or your suitability, please contact Dr Sebastien Allard (s.allard@curtin.edu.au)