

UQ Summer or Winter Research Project Description

Please use this template to create a description of each research project, eligibility requirements and expected deliverables. Project details can then be uploaded to each faculty, school, institute, and centre webpage prior to the launch of the program.

Project title:	Imaging and Manipulating Molecular Nanostructures via Scanning Probe Microscopy
Hours of engagement & delivery mode	4 weeks; 20-36 hrs per week. Applicant will be required on-site for the project.
Description:	Scanning tunnelling microscopy and atomic force microscopy can be used to manipulate and build nanoscale structures atom by atom. In this project, students will use a new low-temperature STM/AFM installed in Jacobson's laboratory to image and manipulate single atoms and molecules. Potential targets include light-emitting molecules as single-photon emitters for quantum computation or improved OLEDs and magnetic materials for data storage.
Expected learning outcomes and deliverables:	The student will gain experience with ultrahigh vacuum equipment, scanning probe microscopy, material characterisation techniques, and data analysis.
Suitable for:	This project is open to students with a background in physics, chemistry, or engineering. Familiarity with condensed matter physics is a plus. Enthusiasm for experimental work is a must.
Primary Supervisor:	Dr. Peter Jacobson
Further info:	Discussions with applicants are encouraged, please reach me at: p.jacobson@uq.edu.au Interested students must contact the supervisor/s, prior to submitting an application. Evidence of supervisor support is required to be uploaded as part of the application process.