

## POST-DOCTORAL RESEARCH FELLOW IN PROCESS CONTROL

Faculty of Engineering  
School of Chemical Engineering  
The University of New South Wales (UNSW), Sydney



- One of Australia's leading research & teaching universities
- Vibrant campus life with a strong sense of community & inclusion
- Enjoy a career that makes a difference by collaborating & learning from the best

**At UNSW, we pride ourselves on being a workplace where the best people come to do their best work.**

The School of Chemical Engineering has been delivering excellent teaching and research for over sixty-five years. The research clusters in the school broadly span the areas of Energy, Food and Health, Environmental Technology, Macromolecular and Interfacial Engineering, Product and Process Design, and Process Systems Engineering. It offers degrees in Food Science and Technology, Chemical Engineering and Industrial Chemistry. The school is ranked in the top 37 (QS World Ranking) in Chemical Engineering. For further information about the School, please visit <http://www.engineering.unsw.edu.au/chemical-engineering/>.

The Postdoctoral Research Fellow is required to carry out scientific research on an Australian Research Council (ARC) Discovery Project - "A Distributed Optimization-based Approach to Flexible Plantwide Control using Differential Dissipativity" (DP180101717). The Postdoctoral Research Fellow is expected to undertake the development on distributed differential dissipativity conditions for plantwide contraction and a framework for Distributed Economic Model Predictive Control (DEMPC).

### **About the role**

- Level A – AUD \$93,578– \$100,090 per annum (plus 9.5% superannuation)
- 1 year fixed term contract with possible extension to another 12 months
- Full-time position (35 hours per week)

### **Responsibilities:**

#### **Level A**

To be successful you will have:

- Conduct research (both theoretical development and experimental studies) on the ARC Discovery Project, independently and as part of a team. In particular, carry out detailed developments on (but not limited to):
  - Distributed differential dissipativity conditions for plantwide contraction; and
  - The framework for Distributed Economic Model Predictive Control (DEMPC).
- Perform experimental design and operate advanced laboratory and technical equipment or conduct of advanced research procedures, if required
- Contribute to the writing of scientific papers and reports for international journals and progress reporting to other researchers and industry partners
- Assist with the supervision of research students in the research area where required

- Participate in and/or present at conferences and/or workshops relevant to the project as required. Assist with the coordination of research activities and actively contribute to research outputs to meet project milestones
- Contribute to the preparation of research proposal submissions to funding bodies and actively seek collaboration with industry partners as appropriate
- Contribute occasionally to teaching in relation to his or her research project(s)
- Cooperate with all health and safety policies and procedures of the university and take all reasonable care to ensure that their actions or omissions do not impact on the health and safety of others in the university;

#### Selection Criteria

- A PhD (or soon to be awarded) in Engineering or Mathematics or related area
- Knowledge and research experience with nonlinear control theory, model predictive control, contradiction theory, distributed control and/or Stochastic systems and control (desirable)
- Ability to supervise undergraduate students or equivalent experience in the supervision of junior staff in related projects (desirable)
- Demonstrated knowledge and research experience with process control and modern control theories
- Strong mathematical skills
- Demonstrated ability to conduct independent research with limited supervision
- Demonstrated track record of publications and conference presentations relative to opportunity
- Demonstrated ability to work in a team, collaborate across disciplines and build effective relationships
- Strong interpersonal skills with demonstrated ability to communicate and interact with a diverse range of stakeholders and students
- Knowledge of health and safety responsibilities and commitment to attending relevant health and safety training

**Please apply online at** <http://external-careers.jobs.unsw.edu.au/cw/en/job/495229/postdoctoral-fellow-research-arc>

Pre employment checks required for this position including qualification verification.

For further information about the position, please contact:

**Professor Jie Bao - [j.bao@unsw.edu.au](mailto:j.bao@unsw.edu.au)**

**Applications close:** 18<sup>th</sup> November at 11pm

Find out more about working at UNSW [at https://www.engineering.unsw.edu.au/](https://www.engineering.unsw.edu.au/)

UNSW is an equal opportunity employer committed to diversity

