UNSW SYDNEY | Australia's Global University

Advanced Process Control

School of Chemical Engineering

Process Control Laboratory

Advanced control and monitoring technologies for complex industrial processes

Competitive advantage

- Advanced control of complex industrial processes
- Advanced technology for fault detection and fault tolerant control of industrial processes
- Advanced monitoring and automatic control of mineral processes
- Advanced technology for monitoring and automatic control of aluminium smelting cells

Recent research projects

- A Distributed Optimization-based Approach to Flexible Plantwide Control using Differential Dissipativity Theory (ARC Discovery Project: DP180101717, 2018-2020)
- Advanced Distributed Cell Control for Aluminium Smelting Cells (Industrial Project sponsored by Emirate Global Aluminium, 2018-2020)
- An Integrated Approach to Distributed Fault Diagnosis and Fault-tolerant Control for Plantwide Processes (ARC Discovery Project: DP160101810, 2016-2018)
- Dissipativity based Distributed Model Predictive Control for Complex Industrial Processes (ARC Discovery Project: DP130103330, 2013-2016)
- Advanced Control of Membrane Processes (ARC Discovery Project: DP110101643, 2011-2014)
- Advanced Control of Aluminium Smelting Cells (CSIRO National Research Flagship Project, Project 9B, 2009-2012)

Successful applications

- Advanced online anode current distribution monitoring and analysis techniques (two international patents) (Industrial project)
- Advanced dynamic control technology for paste thickeners for coal preparation and handling (ACARP project)

Facilities and infrastructure

- Process control laboratory
- Honeywell DCS 3000 distributed control systems
- Automatic control pilot plants

Our experts

- Prof. Jie Bao
- Dr. Ray Wang
- Dr. Michael Tippett
- Dr. Yuchen Yao

More information

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