Summary of Linkage Infrastructure Applications for Funding to Commence in 2006

New South Wales

The University of Newcastle

LE0668510 Dr PC Dastoor; Prof J O'Connor; Dr EJ Wanless; Dr MW Radny; Prof RN Lamb; Dr P Meredith; A/Prof MJ Ford; Dr GE Gadd; Dr PJ Evans; Prof GG Wallace; Dr PC Innis; Dr AI Minett; Dr JR Reimers; Prof MJ Crossley; Em/Prof NS Hush; Dr K Ostrikov; Prof DR McKenzie

Approved Project Title **Nanostructure Deposition Facility**

2006 : $180,240

Primary RFCD 2402 THEORETICAL AND CONDENSED MATTER PHYSICS

Partner Organisation(s)
The University of Newcastle
The University of Queensland
The University of Sydney
University of Wollongong
ANSTO
The University of New South Wales
University of Technology, Sydney

Administering Institution The University of Newcastle

Project Summary

New electronic devices and materials that exploit the properties of nanostructured surfaces are predicted to have a major impact on everyday life in areas such as information technology, biotechnology and healthcare. The Nanostructure Deposition Facility (NDF) is a unique facility, providing access to the highly specialised deposition equipment required to fabricate these important nanostructured surfaces from a variety of materials. The NFDL represents a major new joint venture between seven Australian institutions and will provide these researchers with the essential tools for developing new electronic devices, biosensors, detectors and solar cells based on nanotechnology.

LE0668449 Dr SW Donne; Prof GA Lawrance; Dr RC Burns; A/Prof EM Kennedy; Prof BZ Dlugogorski; Dr GV Franks; Dr PG Lye; Dr TC Brown; Dr PS Thomas; A/Prof AS Ray

Approved Project Title **Advanced Surface and Porosity Characterization Facility**

2006 : $158,000

Primary RFCD 2501 PHYSICAL CHEMISTRY (INCL. STRUCTURAL)

Partner Organisation(s)
The University of Newcastle
The University of New England
University of Technology, Sydney
Particle and Surface Sciences, Pty Ltd

Administering Institution The University of Newcastle

Project Summary

Material properties and processing play a significant role in many Australian industries. The benefits of research with this infrastructure to the greater community lies in the technological development of superior materials and processes to support the continued development of these industries. In addition to technological advances, this will have economic benefits due to improved business market share and profitability in these industries, as well as educational development through completion of high quality research higher degree students.

Summary of Linkage Infrastructure Applications for Funding to Commence in 2006

LE0668400 Dr RN Drysdale; Dr ID Goodwin; Dr SW Franks; Dr JD Woodhead; Dr J Zhao

Approved Project Title **A high-throughput stable isotope ratio mass spectrometer for water resource management and climate change studies**

2006 : $100,000

Primary RFCD 3001 SOIL AND WATER SCIENCES

Partner Organisation(s)
The University of Newcastle
The University of Melbourne
The University of Queensland

Administering Institution The University of Newcastle

Project Summary

Cave speleothems are highly sensitive to climate and are widely used to investigate past climate variability. Many researchers in Australia are now employing speleothems to find out more about the long-term behaviour of the Australian climate system, especially regarding ENSO. However, progress is inhibited by a lack of appropriate instrumentation capable of meeting the unique demands of speleothem research. Our new mass spectrometer will provide precise, rapid and low-cost isotope analyses of speleothem samples, and in doing so generate exciting and important palaeoclimate data, particularly in the area of pre-instrumental rainfall histories.

LE0668469 A/Prof EH Kisi; Dr C Curfs; Dr DP Riley; A/Prof BV King; Prof Dr T Maschmeyer; A/Prof EM Gray; Dr RF Garrett; Mr I Madsen; Dr SA Schmid

Approved Project Title **The Rapid Kinetics Research Facility - an Integrated system for rapid kinetic studies of materials using synchrotron radiation**

2006 : $195,000

Primary RFCD 2914 MATERIALS ENGINEERING

Partner Organisation(s)
The University of Newcastle
The University of Sydney
Griffith University
Australian Synchrotron Research Program (ASRP)
CSIRO - Minerals

Administering Institution The University of Newcastle

Project Summary

The Rapid Kinetics Research Facility will provide Australian researchers with the tools to follow and understand very rapid processes within advanced materials. This will greatly assist in: i) the development of more efficient materials processing technologies, ii) the development of advanced catalysts able to neutralize pollutants and reduce the energy cost of industrial processes, iii) the development of viable hydrogen fuel storage media and iv) the training of young Australian researchers in advanced methods of materials characterization.

LE0668446 A/Prof SO Moheimani; Prof IR Petersen; Prof GC Goodwin; Prof RH Middleton; Prof M Fu; Dr VA Ougrinovski; A/Prof HR Pota; Dr AJ Fleming; Dr SR Schofield

Approved Project Title **Nano-positioning facility for nano-scale measurement and manipulation**

2006 : $530,000

Primary RFCD 2903 MANUFACTURING ENGINEERING

Partner Organisation(s)
The University of Newcastle
The University of New South Wales

Administering Institution The University of Newcastle

Project Summary

Nanotechnology is the science of understanding and control of matter at dimensions of 100 nanometers or less. Encompassing nanoscale science, engineering, and technology, nanotechnology involves imaging, measuring, modeling, and manipulation of matter at this level of precision. An important aspect of research in nanotechnology involves precision control and manipulation of devices and materials at a nanoscale, i.e. nanopositioning. The primary goal of this proposal is the establishment of an experimental nanopositioning research facility to enable the development of a new generation of nanopositioners. Establishment of the facility will give Australia's nanotechnology researchers a unique enabling facility in this high-tech field.

Summary of Linkage Infrastructure Applications for Funding to Commence in 2006

LE0668440 Prof RJ Scott; Prof IW Dawes; Prof RJ Trent; Prof NH Hunt; Prof PL Bergquist; Prof MS Baker; Prof PR Dunkley; Dr R Lin; Prof P Gibson; A/Prof AT Sim

Approved Project Title **Advanced technology for transcriptomics, genomics and gene mapping**

2006 : $850,000

Primary RFCD 2702 GENETICS

Partner Organisation(s)

The University of Newcastle
The University of New South Wales
The University of Sydney
Macquarie University

Administering Institution The University of Newcastle

Project Summary

Acquistion of the equipment requested in this application will maintain the expertise developed by researchers within New South Wales and attract and retain exceptional individuals who can contribute to our understanding of how genes interact with one another. The benefit of such an enhances facility will be the delivery of a better functional understanding of health and disease which will provide both community and national benefits. The primary purpose of this LIEF application is to standardize approaches to the study of genome function across the nodes of the Ramaciotti facility and to expand the capacities of the facility to cope with the increased demand in this technology.