

Summary of Linkage Projects Proposals for Funding to Commence in 2007

New South Wales

The University of Newcastle

LP0775345 Prof KP Galvin; A/Prof B Moghtaderi

Approved Project Title **Dry Processing of Fine Coal Using the Reflux Classifier**

2007 : \$ 50,000

2008 : \$ 40,000

2009 : \$ 40,000

Primary RFCD 2906 CHEMICAL ENGINEERING

Collaborating/Partner Organisation(s)

Australian Coal Research Limited

Ludowici MPE

Administering Organisation The University of Newcastle

Project Summary

New and efficient separation technologies are crucial for developing the concept of Dry Coal Processing. The benefits to the industry of Dry Processing are compelling, with savings in water consumption, and much larger savings in dewatering and transportation of the product. The Reflux Classifier is a new fluidized bed technology developed in Australia using the more conventional water fluidization approach. Already the technology is contributing to Australian exports in the rapidly growing area of mining services. The purpose of this project is to establish its potential for use in the Dry Processing of fine coal. Other benefits of the study include the education and training of researchers in this field.

LP0775378 A/Prof A McCluskey; Dr MC Bowyer; Dr CI Holdsworth; Dr CJ Lennard

Approved Project Title **Chemical listening devices: Novel sensors targeting the clandestine manufacture and transport of illicit drugs and explosives.**

2007 : \$ 139,000

2008 : \$ 119,644

2009 : \$ 120,298

Primary RFCD 2505 MACROMOLECULAR CHEMISTRY

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Australian Federal Police

Administering Organisation The University of Newcastle

Project Summary

There can be no doubt that protecting Australia's borders from the dual threats of terrorism and illicit drugs is of paramount importance to continuation of our well-being and way of life. Our chemical sensors are simple hand-held or remote chemical listening sensors, which will have the ability to sense the presence of characteristic chemical vapours associated with explosives and illicit drugs. The simplicity and low cost of the chemical listening allows for installation at key locations -e.g. transport hubs, shipping containers, airports etc as well as placement within clandestine drug laboratories.

LP0775107 A/Prof B Moghtaderi; A/Prof EM Kennedy; Prof BZ Dlugogorski; Mr N Arthur

Approved Project Title **Development of a novel desalination process**

2007 : \$ 100,000

2008 : \$ 75,000

2009 : \$ 75,000

Primary RFCD 2906 CHEMICAL ENGINEERING

Collaborating/Partner Organisation(s)

Proactive Energy Developments Limited

Administering Organisation The University of Newcastle

Project Summary

The process proposed in this submission provides a simple, flexible and cost effective platform for small-scale desalination applications. The proposed process can be an integral part of a more comprehensive approach to resolve the shortage of freshwater in arid to semi-arid regions of rural Australia. This will contribute to the Federal Government's National Research Priority 1: An Environmentally Sustainable Australia, particularly the priority goal 'Water - a Critical Resource'.

