

## New South Wales

### University of Technology, Sydney

**LP0776904** Dr S Kaji-O'Grady; Dr M Kornberger

**Approved Project Title** **The Architecture of Academic Research**

**2007 :** \$ 30,000

**2008 :** \$ 60,500

**2009 :** \$ 30,500

**Primary RFCD** 3101 ARCHITECTURE AND URBAN ENVIRONMENT

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Woods Bagot

**Administering Organisation** University of Technology, Sydney

**Project Summary**

In pursuit of increased and more innovative research there has been substantial expenditure in the construction of research environments yet little independent evaluation of their impact. The results of this project are crucial in determining future best practice in the design and operation of research environments. It will support the Australian design industry to achieve better outcomes in tertiary facilities here and abroad. More broadly, the architectural profession and university sectors will gain critical insights into each other's working methods and needs. Ultimately, this project will help to improve the effectiveness of research in Australian universities.

**LP0776705** Dr JK Kandasamy; Prof S Vigneswaran; Dr HK Shon; Mr A CHANAN

**Approved Project Title** **Cost effective in-line filtration system to improve water quality in rainwater tanks**

**2007 :** \$ 12,813

**2008 :** \$ 25,627

**2009 :** \$ 25,627

**2010 :** \$ 12,813

**Primary RFCD** 2911 ENVIRONMENTAL ENGINEERING

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

Kogarah Council

**Administering Organisation** University of Technology, Sydney

**Project Summary**

This research will provide the basis for developing an affordable and innovative water treatment solution for domestic rainwater collection systems. The main elements of this research are:

- . Provision of a cost -effective submerged membrane operated under gravity to provide water of potable standard.
- . Establishing an adaptive membrane cleaning system using the concept of volume control.
- . Characterisation protocol of membrane fouling and stored rain water.
- . Sizing of a permeate tank for storing treated water through demand management.

This project will increase the use of rainwater tanks, helping available water resources to go further.

## Summary of Linkage Projects Proposals for Funding to Commence in 2007

**LP0776360** Dr BP Kelaher; Dr MJ Bishop; Dr WA O'Connor

**Approved Project Title** **Ecological impacts of QX Oyster disease and its management strategies**

**2007 :** \$ 14,813

**2008 :** \$ 29,627

**2009 :** \$ 29,627

**2010 :** \$ 14,813

**Primary RFCD** 2707 ECOLOGY AND EVOLUTION

APA(I) Award(s): 1

### **Collaborating/Partner Organisation(s)**

Hornsby Shire Council

NSW DPI (Fisheries)

**Administering Organisation** University of Technology, Sydney

### **Project Summary**

QX disease is responsible for mass mortality of oysters, and, as a result, economic and job losses. QX disease also threatens ecosystem services provided by wild oysters, such as biodiversity enhancement and fish production. This project will provide estuarine managers with information about how proposed QX management solutions will impact wild oyster populations and vital ecosystem services. It will also contribute to training of early career researchers in strategies to ensure the sustainable use of Australia's biodiversity. As QX outbreaks appear to be increasing, this research and training is urgently needed to underpin management to ensure long-term sustainability of valuable estuarine resources.

**LP0776312** Dr D Liu; Prof G Dissanayake; A/Prof QP Ha

**Approved Project Title** **A Robotic System for Steel Bridge Maintenance**

**2007 :** \$ 75,000

**2008 :** \$ 132,500

**2009 :** \$ 115,000

**2010 :** \$ 57,500

**Primary RFCD** 2903 MANUFACTURING ENGINEERING

APA(I) Award(s): 3

### **Collaborating/Partner Organisation(s)**

NSW Roads and Traffic Authority (NP, RM & TM Directorate)

**Administering Organisation** University of Technology, Sydney

### **Project Summary**

This research will bring enormous benefits to Australian community by significantly reducing the environmental impact of civil infrastructure maintenance operations, and improving the working conditions of maintenance workers by minimising their exposure to dust containing hazardous materials. Bridges are a key link that supports rural communities. Besides the 426 steel road bridges in NSW, many hundreds steel road/rail bridges and other steel infrastructure in Australia need regular paint stripping and repainting. Australia will gain significant economic and health benefits from commercialising the advanced technologies developed by this project, and become a world leader in developing autonomous systems for infrastructure maintenance.

## Summary of Linkage Projects Proposals for Funding to Commence in 2007

**LP0776980** A/Prof N Zhang; Dr DW Yuen; Dr ZJ Gu

**Approved Project Title** **Development of a Mathematical Model for Chatter Prediction in Multi-Stand Cold Flat Rolling Mills**

**2007 :** \$ 25,000

**2008 :** \$ 50,000

**2009 :** \$ 50,000

**2010 :** \$ 25,000

**Primary RFCD** 2905 MECHANICAL AND INDUSTRIAL ENGINEERING

APA(I) Award(s): 1

### **Collaborating/Partner Organisation(s)**

BlueScope Steel Ltd

**Administering Organisation** University of Technology, Sydney

### **Project Summary**

On the one hand, this project will make a significant contribution to the field of study on dynamics of complex mechanical systems and on the other hand, directly assist the Australian steel industry in further improving quality and productivity and thereby maintaining its competitive edge in the international marketplace. The project will benefit the nation and community in:

- (i) advanced steel manufacturing technology enabling higher rolling speed, production in more advanced thin gauge rolling, and prevention of production breakdowns caused by mill chatter;
- (ii) strengthened competitiveness of the local steel industry resulting in increased exports and employment;
- (iii) enhanced regional economy resulting from improved technologies.