Summary of Successful Proposals for Linkage Infrastructure, Equipment and Facilities for Funding Commencing in 2012 – Collaborator Led Projects

LE120100011
Gaudin, Prof Christophe; Cassidy, Prof Mark J; Randolph, Prof Mark F; White, Prof David J; Sloan, Prof Scott W; Carter, Prof John P; Indraratna, Prof Buddhima N; Williams, Prof David J; Kodikara, A/Prof Jayantha K; Jaksa, A/Prof Mark B; Krabbenhoft, A/Prof Kristian; Fourie, Prof Andries B; Merfield, Dr Richard S; Rujikiatkamjorn, Dr Cholachat; Geng, Dr Xueyu; Pedroso, Dr Dorival d; Scheuermann, Dr Alexander; Bouazza, Prof Abdelmalek

Approved Project Title
The national geotechnical centrifuge facility
2012 - $700,000.00
Total $700,000.00

Primary FoR 0905 CIVIL ENGINEERING

Partner/Collaborating Eligible Organisation(s)
Monash University, The University of Adelaide, The University of Newcastle, The University of Queensland, University of Wollongong

Administrating Organisation The University of Western Australia

Project Summary
A new geotechnical centrifuge will enable the modelling of complex offshore and onshore structures. The new facility will support many geotechnical fields, associated with the economical and geographical development of Australia, and ensure that Australia will maintain its leadership within the international physical modelling community.

LE120100054
Gillanders, Prof Bronwyn M; Robinson, Prof Sharon A; Walker, A/Prof Stewart; Kennedy, Prof Martin J; Watling, A/Prof Jennifer R; Soole, A/Prof Kathleen L; Tibby, Dr John; Guan, Dr Huade W; Cooper, Prof Alan; Ball, Prof Andrew S

Approved Project Title
Stable isotope analysis of environmental and physiological samples
2012 $420,000.00
Total $420,000.00

Primary FoR 0402 GEOCHEMISTRY

Partner/Collaborating Eligible Organisation(s)
Bio Innovation SA, The Flinders University of South Australia, University of Wollongong

Administrating Organisation The University of Adelaide

Project Summary
Mass spectrometers capable of isotope analysis are essential tools for the earth and environmental sciences, physiology and palaeoecology. This project will provide mass spectrometers for both laboratory and field conditions which will ensure Australia remains at the forefront of international research, attract collaborations and lead to outcomes of global significance.
Approved Project Title
Humanities in the digital age: infrastructure for Australian literary studies, publishing studies, and Aboriginal and Torres Strait Islander studies

2012 $270,000.00

Total $270,000.00

Primary FoR 2005 LITERARY STUDIES

Partner/Collaborating Eligible Organisation(s)
Australian Institute of Aboriginal and Torres Strait Islander Studies, James Cook University, Monash University, Queensland University of Technology, The Flinders University of South Australia, The University of New South Wales, The University of Sydney, The University of Western Australia, University of Wollongong

Administering Organisation The University of Queensland

Project Summary
AustLit is a comprehensive digital resource providing quality, searchable information for researchers, teachers, students and the general public in the broadly defined areas of Australian literature and print culture. New funding will support enhanced content creation and research capacity and the transition of AustLit to an open access platform

Approved Project Title
Investigating materials on the atomic scale using 3-dimensional atom probe tomography

2012 $675,000.00

Total $675,000.00

Primary FoR 0912 MATERIALS ENGINEERING

Partner/Collaborating Eligible Organisation(s)
La Trobe University, Monash University, Swinburne University of Technology, The Flinders University of South Australia, University of Wollongong

Administering Organisation Deakin University

Project Summary
A facility capable of examining the position of individual atoms inside a material will be established to serve the Australian research community. This information will be used to design engineering alloys with improved strength, biocompatibility and reduced environmental footprints. It will also be used to characterise alloys produced by new green technologies.
Approved Project Title
Joint processing facility for the production of far-from-equilibrium alloy structures

2012 $200,000.00

Total $200,000.00

Primary FoR 0912 MATERIALS ENGINEERING

Partner/Collaborating Eligible Organisation(s)
The University of New South Wales, University of Wollongong

Administering Organisation The University of Sydney

Project Summary
One of today's research frontiers is to design materials with tailored physical, chemical and mechanical properties which would be suitable for new uses. Equipment for melt spinning and high-pressure torsion will be used to process materials to achieve novel microstructures. These will pave the way to new types of advanced materials for future applications in lightweight transport, energy technologies and biomaterials.

Approved Project Title
A flexible high throughput analytical system for psychopharmacology and drug discovery

2012 $150,000.00

Total $150,000.00

Primary FoR 1701 PSYCHOLOGY

Partner/Collaborating Eligible Organisation(s)
The University of New South Wales, University of Wollongong

Administering Organisation The University of Sydney

Project Summary
A sensitive new liquid chromatography mass spectrometer will enable a team of leading researchers to detect drugs of abuse and therapeutic drugs in the brain and body as well as levels of hormones, peptides and neurotransmitters. This will enhance a large number of projects examining new treatments for addictive disorders and mental illness.
LE120100006
Keall, Prof Paul J; Jackson, A/Prof Michael; Rozenfeld, Prof Anatoly B; Barton, Prof Michael B; Greer, A/Prof Peter B; Vial, Dr Philip J; Baldock, Prof Clive; Metcalfe, Prof Peter E; Thwaites, Prof David I; Kuncic, A/Prof Zdenka; Holloway, Dr Lois C; Bosi, Dr Stephen G; Eslick, Dr Enid M; Downes, Mr Simon J

Approved Project Title
An adaptable and dedicated linear accelerator for medical radiation research

2012 $600,000.00
Total $600,000.00
Primary FoR 0903 BIOMEDICAL ENGINEERING

Partner/Collaborating Eligible Organisation(s)
Liverpool Hospital, Prince of Wales Hospital
The University of New South Wales, The University of Newcastle, University of Wollongong

Administering Organisation The University of Sydney

Project Summary
Leading radiation scientists developing innovative methods and devices for treating cancer patients will collaborate in future research using this highly adaptable linear accelerator for medical radiation research. Innovations in tumour targeting, better patient safety, new medical devices and improved cancer outcomes are expected.

LE120100215
Moheimani, Prof S. O. Reza; Kisi, Prof Erich H; Petersen, Prof Ian R; Alici, Prof Gursel; Huntington, Prof Elanor H; Behrens, Dr Sam; Harb, A/Prof Charles C; Pota, A/Prof Hemanshu R; Li, A/Prof Weihua; Welsh, Dr James S; Summers, Dr Terrence J

Approved Project Title
Facility for characterisation of engineered microelectromechanical systems

2012 $300,000.00
Total $300,000.00
Primary FoR 0906 ELECTRICAL AND ELECTRONIC ENGINEERING

Partner/Collaborating Eligible Organisation(s)
Commonwealth Scientific and Industrial Research Organisation
The University of New South Wales, University of Wollongong

Administering Organisation The University of Newcastle

Project Summary
This facility will provide Australian microelectromechanical (MEMS) researchers with a vital, world-class, capacity for characterisation of micro-machined devices and transducers, enabling them to compete internationally in this emerging field.
Approved Project Title
A prototype Scanning Helium Atom Microscope (SHeM) for soft materials

2012 $250,000.00

Total $250,000.00

Primary FoR 0204 CONDENSED MATTER PHYSICS

Partner/Collaborating Eligible Organisation(s)
University of Cambridge
The Flinders University of South Australia, University of Wollongong

Administering Organisation The University of Newcastle

Project Summary
The scanning helium atom microscope (SHeM) has been a tantalising prospect since the birth of quantum physics. The SHeM would have unparalleled resolution and would be completely non-damaging; potentially revolutionising the imaging of soft delicate materials. This project will develop the first SHeM instrument in Australia to study soft matter.

Approved Project Title
Sensitive and multinuclear: a dedicated facility for high-throughput characterisation of small molecules.

2012 $320,000.00

Total $320,000.00

Primary FoR 0601 BIOCHEMISTRY AND CELL BIOLOGY

Partner/Collaborating Eligible Organisation(s)
Commonwealth Scientific and Industrial Research Organisation
University of Wollongong

Administering Organisation The University of New South Wales

Project Summary
This project will provide new cutting edge nuclear magnetic resonance equipment will enhance an existing shared analysis facility based at University of New South Wales. The new equipment will underpin research in polymers, neuropharmacology, the biological basis of inherited disease, nanomedicine, bioactive compounds and toxins.
Approved Project Title
A magnetic property measurement facility for the development of advanced materials and biomedical technologies in the Sydney basin

2012 $375,000.00

Total $375,000.00

Primary FoR 0912 MATERIALS ENGINEERING

Partner/Collaborating Eligible Organisation(s)
Australian Nuclear Science and Technology Organisation
The University of Sydney, University of Western Sydney, University of Wollongong

Administering Organisation The University of New South Wales

Project Summary
The measurement of magnetic properties is important in the study both of magnetic and electronic materials and biological systems. This new equipment will support a diverse array of high impact research, spanning the fundamental to the applied, and will bring together complementary expertise from multiple disciplines and institutions.

Approved Project Title
Epitaxial growth facility for advanced materials

2012 $1,000,000.00

Total $1,000,000.00

Primary FoR 0912 MATERIALS ENGINEERING

Partner/Collaborating Eligible Organisation(s)
The University of Sydney, University of Western Sydney, University of Wollongong

Administering Organisation The University of New South Wales

Project Summary
An advanced materials fabrication facility accessible to all Australian researchers will be established. This will allow crystal growth at the atomic level for novel materials with applications including fundamental physics, nanocomposites, energy storage and conversion systems, and solar cells.
Approved Project Title
A comprehensive gas/vapour sorption facility for the fast advancement of decarbonised energy technologies

2012 $230,000.00

Total $230,000.00

Primary FoR 0912 MATERIALS ENGINEERING

Partner/Collaborating Eligible Organisation(s)
The University of Sydney, University of Wollongong

Administering Organisation The University of New South Wales

Project Summary
Solutions to clean energy production, storage and use are critical to Australia’s prosperity, yet there is a significant lack of targeted research facilities for the development of the highly needed materials and technologies for powering a sustainable Australia. This facility will bring research efforts closer to practical solutions.