



**BHP**



## **PhD Research Opportunities at Flinders University Adelaide, South Australia**

[Flinders University](#) is seeking PhD students for the projects as part of the program entitled “**Assessing Radionuclides and Developing Frameworks for South Australia’s Environment Surrounding Uranium Mining Sites**”.

Radiation chemistry and environmental radiation has many studies with supporting data, modeling and analysis in Europe and North America. However, comprehensive and long term projects on the existence and movement of radionuclides in Australia’s arid environments are poorly documented and understood. In particular, radon chemistry within various environmental materials is not well understood.

This project builds capacity in nuclear chemistry and environmental radiation sector, and will build links and promote engagement with the mining industry sector and research organisations.

The PhD candidates will examine the role of radon in the environment on mining sites, in particular the solubility of radon gas process liquors and the rate at which radon is exhaled from them, including the partitioning coefficient between liquor and gas phase in realistic conditions. Candidates will also investigate the transmissivity of radon gas through clay barriers of varying thickness and understanding the mobility of other radionuclides through clay and other soil and rock types.

Flinders University has a recognised reputation for research excellence across a range of disciplines and areas of intellectual enquiry. Flinders University has an acknowledged record of working in partnership with other universities, state and federal governments, industry and community to provide scholarship and focussed research solutions to address the challenges of the 21<sup>st</sup> Century. A particular area of research strength and investment within Flinders University is nuclear science and chemistry and related fields in environmental science as part of the Forensic and Analytical Chemistry research area in the [College of Science and Engineering](#). The National Centre for Groundwater Research and Training (NCGRT) has expertise in the broader context to processes in the environmental context. Flinders University has a dynamic and highly active research environment, and the College of Science and Engineering also enjoys strong, long term research collaborations with national facilities such as ANSTO and the Australian Synchrotron in analysis of complex samples. In addition, Flinders University is also a node in the ARC Australian Copper Uranium Industrial Research Hub at Flinders University, led by Professor Pring.

**Starting period: End of 2017**

Applicants will typically have a bachelor degree with first-class honours, or the equivalent (e.g. Masters by Research), with satisfactory research preparation demonstrated. Students must demonstrate English proficiency.

**Skills:** the PhD candidates should have skills in analytical and inorganic chemistry, preferably with experience in radiochemistry and modeling. The student will be trained in the use of equipment and handling of radionuclides.

**Supervision:** [Associate Professor Rachel Popelka-Filcoff](#) and [Professor Allan Pring](#).

**Funding:** The project, part of a three-year program between Flinders University, BHP, the Department of State Development Mining and Petroleum Services Centre of Excellence and environmental radiation and analytical consultants JRHC Enterprises, will educate the next generation of postgraduate students towards employment in the industry. Students can apply for international and domestic [scholarships](#) at Flinders University or may attend through a cotutelle agreement.

**Contact:** Associate Professor Rachel Popelka-Filcoff, School of Chemical and Physical Sciences, Flinders University, GPO Box 2100 Adelaide, SA 5001  
rachel.popelkafilcoff@flinders.edu.au