

**New South Wales**

**The University of New South Wales**

**LP0883262** Prof C Barner-Kowollik; Dr PJ Barker

**Approved Project Title** **Establishing In-Depth Understanding of Molecular Degradation Processes in Acrylic Based Polymer Coil-Coatings for Domestic Roofing Applications**

**2008 :** \$ 30,000

**2009 :** \$ 43,500

**2010 :** \$ 31,000

**2011 :** \$ 17,500

**Primary RFCD** 2505 MACROMOLECULAR CHEMISTRY

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

BlueScope Steel Research

**Administering Organisation** The University of New South Wales

**Project Summary**

The national benefit is multipronged: (i) BlueScope Steel will maintain its technology leadership through continued innovation by taking advantage of the scientific insights that the project delivers for the introduction of next generation long lasting coil coatings for steel, based on an environmentally friendly production processes. (ii) The application of mass spectrometry for the analysis of polymer degradation has been pioneered by the CI and BlueScope Steel. The project will demonstrate the power of this technique and secure Australia's place at the forefront of molecular polymer degradation research. (iii) The project has a strong educational component, training a PhD student at the interface of application and fundamental research.

**LP0883813** A/Prof LE Bilston; Ms J Brown; Dr J Hatfield

**Approved Project Title** **Optimising protection for motor vehicle rear seat occupants**

**2008 :** \$ 52,137

**2009 :** \$ 104,275

**2010 :** \$ 104,275

**2011 :** \$ 52,137

**Primary RFCD** 2915 BIOMEDICAL ENGINEERING

APA(I) Award(s): 1

APDI Ms J Brown

**Collaborating/Partner Organisation(s)**

NSW Road Safety Centre, Roads and Traffic Authority of NSW

**Administering Organisation** The University of New South Wales

**Project Summary**

Road trauma is a leading cause of death and disability for Australians under 45 years of age. Recent technological advances in vehicle safety have focussed on drivers and front seat passengers, leaving the rear seat lagging behind. This project will address gaps in protection for rear seat passengers, including increasing correct use of child restraints for young passengers from non-English speaking families, and evaluating new and existing technologies for older passengers.

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

**LP0883655** Prof R Cavicchioli; Dr T Thomas; A/Prof M Guilhaus; Prof PR Munroe; A/Prof V Chen  
**Approved Project Title** **Improving the sustainability of Australia's water resources: an effective approach for diagnosing and treating foulants on water recycling membrane filters**  
**2008 :** \$ 204,606  
**2009 :** \$ 369,778  
**2010 :** \$ 360,198  
**2011 :** \$ 195,025  
**Primary RFCD** 2708 BIOTECHNOLOGY

### **Collaborating/Partner Organisation(s)**

Aeris Technologies Ltd

**Administering Organisation** The University of New South Wales

### **Project Summary**

By determining ways to diagnose and treat fouling problems we will have effectively solved a critical problem in the water recycling industry. By creating more efficient and sustainable ways of using water, we will transform the effectiveness of a wealth of Australian industries that increasingly rely on the efficient use of water (e.g. mining, agriculture, textiles, energy). By reducing the demand for water (by effectively recycling it), and the energy requirements (by efficiently recycling it), we will increase national wealth and provide significant social and environmental benefits to all Australians.

**LP0883838** Prof PM Curmi; Prof SN Breit; Dr CP Marquis  
**Approved Project Title** **Structural and pharmaceutical studies on a novel human protein, MIC-1**  
**2008 :** \$ 81,521  
**2009 :** \$ 168,111  
**2010 :** \$ 175,516  
**2011 :** \$ 88,926  
**Primary RFCD** 2708 BIOTECHNOLOGY

### **Collaborating/Partner Organisation(s)**

St Vincent's Hospital

**Administering Organisation** The University of New South Wales

### **Project Summary**

Cancer and obesity are two of the main health problems facing Australia, as reflected by the National Research Priority: Promoting and Maintaining Good Health. This project will develop new diagnostic tools for early cancer detection and prognosis using the protein, MIC-1. MIC-1 is responsible for cachexia, a wasting disorder responsible for 25% of cancer deaths, which has no effective therapy. MIC-1 and antibodies neutralising MIC-1 may provide therapeutic agents to control cancer cachexia and severe obesity. The project will optimise these molecules for therapeutic uses. These diagnostic and therapeutic tools will form the basis of a spin-off company for commercialisation.

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

**LP0883884** A/Prof PH Dawson; A/Prof PA Wilksch; Dr NH Abramson; Prof WJ Mitchell; Dr DC Brotherton-Ratcliffe

**Approved Project Title** **Destination: developing hologram recording and replay technologies to enable the world's largest mass audience viewing of deep volume water images**

**2008 :** \$ 174,986

**2009 :** \$ 303,736

**2010 :** \$ 167,250

**2011 :** \$ 38,500

**Primary RFCD** 4103 CINEMA, ELECTRONIC ARTS AND MULTIMEDIA

### **Collaborating/Partner Organisation(s)**

Federation Square Pty Ltd  
Australia Council for the Arts  
Geola Digital uab  
Geola Technologies Ltd

**Administering Organisation** The University of New South Wales

### **Project Summary**

The exhibition of 'Destination', the world's largest hologram installation at Federation Square in Melbourne, will impact both local and international audiences through engagement with the globally important subject - WATER. Wide public access to the new perceptions of water available through the holograms will be accessible in progress via web interface, broadcast live video and an international conference hosted at Federation Square. The technological advances forged by the international and national multi-disciplinary expert team (media art, urban design, holography and laser technology) will establish a strong knowledge base and expertise in Australia thus providing opportunities for PhD students.

**LP0884099** Dr EO Fernandez

**Approved Project Title** **Care Matters: Capturing Outcomes for Children in Foster Care**

**2008 :** \$ 29,563

**2009 :** \$ 64,994

**2010 :** \$ 35,431

**Primary RFCD** 3702 SOCIAL WORK

### **Collaborating/Partner Organisation(s)**

Barnardos Australia

**Administering Organisation** The University of New South Wales

### **Project Summary**

The issue of child protection is high on the national agenda. Research on outcomes of children placed in protective care has considerable potential to yield important national benefit given that failures in this system result in social breakdown and emotional and financial cost. The ability of children and young people in care to form subsequent interpersonal relationships and achieve healthy developmental outcomes is important to social stability in Australian Society and elsewhere. Major outcomes of the research will be the advancement of the scientific knowledge base on the dynamics of children's experience of reattachment with new families and the factors that promote or inhibit resilient outcomes for children.

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

**LP0884095** Prof KJ Fox; A/Prof GD Otto; Prof WE Diewert; Mr ED Connolly; Mr D Parham

**Approved Project Title** **Tackling the Tough Problems in Productivity Measurement: Infrastructure, Services and R&D**

**2008 :** \$ 132,662

**2009 :** \$ 208,080

**2010 :** \$ 190,885

**2011 :** \$ 180,840

**2012 :** \$ 150,129

**2013 :** \$ 84,756

**Primary RFCD** 3402 APPLIED ECONOMICS

APA(I) Award(s): 2

**Collaborating/Partner Organisation(s)**

Australian Bureau of Statistics

Productivity Commission

**Administering Organisation** The University of New South Wales

### Project Summary

Productivity is seen as a main driver of economic growth and welfare improvements. Productivity indexes are used in a variety of policy contexts, in particular in determining the effectiveness (or otherwise) of government policies. Most industrialized countries have productivity accounts, but measurement problems persist and may even be more problematic in the future given an expansion in new goods and services. Improved productivity measurement and an improved understanding of its sources can inform aggregate and regional policy. The project includes collaboration with the Australian Bureau of Statistics and the Productivity Commission, with the participation of the Reserve Bank of Australia.

**LP0883548** Prof MA Green; Dr RJ Egan

**Approved Project Title** **Next generation evaporated and laser diode processed thin-film silicon-on-glass solar cells**

**2008 :** \$ 160,000

**2009 :** \$ 345,000

**2010 :** \$ 330,000

**2011 :** \$ 295,000

**2012 :** \$ 310,000

**2013 :** \$ 160,000

**Primary RFCD** 2909 ELECTRICAL AND ELECTRONIC ENGINEERING

**Collaborating/Partner Organisation(s)**

CSG Solar Pty Ltd

**Administering Organisation** The University of New South Wales

### Project Summary

The project targets a new generation of low-cost silicon solar cell that will significantly reduce the costs of generating electricity from sunlight by depositing cells onto glass as it comes from a glass factory. Solar cells are presently the world's most rapidly growing energy source, with Australians and Australian companies already major players in the associated rapidly expanding industry. Solar cells represent the cleanest and most acceptable technology yet suggested for supplying the world's future energy needs. A cleaner future environment than otherwise likely is another expected outcome as is the creation of major new opportunities for Australian industry.

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

**LP0884143** Dr RR Harley; Mr JD Gillies

**Approved Project Title** **Video Art Online: from UBU Films to the Present**

**2008 :** \$ 21,453

**2009 :** \$ 40,985

**2010 :** \$ 43,768

**2011 :** \$ 24,236

**Primary RFCD** 4103 CINEMA, ELECTRONIC ARTS AND MULTIMEDIA

### **Collaborating/Partner Organisation(s)**

Museum of Contemporary Art  
d/Lux/MediaArts

**Administering Organisation** The University of New South Wales

### **Project Summary**

There is little Australian video art systematically presented online, nor is there a broad set of reference materials on this important area of artistic practice in Australia. This project will create an innovative way to store, catalogue, interpret and archive video art works using open source software that will be freely available to others to use and develop. This project presents significant for Australia by:(i) extending the reach and profile of two of Australia's most important new media and contemporary art institutions, (ii) making available open source solutions for online video archives to the cultural sector (iii) providing the broader Australian community access to video art works in a scholarly, easy-to-use repository.

**LP0884160** Prof RT Kingsford; Prof AH Arthington; A/Prof IM Suthers; Dr KM Jenkins; Prof N Saintilan; Dr MT Maher; Dr RG Creese; Dr TS Rayner

**Approved Project Title** **Fine-scale responses of freshwater fish to environmental flows in arid-zone rivers and wetlands**

**2008 :** \$ 69,897

**2009 :** \$ 108,652

**2010 :** \$ 75,774

**2011 :** \$ 37,019

**Primary RFCD** 3008 ENVIRONMENTAL SCIENCES

APA(I) Award(s): 1

### **Collaborating/Partner Organisation(s)**

New South Wales Department of Environment and Climate Change - Rivers and Wetlands Science

New South Wales Department of Primary Industries - Fisheries

New South Wales Department of Environment and Climate Change - Environmental Water and RiverBank

**Administering Organisation** The University of New South Wales

### **Project Summary**

The community is demanding that river health be improved to sustainable levels through increased river flows. This will come through the efficient use of available environmental water that supports the ecology of Australia's river systems. This project will substantially inform the operational management of water for native fish populations and other organisms to specific wetlands and will guide the delivery of environmental flows to maintain native fish stocks. The project will help management of declining fish populations and more generally wetlands by improving our understanding of the role of environmental flows.

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

**LP0884116** Prof M Loosemore; Ms JF Carthey; Prof AJ McMichael; Prof AJ Pitman; Dr V Chandra; Dr KB Dear; Mr M Meurisse

**Approved Project Title** **Assessing the adaptive capacity of hospital facilities to cope with climate-related extreme weather events: A risk management approach**

**2008 :** \$ 72,500  
**2009 :** \$ 145,000  
**2010 :** \$ 145,000  
**2011 :** \$ 72,500

**Primary RFCD** 3102 BUILDING

### Collaborating/Partner Organisation(s)

NSW Department of Health  
Queensland Health  
Government of South Australia, Department of Health  
NZ Ministry of Health

**Administering Organisation** The University of New South Wales

### Project Summary

Given Australia's and New Zealand's relatively high exposure to climate extremes, the social, economic and health benefits of better managed hospital facilities are significant. Floods, bushfires, heatwaves and cyclones cost Australia over \$1.4bn/year and New Zealand over NZ\$43m/yr in disruption to communities, business productivity and damage to infrastructure. This research will help to mitigate these costs by protecting populations from the health risks associated with such events. The potential benefits will be most significant for those vulnerable communities at high risk such as the aged, the obese, the ill and those geographically exposed to more extreme weather events.

**LP0883728** Prof NH Lovell; Prof BG Celler; Dr J Basilakis; Dr NM Santamaria; A/Prof E Ambikairajah

**Approved Project Title** **Design of an electronic guideline-driven decision support framework for home and community telehealth settings**

**2008 :** \$ 100,500  
**2009 :** \$ 195,500  
**2010 :** \$ 185,000  
**2011 :** \$ 90,000

**Primary RFCD** 2915 BIOMEDICAL ENGINEERING

APA(I) Award(s): 1

### Collaborating/Partner Organisation(s)

MedCare Systems Pty. Ltd.  
HCF Ltd. / HCF Health and Medical Research Foundation  
WA Health  
NSW Health

**Administering Organisation** The University of New South Wales

### Project Summary

With rapid advancements in the use of telecare-based health support in several emerging clinical areas, integrating these services within a stable guideline-driven decision support framework will support evidence-best practice in this setting, as well as improving efficiencies in clinical work practice and error minimisation through automation. The result could have a profound socio-economic impact on the community and a sizable impact on healthcare outcomes; notwithstanding the substantial contribution it has to advancing the knowledge of medical decision support systems, supporting the national technology focus on health technology interoperability, and raising the profile of Australia as the foremost leader in the telecare area.

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

**LP0884128** Prof NH Lovell; Prof AV Savkin; Dr PJ Ayre; Prof Dr FL Rosenfeldt; A/Prof RF Salamonsen

**Approved Project Title** **Hybrid Sensor-based Physiological Control of an Implantable Rotary Blood Pump**

**2008 :** \$ 70,000

**2009 :** \$ 140,000

**2010 :** \$ 140,000

**2011 :** \$ 70,000

**Primary RFCD** 2915 BIOMEDICAL ENGINEERING

### **Collaborating/Partner Organisation(s)**

Ventracor Limited

**Administering Organisation** The University of New South Wales

### **Project Summary**

With over 11 million people needing heart transplants worldwide and only 3000 donor hearts, an effective alternative therapy is needed. The Ventracor Ltd. rotary blood pump is one possible approach whereby a fully implantable mechanical device assists the failing heart. The innovative steps in this research proposal will be a means to robustly and safely control the speed of the pump to meet the metabolic needs of the body. Apart from the obvious health benefits for patients, this will provide the company with a huge market advantage that will also help to bolster the Australian medical device industry.

**LP0884100** A/Prof G Peng; Prof J Canning

**Approved Project Title** **Highly Multiplexed Fibre Sensor Systems for Structural Health Monitoring and Risk Assessment of Critical Transport Infrastructures**

**2008 :** \$ 18,000

**2009 :** \$ 36,000

**2010 :** \$ 36,000

**2011 :** \$ 18,000

**Primary RFCD** 2801 INFORMATION SYSTEMS

APA(I) Award(s): 1

### **Collaborating/Partner Organisation(s)**

Roads and Traffic Authority, NSW

**Administering Organisation** The University of New South Wales

### **Project Summary**

Safeguarding critical transport infrastructures is very much in the interest of Australian government and people. This project is to develop advanced photonic and telecommunication technologies for timely and reliably acquiring and processing key structural performance information. This will reduce structural failures and maintenance costs with reliable data of structure health monitoring and risk assessment.

**LP0883486** Prof RB Randall; Dr N Feng; Dr B Peeters

**Approved Project Title** **Advanced IC engine diagnostics**

**2008 :** \$ 15,000

**2009 :** \$ 27,813

**2010 :** \$ 25,627

**2011 :** \$ 12,813

**Primary RFCD** 2905 MECHANICAL AND INDUSTRIAL ENGINEERING

APA(I) Award(s): 1

### **Collaborating/Partner Organisation(s)**

LMS International

**Administering Organisation** The University of New South Wales

### **Project Summary**

The techniques to be developed will greatly improve the reliability of diesel engines, many of which are used in the mining and transport industries, extremely important to Australia's economy, and often remotely located. Not only will unforeseen costly breakdowns be minimized, but also the cost of excessive maintenance operations. This Australian developed technology will gain prestige from association with the internationally recognised company LMS International, who supply test and simulation systems to most of the world's leading manufacturers of vehicles, aircraft etc.

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

**LP0883831** Dr DG Regan; Dr DJ Philp; Prof NG Becker; Prof A Smith; Prof AE Grulich; Dr EL Conway; A/Prof D Gertig; A/Prof MG Law; Dr J Hocking; Dr AN Stein; A/Prof M Saville; Prof J Kaldor

**Approved Project Title** **Planning female and male vaccination and cervical screening strategies to achieve optimal prevention of HPV-related disease**

**2008 :** \$ 102,352  
**2009 :** \$ 168,602  
**2010 :** \$ 153,119  
**2011 :** \$ 86,869

**Primary RFCD** 3212 PUBLIC HEALTH AND HEALTH SERVICES

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

CSL Limited

Victorian Cytology Service

**Administering Organisation** The University of New South Wales

**Project Summary**

The findings from this research will inform the development of public health policy on the most cost-effective utilisation of resources for preventing cervical, anogenital and head/neck cancers, and genital warts, in women and men, due to human papillomavirus (HPV). We will evaluate strategies for using emerging screening and vaccine technologies to prevent HPV-related disease, and assess potential adverse outcomes of vaccination. Men are currently not covered by routine vaccination or screening programs; this research will assess the benefit to men of vaccinating women only, and will consider the impact of vaccination and other interventions targeted towards men.

**LP0884035** Prof AV Savkin; Prof NH Lovell; Prof BG Celler; Dr PM Middleton

**Approved Project Title** **Development of a multivariate physiologic state space analysis framework for characterising functional properties of the cardiovascular system**

**2008 :** \$ 85,000  
**2009 :** \$ 160,000  
**2010 :** \$ 145,000  
**2011 :** \$ 70,000

**Primary RFCD** 2301 MATHEMATICS

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

MedCare Systems Pty. Ltd.

**Administering Organisation** The University of New South Wales

**Project Summary**

Pathologies of the cardiovascular system arising from heart diseases make a major contribution to morbidity and mortality in the Australian community. This project will provide new diagnostic modalities based on advanced noninvasive bioinstrumentation, signal processing and model-based analytical methods to identify early signs of developing disease or the acute exacerbation of existing disease. The impact of these new technologies on the early diagnosis and improved triaging of patients in emergency departments is potentially profound and could result in improved healthcare outcomes for the patients and reduced admissions to hospital as well as the development of a substantial international market.

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

**LP0883296** Dr A Sharma; Prof AJ Pitman; Dr NK Tuteja

**Approved Project Title** **Integrated assessment of climate change, climate input errors and land-use change on soil-moisture and carbon-balance in a catchment simulation framework**

**2008 :** \$ 35,000  
**2009 :** \$ 65,000  
**2010 :** \$ 66,000  
**2011 :** \$ 66,000  
**2012 :** \$ 30,000

**Primary RFCD** 2605 HYDROLOGY

APA(I) Award(s): 1

### Collaborating/Partner Organisation(s)

New South Wales Department of Environment and Climate Change (DECC)  
Southern Rivers Catchment Management Authority (SRCMA)

**Administering Organisation** The University of New South Wales

### Project Summary

Assessing soil moisture and carbon balance changes in a warmer climate is important for land-use and agricultural planning. A decision support tool is proposed that performs the assessment and allows us to develop plans that reduce adverse impacts. The tool consists of three parts. The first part models changes in rainfall accuracy to calibrate approaches for catchment simulation. The second part simulates rainfall under climate change conditions using stochastic downscaling. The third part simulates future soil moisture and carbon balance using downscaled climate inputs. The end result is a probabilistic simulation of the catchment hydrology under future climates.

**LP0883398** Prof M Sherris; Prof JR Piggott; A/Prof JR Evans; Dr C Kim; Dr EA Valdez; Prof OS Mitchell; Mr ES Hernaes

**Approved Project Title** **Managing Risk with Insurance and Superannuation as Individuals Age**

**2008 :** \$ 143,643  
**2009 :** \$ 307,822  
**2010 :** \$ 316,004  
**2011 :** \$ 337,151  
**2012 :** \$ 185,325

**Primary RFCD** 3402 APPLIED ECONOMICS

### Collaborating/Partner Organisation(s)

Australian Prudential Regulatory Authority  
PricewaterhouseCoopers Australia  
World Bank

**Administering Organisation** The University of New South Wales

### Project Summary

Financial stability lies at the heart of any market economy. The financial risks associated with uncertainty about longevity change comprise one of the most pressing challenges facing financial systems, nationally and globally. While insurance companies and superannuation funds hold significant reserves against future risks, the ageing of the population increases the number of people potentially exposed to loss in the event that insurers and pension funds cannot deliver on their obligations. With an increasing range of financial service products and markets developing to meet the needs of the aged, research into the issues of longevity risk and the financial impact of uncertainty in mortality and morbidity trends is vital.

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

**LP0883439** Prof R Simnett; Dr WJ Green  
**Approved Project Title** **Improving the Credibility of Greenhouse Gas Emissions Disclosures**  
**2008 :** \$ 37,980  
**2009 :** \$ 59,914  
**2010 :** \$ 45,998  
**2011 :** \$ 24,064  
**Primary RFCD** 3501 ACCOUNTING, AUDITING AND ACCOUNTABILITY

### **Collaborating/Partner Organisation(s)**

Institute of Chartered Accountants in Australia  
CPA Australia

**Administering Organisation** The University of New South Wales

### **Project Summary**

There is increasing demand for disclosures about greenhouse gas emissions around the world, and a desire to improve their credibility. This study will provide insights into the types of reporting and assurance that can be provided. In addition, it will examine the extent to which users are influenced by the greenhouse gas disclosures and assurance provided. As such, this research will provide an important knowledge base in determining the appropriate focus of future reporting and assurance in this area. It is expected that this research will inform the development of an international and Australian assurance standard on greenhouse gas emissions.

**LP0883561** Prof TD Waite; Dr SJ Khan; Dr B Vigneswaran  
**Approved Project Title** **Physico-chemical Controls on Growth, Toxicity and Succession of Microcystis and Anabaena Species in Sydney Water Supply Reservoirs**  
**2008 :** \$ 30,000  
**2009 :** \$ 60,000  
**2010 :** \$ 60,000  
**2011 :** \$ 30,000  
**Primary RFCD** 2599 OTHER CHEMICAL SCIENCES

### **Collaborating/Partner Organisation(s)**

Sydney Catchment Authority

**Administering Organisation** The University of New South Wales

### **Project Summary**

Insight into the forms of nutrients that are most readily assimilated by Microcystis and Anabaena species prevalent in Lake Burragorang and other Sydney water supply reservoirs will assist in determining the key drivers to occurrence of blooms of these organisms, particularly when combined with an understanding of the spatial and temporal distribution of the forms of nutrients, the dynamics of transformation between these various forms and the key parameters of light and temperature. In addition, the particular forms in which nutrients are acquired may influence the extent of toxin production. Thus, the findings of the project will also assist in elucidating the conditions under which toxin generation is expected.

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

**LP0883512** Prof AB Yu; Dr P Zulli; Dr PR Austin; Dr SJ Chew

**Approved Project Title** **Multiscale modelling of the transport phenomena of liquid iron and slag in ironmaking blast furnace**

**2008 :** \$ 125,832

**2009 :** \$ 255,776

**2010 :** \$ 267,374

**2011 :** \$ 275,341

**2012 :** \$ 137,911

**Primary RFCD** 2913 METALLURGY

APA(I) Award(s): 1

**Collaborating/Partner Organisation(s)**

BlueScope Steel Research Labs

**Administering Organisation** The University of New South Wales

**Project Summary**

Blast furnace ironmaking is a key operation in the steel industry which, with an annual turnover around \$11 billion, is a significant manufacturing sector in Australia. This project, focused on the behaviour of liquid iron and slag, can generate computer models that can reliably describe the complicated multiphase flow and thermochemical processes in the furnace. The implementation of the resultant models and the new understanding should lead to long life campaigns, better operational control, decreased fuel consumption, improved productivity and reduced environmental impact. This, together with the proposed research training, is important to the development of Australia's competitive steel industry.