

# Summary of Linkage Projects Proposals for Funding to Commence in 2008

## New South Wales

### The University of Newcastle

**LP0882841** Prof BZ Dlugogorski; Prof EM Kennedy

**Approved Project Title** **Novel technology to sensitise emulsion explosives**

**2008 :** \$ 132,000

**2009 :** \$ 122,000

**2010 :** \$ 136,000

**Primary RFCD** 2906 CHEMICAL ENGINEERING

#### Collaborating/Partner Organisation(s)

Dyno Nobel Asia Pacific Limited

**Administering Organisation** The University of Newcastle

#### Project Summary

The project will develop a new technology for more efficient and safer extraction of minerals. It will extend the application of emulsion explosives to low-temperatures and will eliminate the heating of emulsion blasting agents during transport. Since mining operations are located in regional areas, the project will bring benefits to local and rural communities. The project will also generate new knowledge on the behaviour and stability of three-phase systems that contain very small gas bubbles. In addition to its fundamental importance, this knowledge can be carried over to food and cosmetic industries to facilitate the development of new products.

**LP0882713** Prof GM Evans; Mr RJ Serje

**Approved Project Title** **Slag Entrainment and Dispersion in Continuous Slab Casting**

**2008 :** \$ 145,721

**2009 :** \$ 120,868

**2010 :** \$ 115,782

**Primary RFCD** 2913 METALLURGY

#### Collaborating/Partner Organisation(s)

BlueScope Steel limited

**Administering Organisation** The University of Newcastle

#### Project Summary

Australia's steel industry employs 75,000 people and has an annual turnover in excess of \$21 billion. However, it produces less than 8 million tonnes of steel per annum which is approximately 7 percent of the world's production. Australia does not have the economies of scale and to be competitive, must invest heavily in new technology and have best workplace practices to generate products that are superior to low cost competitors. This project is focussed on improving product quality through invention of new equipment which also overcomes current operational practices and creates a safer working environment.

**LP0882853** Prof KP Galvin

**Approved Project Title** **Particle Transport and Separation in High Aspect Ratio Inclined Channels**

**2008 :** \$ 50,000

**2009 :** \$ 100,000

**2010 :** \$ 120,000

**Primary RFCD** 2906 CHEMICAL ENGINEERING

APA(I) Award(s): 1

#### Collaborating/Partner Organisation(s)

Australian Coal Research Limited

Anglo Coal Australia

**Administering Organisation** The University of Newcastle

#### Project Summary

This project will be of benefit to the Australian coal and mineral processing industries, worth tens of billions of dollars to the Australian economy each year. The objective is to establish new options for the processing of particles as large as 50mm, and smaller than 50 microns in size, and hence significantly extend the operating size range of the Reflux Classifier. The development of new resources, especially those of poorer grade, requires more effective separation technology. Success in this project will significantly benefit the end users of the technology and also contribute to Australia's Mining Services industry.

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**LP0882285** A/Prof A McCluskey; Prof RB Gasser; Dr JA Sakoff

**Approved Project Title** **The discovery and validation of novel drug classes against parasites with the potential for major economic impacts**

**2008 :** \$ 250,000

**2009 :** \$ 220,000

**2010 :** \$ 200,000

**Primary RFCD** 2503 ORGANIC CHEMISTRY

APA(I) Award(s): 2

**Collaborating/Partner Organisation(s)**

Genetic Technologies Limited

**Administering Organisation** The University of Newcastle

**Project Summary**

This project will develop a quality scientific and technological program in national priority areas, leading to a strong basic research, new concepts and the enhanced international collaborative links; strengthen links between basic and applied research, and academia and industry; develop excellence via pan-Australian collaborations, resulting in a more efficient use of resources in a national and international context; enhance the skills-base in biology, biotechnology and chemistry; increase global visibility with increased investment in Australian science; improve animal welfare and production via improved control of infectious diseases; producing commercial products with benefits to agricultural producers in regional & rural communities.

**LP0882869** Dr GJ Suaning; Prof NH Lovell

**Approved Project Title** **Micromachined electrode arrays for improved performance and manufacturability of cochlear neuroprostheses**

**2008 :** \$ 135,000

**2009 :** \$ 115,000

**2010 :** \$ 110,000

**Primary RFCD** 2915 BIOMEDICAL ENGINEERING

**Collaborating/Partner Organisation(s)**

Cochlear Limited

**Administering Organisation** The University of Newcastle

**Project Summary**

The cochlear implant for the deaf, and bionic eye for the blind are two devices where Australian researchers possess considerable expertise. Benefit can be had from collaborative research between these non-competing scientific fields. Microelectrodes is an area wherein overcoming the unique requirements of one field offers new opportunities in the other. We aim to enhance Australia's leadership in cochlear implants by applying decade-long research on electrode fabrication techniques for the bionic eye into 3D shapes for the cochlea. Furthermore, we aim to further improve the effectiveness, safety and reliability of the cochlear implant while facilitating increased electrode numbers.