

Summary of Linkage Infrastructure, Equipment and Facilities Proposals

South Australia

The University of Adelaide

LE0989374 Prof JH Bowie; Prof A Ball; Prof DA Brooks; Prof MA Buntine; Dr T Chataway; Dr P Hoffmann; Prof WD Lawrance; Prof AF Lopez; Prof SR McColl; Prof JO Miners; A/Prof NH Voelcker

Approved Project Title South Australian High-Resolution and Ion-Mobility Mass Spectrometry Facility

2009 : \$ 550,000

Primary RFCD 2503 ORGANIC CHEMISTRY

Partner Organisations & Collaborating Organisations

The University of Adelaide

The Flinders University of South Australia

University of South Australia

Hanson Institute (IMVS)

CSIRO Health Flagship

Administering Organisation The University of Adelaide

Project Summary

The analytical facility will enhance (i) fundamental research to understand the mechanisms of the reactions of charged species with neutral molecules, and (ii) the provision of structural information, including the precise atomic composition of any molecule, small or large. Research supported by this facility includes (a) nanotechnology, including supramolecular chemistry, (b) bioscience: cancer research, neurodegenerate diseases (e.g. Parkinson's disease) osteoarthritis, inflammation, cardiac diseases and synthetic approaches to anticancer and other drugs.

LE0989747 Dr TW Kee; Prof TM Monro; Prof D Abbott; Dr BM Fischer; Prof MA Buntine; Dr GF Metha; Prof JA Carver; Dr DA Beattie; Prof CA Prestidge; Prof RA Lewis; Dr DG Lancaster; Dr U Bach

Approved Project Title Ultrafast Dynamics Measurement Facility for the Physical, Biochemical, and Materials

Sciences

2009 : \$ 400,000

Primary RFCD 2501 PHYSICAL CHEMISTRY (INCL. STRUCTURAL)

Partner Organisations & Collaborating Organisations

The University of Adelaide

University of South Australia

Defence Science & Technology Organisation (DSTO)

University of Wollongong

Monash University

Administering Organisation The University of Adelaide

Project Summary

The term "ultrafast revolution" describes the transformations in science due to ultrafast laser technology. Today, ultrafast lasers are used in surgery, nanomaterial fabrication, biomedical imaging, spectroscopic investigations, and new applications are still emerging. This facility will draw together leading chemists, physicists, and engineers to investigate key ultrafast processes and phenomena in the physical, biochemical and material sciences. This is of strategic importance to keep Australia at the global forefront for scientific endeavours, supporting new research and commercial opportunities. This facility will also produce highly trained graduates, who will find employment in industry throughout Australia and globally.

Summary of Linkage Infrastructure, Equipment and Facilities Proposals

LE0989336 Dr CJ Sumby; Prof JA Carver; Prof JC Wallace; Asst Prof M Hrmova; Prof A Pring; Prof AD Abell; Dr GW Booker; Prof MI Bruce; Dr J Brugger; Dr CM Ford; Dr HH Harris; Dr JC Morris; Prof JC Paton; Dr DJ Peet; Dr SM Pyke; Dr KE Shearwin; Dr RI Menz; Dr CA Abbott; Dr PA Anderson; Dr MH Brown; Dr MR Johnston; Dr KA Schuller; Prof AF Lopez; Dr SM Pitson; Prof SF Lincoln; Prof RA McKinnon

Approved **The South Australian Facility for Small and Large Molecule X-Ray Diffraction Structure**

Project Title **Determination**

2009 : \$ 560,000

Primary RFCD 2501 PHYSICAL CHEMISTRY (INCL. STRUCTURAL)

Partner Organisations & Collaborating Organisations

The University of Adelaide

The Flinders University of South Australia

South Australian Museum

Institute of Medical and Veterinary Science

University of South Australia

Administering Organisation The University of Adelaide

Project Summary

The precise three dimensional arrangement of atoms within molecular and macromolecular structures defines their function. Thus, the discovery, development and application of biological compounds, catalysts, nanodevices and pharmaceuticals require X-ray diffraction structure determination. These endeavours underpin the conversion of academic research into real benefits for the community and are critical for the competitiveness of Australian industry, national productivity and economic growth. This application seeks to provide a facility for multidisciplinary scientific development that will enhance academic-industrial collaboration. This will position SA research community for scientific breakthroughs that benefit the Australian community.