

Summary of Linkage Infrastructure, Equipment and Facilities Proposals

New South Wales

The University of New South Wales

LE0775739 Prof MA Adams; Dr SD Maleknia; Dr J Jankowski; Prof RE McMurtrie; Prof D Eamus; Prof JP Conroy; Prof H Rennenberg; Dr MM Barbour; Prof H Griffiths; Prof TE Dawson; Dr E Dreyer; A/Prof IM Suthers; Prof CG Skilbeck; Dr BP Kelaher; Prof D Tissue

Approved Project Title Environmental Research Isotope Ratio Mass Spectrometer (ERIRMS)

2007 : \$ 135,000

Primary RFCD 2707 ECOLOGY AND EVOLUTION

Partner Organisations & Collaborating Organisations

University of Western Sydney

University of Technology, Sydney

Administering Organisation The University of New South Wales

Project Summary

The projects supported by this facility are essential to: sustainable management of Sydney's surface and groundwater; understanding food webs and trophic interactions in Sydney Harbour and elsewhere on the eastern seaboard; developing predictive models for the impacts of climate change on Australia's forests, especially carbon sequestration and water yield; understanding the trade-offs involved in managing fire risks through prescribed burning, especially trade-offs involving carbon and water; and understanding and predicting air quality and the effects of emissions from cars, industry, fires and natural sources.

LE0775513 Prof AA Adesina; Prof GH Fleet; Prof PL Rogers; A/Prof TQ Pham; Dr FP Lucien; A/Prof EM Kennedy; A/Prof JC Mackie; Dr SW Donne; Prof WS Price

Approved Project Title Advanced Process Tomography Research Facility for Multiphase System Studies

2007 : \$ 400,000

Primary RFCD 2906 CHEMICAL ENGINEERING

Partner Organisations & Collaborating Organisations

The University of Newcastle

University of Western Sydney

Administering Organisation The University of New South Wales

Project Summary

The establishment of an advanced process tomography facility at UNSW has several important national benefits, including; increased capacity of the collaborating institutions to train highly qualified personnel to meet new and growing demands in the processing industries; the transfer of research-based cheap and efficient technologies to our industries to enhance their position in a competitive global market; the improvement in our culture and living standards through superior and inexpensive food, biomedical, water, environmental, materials and military products; and the strengthening of Australian position, through international linkage projects, as a world leader in the development of novel processing technologies.

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LE0775548 Prof R Amal; Prof GM Lu; Dr GS Kannangara; Dr VK Pareek; Dr K Chiang; Dr JA Scott; Dr AJ Smith; A/Prof C Barner-Kowollik; Dr AS Milev; Dr NH Tran

Approved Project Title **Advanced characterisation facilities for functional nanostructured materials**

2007 : \$ 180,000

Primary RFCD 2918 INTERDISCIPLINARY ENGINEERING

Partner Organisations & Collaborating Organisations

The University of Queensland
University of Western Sydney
Curtin University of Technology

Administering Organisation The University of New South Wales

Project Summary

A critical factor that enhances frontier research is a set of advanced core research experimental facilities for material characterisation purposes. The proposed equipment aims to: (1) provide research facilities for advanced nanomaterial research; (2) improve national competitiveness and growth in a knowledge-based economy; and (3) foster local talented researchers in order to meet the strategic needs of the nation for a sustainable environment. These activities will revitalise Australia's leading role in creating new technologies with particular relevance to using advanced nanostructures for the production of clean air and water, and sustainable energy alternatives.

LE0775602 A/Prof MG Burton; Prof JW Storey; Dr MR Cunningham; A/Prof AJ Green; Dr PJ Barnes; A/Prof MJ Wardle; Prof Y Fukui; Prof Dr J Stutzki

Approved Project Title **A ground station for the NANTEN2 sub-millimetre wave telescope**

2007 : \$ 100,000

Primary RFCD 2401 ASTRONOMICAL SCIENCES

Partner Organisations & Collaborating Organisations

The University of Sydney
Macquarie University
University of Nagoya
University of Cologne

Administering Organisation The University of New South Wales

Project Summary

Australia has a tradition of excellence in astronomy. Inspired by our natural wonder about the cosmos, it helps stimulate public interest in science, so leading to the training of highly skilled graduates. This in turn drives development of technologies needed to pursue the science. The nation has invested in technology for millimetre-wave astronomy, building the first interferometer in our hemisphere. We aim to capitalise on this investment, leveraging it to access a frontline facility under construction on the Atacama plateau in Chile. This will help nurture a vigorous radio-science community, one able to actively participate in the billion-dollar investment being made by the international community in astronomical facilities there.

LE0775746 A/Prof M Guilhaus; Prof IW Dawes; Prof PD Steinberg; Dr M Manefield; Prof K Ho

Approved Project Title **GC/MS facility for medical, bioanalytical and environmental research**

2007 : \$ 102,000

Primary RFCD 2703 MICROBIOLOGY

Partner Organisations & Collaborating Organisations

Administering Organisation The University of New South Wales

Project Summary

The research will contribute to the bioremediation of heavily polluted sites in Sydney and the knowledge gained and the technology developed will be applicable to sites all over the world. Fundamental knowledge in Systems Biology will have applications to advance Australian export industries based on fermentation. Advances in chemical ecology and biotechnology will impact in areas such as contact lenses, implants, therapeutics and water treatment. Probing pituitary hormone action will lead to greater understanding of health issues such as abnormal body composition, obesity and diabetes.

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LE0775489 Prof VJ Johnson; A/Prof J Mendelssohn; Mr AM Wells; Prof NC Brown; A/Prof J Bennett; Dr DS Losche; Mr H Amos; Dr CM De Lorenzo; Prof R Benjamin; Dr CD Moore; Dr AJ Callaway; Dr A Marsh; Dr D Palmer; Dr CM Speck; Mr R Choate; Mr R Butler; Dr A Gray; Ms J Volker; Ms M Burn; Mr AD Bond; Ms AD Ryan; Ms S Schmocker; Ms EH Ellis; Mr RA Neville; Ms JM Ewington

Approved Project Title **Dictionary of Australian Artists Online, DAAO: public release version**

2007 : \$ 300,000

Primary RFCD 4102 VISUAL ARTS AND CRAFTS

Partner Organisations & Collaborating Organisations

The University of Sydney
Monash University
The University of Adelaide
National Gallery of Australia
National Library of Australia
Art Gallery of NSW
State Library of NSW
Queensland Art Gallery

Administering Organisation The University of New South Wales

Project Summary

The DAAO is already positioned as the sole system for the creation and discovery of research into art history in Australia. The DAAO will provide global exposure of Australian research and artists with tangible benefits both economically for cultural industries (including the art industry and tourism) and socially. It will also increase the breadth and depth of general knowledge of Australian art, contributing to the development of national identity through the diversity and richness of Australia's visual cultures.

LE0775511 Dr SS Li; Dr PA Walls; Prof HK Liu; A/Prof MJ Hoffman; A/Prof M Ferry; Prof CC Sorrell; Dr AV Pan; Prof O Ostrovski; Prof PR Munroe; Dr GS Srzednicki; Dr Y Liu; A/Prof B Ben-Nissan; A/Prof TQ Pham; Dr GL Heness; Dr ZP Guo; Dr ER Vance; Dr Z Chen

Approved Project Title **Laser Flash Thermophysical Properties Analyzer for the Development of Advanced Materials, Food Processing Technologies and Biomedical Components**

2007 : \$ 300,000

Primary RFCD 2914 MATERIALS ENGINEERING

Partner Organisations & Collaborating Organisations

Australian Nuclear Science & Technology Organisation (ANSTO)
University of Wollongong

Administering Organisation The University of New South Wales

Project Summary

The Australian's energy, mining, metallurgical and food industries spearhead the advancement of technologies in the global competitive market. They are the locomotive of Australian economy's strength. Future progress of these industries will be largely driven by advances in materials and food processing technology. The installation of the proposed facility will add a new dimension to high-level research performance and significantly enhance the capability for characterization of various forms of materials, foods and biomedical components in Australia. The continual development of advanced materials and food processing technology will potentially provide a sustainable means for meeting the increasing global challenge for the industries.