

Summary of Linkage Projects Proposals for Funding to Commence in 2007

Queensland

The University of Queensland

LP0774870 Prof DJ Adams; Prof DJ Craik; Dr DT Wilson

Approved Project Title **New modulators of voltage-gated sodium channel subtypes from Australian Tarantula venoms**

2007 : \$ 175,000

2008 : \$ 160,000

2009 : \$ 150,000

Primary RFCD 3205 PHARMACOLOGY AND PHARMACEUTICAL SCIENCES

Collaborating/Partner Organisation(s)

Xenome Ltd.

Administering Organisation The University of Queensland

Project Summary

The venoms of Australian tarantula spiders provide a unique and untapped source of bioactive molecules. From a large stock of venom, and in collaboration with Australian pharmaceutical company Xenome, we will develop a comprehensive library of venom components suitable for drug screening. Potential national benefits from this work include a huge reduction in the healthcare bill deriving from a new treatment for pain, as well as substantial royalty returns from drugs sales. Discoveries from the program are also likely to lead to an enhancement in Australia's reputation in the neurosciences and to the development of new diagnostic research tools. The major community benefit will be a reduction in the suffering of chronic pain patients.

LP0775277 Dr CE Amiot; Prof DJ Terry; Prof VJ Callan; Dr JR Smith

Approved Project Title **Newcomer socialisation: Examining the processes predicting changes in organisational identification over time**

2007 : \$ 49,000

2008 : \$ 54,000

2009 : \$ 60,000

Primary RFCD 3801 PSYCHOLOGY

Collaborating/Partner Organisation(s)

Brisbane City Council

Administering Organisation The University of Queensland

Project Summary

The project examines factors that maximise the retention of new employees and optimise their well-being. It seeks to understand factors in the organisational socialisation process that lead to an increase in organisational identification and an optimal utilisation of employees' skills and capacities. The project contributes to efforts designed to promote and maintain good health and strengthen Australia's social and economic fabric.

LP0775004 Prof JH Baxter; Dr MA Haynes; Prof MC Western

Approved Project Title **Cohabitation in Australia: Trends and Implications for Family Outcomes**

2007 : \$ 25,118

2008 : \$ 25,118

2009 : \$ 25,118

Primary RFCD 3705 DEMOGRAPHY

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Department of Family, Community Services and Indigenous Affairs

Administering Organisation The University of Queensland

Project Summary

The project will contribute to improvements in the economic and social well-being of Australian families and communities by increasing our understanding of changing pathways into relationships and the implications of these choices for later family outcomes. The national benefit from this will be realised in terms of more effective policies that promote relationship quality and stability. This will help reduce the social and economic costs to the government and the community from poor relationship quality and relationship breakdown.

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LP0775027 Prof RG Birch; Dr D Schliebs; Mr PW Collins

Approved Project Title **Optimising transgene expression and stability for enhanced sugar yield and high-value sugar production in sugarcane**

2007 : \$ 400,000

2008 : \$ 400,000

2009 : \$ 370,000

2010 : \$ 515,000

2011 : \$ 315,000

Primary RFCD 3002 CROP AND PASTURE PRODUCTION

APA(I) Award(s): 2

Collaborating/Partner Organisation(s)

CSR Sugar Pty Ltd

Administering Organisation The University of Queensland

Project Summary

'SugarBooster' technology has the potential to underpin a value-added sugarcane industry. Higher sucrose yield is a key to sustainable export profitability, and it makes the development of renewable biofuels from sugarcane more feasible. Isomaltulose has established health benefits for consumers and it is also attractive as a renewable starting material for industry. But it must currently be produced by expensive fermentation. Efficient production in plants will open an increasing world market. This collaborative project is vital to bring these breakthrough technologies to reliable commercial implementation, in time to capture the economic benefits of the protected IP for Australia.

LP0775040 Prof PR Boreham; Dr G Dow; Prof MC Western; Mr WS Laffan

Approved Project Title **The development and application of a conceptual and statistical framework for the measurement of non-market factors affecting social inequality and social wellbeing.**

2007 : \$ 150,000

2008 : \$ 150,000

2009 : \$ 152,000

Primary RFCD 3701 SOCIOLOGY

Collaborating/Partner Organisation(s)

Queensland Public Sector Union

Administering Organisation The University of Queensland

Project Summary

In response to global and national forces, a new social and economic policy framework has promoted multiple impacts on families, communities and regions in Australia. This project will respond to an increasingly important research and policy question concerning the development of alternative measures of social wellbeing and social inequality to the conventional measures of economic resources within households that are currently employed. This research will provide a nationally and internationally recognized evidence base on which to develop policies of importance to the quality of life in Australia's urban and regional communities.

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LP0774994 Dr AP Bradley; Prof S Crozier; Prof DJ Venter; Dr AJ Mehnert; Dr PC Bamford

Approved Project Title **Multi-modal, Multi-dimensional Virtual Microscopy for Diagnostic Quantitative Pathology**

2007 : \$ 185,000
2008 : \$ 163,000
2009 : \$ 153,000

Primary RFCD 2802 ARTIFICIAL INTELLIGENCE AND SIGNAL AND IMAGE PROCESSING

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)
MonoGen, Inc.
Mater Health Services Pathology

Administering Organisation The University of Queensland

Project Summary

This project will contribute to the development of a new generation of virtual microscopy (VM) systems that provide new and innovative features capable of significantly increasing the adoption of digital imaging technology throughout the field of pathology. These systems have the potential to significantly enhance the efficiency and efficacy of not only primary diagnostic workflows, but also aspects of proficiency testing and continuing education vital for a vibrant, well regulated discipline. In addition, the project will contribute to our knowledge of the pathology assessed in the screening and diagnosis of cancers such as cervical, lung and bladder cancers.

LP0775547 Prof RJ Capon

Approved Project Title **Australian Marine Biodiversity As A Source Of New Drugs To Control Neurodegenerative Disease**

2007 : \$ 145,118
2008 : \$ 125,118
2009 : \$ 125,118

Primary RFCD 2503 ORGANIC CHEMISTRY

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)
Neuropharma SA

Administering Organisation The University of Queensland

Project Summary

With the aging of Australia's population the impact of neurodegenerative diseases such as Alzheimer's and Parkinson's is rapidly on the rise. There is an urgent need to develop new and better drugs to treat the symptoms and underlying cause of these debilitating diseases. Historically, the majority of the world's pharmaceuticals have been drawn from biodiversity (ie plants, microbes and animals). As one of the few megabiodiverse nations, Australia is ideally positioned to accelerate and focus the search for drugs from nature. This project will explore an exceptionally promising pool of Australian biodiversity, its marine ecosystems, as a source of inspiration for the development of new drugs to treat neurodegenerative diseases.

Summary of Linkage Projects Proposals for Funding to Commence in 2007

LP0775031 Dr MM Cuskelly; Asst Prof MJ O'Callaghan; A/Prof PH Gray

Approved Project Title **Self-regulation in very low birthweight/very preterm 2 and 4 year olds: A comparison study.**

2007 : \$ 40,000

2008 : \$ 28,000

2009 : \$ 28,000

Primary RFCD 3801 PSYCHOLOGY

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Mater Health Services Brisbane

Administering Organisation The University of Queensland

Project Summary

Increasing numbers of extremely low birthweight children are surviving, and the majority go on to have learning problems. The difficulties these children experience and the resources that are devoted to the task of improving their academic skills have personal, social and economic costs. This project will assist in the identification of areas of difficulty that contribute to their problems in learning, essential for developing effective interventions. Success will bring substantial benefits at both the level of the individual and of society. The study will be undertaken by a PhD candidate as part of a multidisciplinary team, an experience that will provide an exceptional training in research with vulnerable children.

LP0775303 Dr SG Dove; Dr WP Leggat; Prof D Yellowlees; Dr JM Lough; Dr PA Hutchings; Dr KG Caldeira

Approved Project Title **Assessing the risk of ocean acidification for the Great Barrier Reef.**

2007 : \$ 176,650

2008 : \$ 174,650

2009 : \$ 125,650

Primary RFCD 2604 OCEANOGRAPHY

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Great Barrier Reef Research Foundation

Administering Organisation The University of Queensland

Project Summary

The increase in greenhouse gases such as CO₂ represents a challenge for coral reefs such as Australia's Great Barrier Reef (GBR). While the impact of greenhouse warming on coral reefs has been partially explored, the potentially serious implications of a decrease in ocean pH due have not been properly assessed. Detecting and understanding changes to carbonate concentrations and reef calcification are of great importance if managers are to respond strategically to potential ecological changes. This project directly addresses National Research Priority 1 of achieving 'An Environmentally Sustainable Australia' by addressing the priority goal of 'Responding to climate change and variability'.

LP0775089 Dr SP Finnigan; Dr ZS Chan

Approved Project Title **Novel EEG data mining methods for detecting and monitoring brain injury**

2007 : \$ 75,000

2008 : \$ 70,000

2009 : \$ 65,000

Primary RFCD 2708 BIOTECHNOLOGY

Collaborating/Partner Organisation(s)

BrainZ Instruments Limited

Administering Organisation The University of Queensland

Project Summary

The outcomes of this project could ultimately help produce novel technology which would enable bedside monitoring of brain function in patients with brain injuries such as stroke. This technology could aid critical care and treatment of such patients. Hence patients' recoveries could be positively affected and the high death or disability rates associated with such conditions could be reduced. A host of economic and social benefits for patients, their families, hospitals and their staff, governments and healthcare organisations could thus result. The developed technology would be non-invasive, compact and relatively inexpensive, and could thus be used in rural and regional hospitals, thereby also benefiting patients in those communities.

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LP0775239 A/Prof ID Godwin; Prof S Fukai; Dr DS Loch; Dr TA Holton; Dr WW Hanna

Approved Project Title **Eco-Turf: Water and nutrient use efficient turfgrasses from Australian biodiversity.**

2007 : \$ 250,000

2008 : \$ 240,000

2009 : \$ 305,000

2010 : \$ 315,000

Primary RFCD 2704 BOTANY

APA(I) Award(s): 2

Collaborating/Partner Organisation(s)

Jimboomba Turf Company PTY LTD

DPI&F

Council of Mayors

Administering Organisation The University of Queensland

Project Summary

Domestic water consumption in Australia is approximately 30% higher than the OECD average. Approximately one third of domestic water consumption is applied to the garden, including turfgrass lawns. Turfgrasses are significant users of fertilisers, which can lead to problems with runoff and infiltration into the water table. We will use the unique diversity of Australian couch grasses to identify new turfs for domestic, sportsground and amenity lawns. This project will develop tools to select turfgrasses that maintain quality with reduced inputs of water and nutrients, leading to an overall reduction in resource use and downstream ecological effects. Benefits of this project extend to urban and rural communities Australia-wide.

LP0774952 A/Prof RA Hyde; Mr EA Gardner; Ms P Skoien; Mrs LA Rutherford; Mr C WALTON; Dr DA Wadley

Approved Project Title **Towards a Quality of Life Model for Sustainable Housing in South East Queensland**

2007 : \$ 79,545

2008 : \$ 41,000

2009 : \$ 41,000

2010 : \$ 60,000

Primary RFCD 3101 ARCHITECTURE AND URBAN ENVIRONMENT

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Landmatters Currumbin Valley Pty Ltd

Gold Coast Water

Department of Natural Resources

Administering Organisation The University of Queensland

Project Summary

Current reports, on Quality of Life in South East Queensland and the Queensland Governments State of the Environment demonstrate a paradox, - high quality of life but also increasing environmental impact. How to address this paradox is a major research question addressed in this project. Through examining examples of best practice sustainable housing it is possible to address this question. The key factors of quality of life will be identified for housing, which will assist policy makers plan for a sustainable future.

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LP0775049 Dr NL Jimmieson; Dr P Bordia

Approved Project Title **The role of supervisors in managing psychosocial risk factors in the workplace: Implications for employee health and organisational effectiveness**

2007 : \$ 60,000

2008 : \$ 61,562

2009 : \$ 64,455

Primary RFCD 3801 PSYCHOLOGY

Collaborating/Partner Organisation(s)

Department of Industrial Relations

Administering Organisation The University of Queensland

Project Summary

This research aims to increase the capacity of Australian employers to identify and manage psychosocial risk factors in the workplace. By promoting a continuous improvement approach to occupational stress management, negative outcomes for employers will be reduced, in terms of absenteeism, turnover, and associated losses in productivity. By making business operators more robust to work-related stressors, their need to react to critical stress-related incidents will be lessened and government resources will not be lost as a result of processing claims. In terms of social benefits, this research aims to enhance the quality of working life for employees.

LP0775096 Dr CJ Mallett; A/Prof SR Billett; Prof RI Tinning; Dr AJ Rossi

Approved Project Title **Learning and mentoring in high performance sports coaching**

2007 : \$ 31,000

2008 : \$ 35,000

2009 : \$ 36,000

Primary RFCD 3399 OTHER EDUCATION

Collaborating/Partner Organisation(s)

Australian Sports Commission

Administering Organisation The University of Queensland

Project Summary

Effective coaching is held responsible for Australia's international sporting performance. Yet little is known about how best elite sports coaches learn effective and innovative high-performance coaching practices. This project aims to identify and contribute to effective elite sport coaching development in Australia. This will be achieved through understanding how best current elite coaches learn through their coaching work. Implications here extend across sport and to other domains of human activity. The contribution of sport to Australian national identity is well established and the economic benefit of sport and more specifically sporting success in Australia is also well recognised.

LP0775106 Dr CE Manathunga; Prof PR Boreham; Dr PA Lant; A/Prof GD Mellick; Prof C Critchley

Approved Project Title **Research and innovation leaders for industry**

2007 : \$ 73,036

2008 : \$ 73,036

2009 : \$ 73,036

Primary RFCD 3301 EDUCATION STUDIES

Collaborating/Partner Organisation(s)

Rio Tinto Technology Ltd

Queensland State Development, Innovation and Trade

CSR Sugar

Administering Organisation The University of Queensland

Project Summary

This research project will contribute significant national benefits because it will provide new data on the future likely requirements of 21st century researchers who will play a leading role in promoting Australia's innovation culture and economy. Government, industry, university and graduate stakeholders require an evidence-base upon which to reform Australian research training policy. By exploring the graduate employment outcomes and transitions of recent graduates and employers' perceptions of their knowledge and skills, this study will inform the development of research training quality indicators and contribute to theoretical debates about the nature of knowledge production and innovation in post-modern times.

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LP0775179 Prof JN Marshall; A/Prof SP Collin; Dr RD McCauley; Dr KA Fritsches; Dr NS Hart; Prof BM Degnan; Dr SM Degnan; Dr MD Norman; Dr JN Hooper; Dr PA Hutchings; Dr MG Meekan; Dr EA Widder; Dr T Frank; Dr JC Partridge; Dr CE Diebel; Prof EJ Warrant; Dr S Johnsen; Prof Dr G Worheide; Dr DJ Lindsay

Approved Project Title **Deep Downunder: designing a deep-sea exploration and discovery capability for Australia.**

2007 : \$ 380,000

2008 : \$ 351,000

2009 : \$ 362,000

Primary RFCD 3207 NEUROSCIENCES

APA(I) Award(s): 4

Collaborating/Partner Organisation(s)

DeepOcean Quest - CREA

Administering Organisation The University of Queensland

Project Summary

Exploration of the deep-sea with the modern technologies to be developed by Deep-Downunder is a first for Australia. We aim to explore and discover life at depths from 50-3000m off The Great Barrier Reef, around the seamounts of Lord Howe Island and Tasmania and in the deep canyons of WA and SA. We expect to discover new species, hope for a glimpse of giant squid at home and will answer specific questions on Australia's ocean biology, fisheries and biotechnology never before approachable. To be effective guardians of Australian waters we must learn what lies in the depths we can't see from a boat.

LP0775264 Dr CA McAlpine; Dr M Maron; Dr GC Smith; Dr DV Pullar; Dr MN Gentle

Approved Project Title **Restoration of Fragmented Brigalow Landscapes for Conservation: Evaluating Alternative Futures in a Changing Climate**

2007 : \$ 140,000

2008 : \$ 105,000

2009 : \$ 110,000

Primary RFCD 2707 ECOLOGY AND EVOLUTION

APA(I) Award(s): 2

Collaborating/Partner Organisation(s)

Queensland Murray-Darling Committee

Condamine Alliance

Queensland Environmental Protection Agency

Department of Main Roads

Border Rivers-Gwydir Catchment Management Authority

Administering Organisation The University of Queensland

Project Summary

Appropriate management and restoration of Australia's endangered brigalow communities will prove critical for the conservation of the nation's biodiversity assets. The Brigalow Belt South supports disproportionately high numbers of threatened fauna species. This research will provide regional, state and national natural resource management organisations with the ability to conserve threatened and unique brigalow fauna in the long-term. Regional communities will benefit as the tool will be used for multiple uses ranging from advising regional landholders on optimal management of native vegetation on their properties to maximising the value of regional landscape restoration projects.

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LP0775220 Prof JR McColl-Kennedy; Dr TS Dagger; A/Prof JC Sweeney; Mrs BR Mirolo; Ms MM Hargraves

Approved Project Title **Customer Co-production in Ongoing Health Service Delivery: A Longitudinal Study**

2007 : \$ 60,799

2008 : \$ 30,816

2009 : \$ 24,169

Primary RFCD 3502 BUSINESS AND MANAGEMENT

Collaborating/Partner Organisation(s)

Haematology and Oncology Clinics of Australasia Pty Ltd

Administering Organisation The University of Queensland

Project Summary

Customers do not merely receive services. Increasingly they are actively involved in their design and delivery even to the extent of being regarded as 'part-time employees'. Customer co-production is tipped to be the next frontier in competitive effectiveness. Benefits to customers, however, are largely unknown. Often customers fail in their co-production role with serious negative consequences. Given the important role of customers (patients) in ongoing health care, and the potential for failure, it is critical that customer co-production be fully investigated. If performed well co-production should result in positive patient outcomes and significant cost savings for the healthcare sector.

LP0774925 Dr JF Mueller; Dr RV Hyne; Dr RK Symons; Dr A Sjodin

Approved Project Title **Sources, fate and exposure pathways for emerging persistent organic pollutants in Australia**

2007 : \$ 105,118

2008 : \$ 105,118

2009 : \$ 105,118

Primary RFCD 2911 ENVIRONMENTAL ENGINEERING

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Queensland EPA

Department of Environment and Conservation, NSW

Queensland Health Scientific Services

Western Australian Department of Water

ERGO

The National Measurement Institute

Administering Organisation The University of Queensland

Project Summary

Brominated flame retardants and perfluorinated chemicals have received much attention from media and environmental groups. They accumulate in biota and humans and levels are shown to be increasing. It is proposed they be included in the global treaty on persistent organic pollutants (POPs), recently ratified by Australia. This project aims to determine sources, fate and exposure pathways for these chemicals with an emphasis on exposure to infants. This will provide information for risk assessment development and more effective management of these chemicals. Furthermore, the study's approach and results will contribute to a rationalization of the issues related to emerging POPs.

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LP0774868 Dr I Ozolins; Dr M Dick; A/Prof C Turner; Prof D Wilkinson; Prof S Stewart; Prof PJ Schluter; Ms E Yorkston; Ms PM Régo

Approved Project Title **Recruitment and Retention of the Australian Medical Practitioner Workforce - a Longitudinal Electronic Cohort Study**

2007 : \$ 80,000

2008 : \$ 80,000

2009 : \$ 80,000

2010 : \$ 50,000

2011 : \$ 50,000

Primary RFCD 3212 PUBLIC HEALTH AND HEALTH SERVICES

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Queensland Health

Royal Australian College of General Practitioners

Administering Organisation The University of Queensland

Project Summary

Identifying and acknowledging the significant personal and professional influences on the career decisions of doctors, including the choice to leave the profession for several years and factors driving the decision to return or not return, will provide not only the major public employers of doctors, but also government, community and private practice groups with reliable current evidence to inform medical workforce planning and design, and ensure quality health care.

LP0774850 Prof HP Possingham; Dr AL Green

Approved Project Title **Marine conservation planning for persistent coral reef communities: Incorporating connectivity and resilience**

2007 : \$ 75,000

2008 : \$ 60,000

2009 : \$ 65,000

Primary RFCD 3008 ENVIRONMENTAL SCIENCES

Collaborating/Partner Organisation(s)

The Nature Conservancy, acting by and through its Australia and Pacific Island Countries Programs

Administering Organisation The University of Queensland

Project Summary

Australia's biological diversity underpins much of our economic wealth - for example the remarkable diversity of coral reefs fuels a multibillion dollar tourism industry. However, despite substantial efforts to conserve marine ecosystems, Australian coral reefs are at increasing risk from climate change related catastrophes. To counteract this trend, we must choose marine reserve networks using methods that account for the dynamic nature of climate change and reef community responses to maximise the persistence of reef biodiversity. The new theory and methods will enable us to create more effective and economically efficient marine reserve systems.

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LP0775139 Prof TK Saha

Approved Project Title Investigation of key factors affecting the polarisation based diagnostics of power transformers

2007 : \$ 100,000
2008 : \$ 100,000
2009 : \$ 80,000

Primary RFCD 2909 ELECTRICAL AND ELECTRONIC ENGINEERING

Collaborating/Partner Organisation(s)

Connell Wagner
 Energy Australia
 Powerlink Queensland

Administering Organisation The University of Queensland

Project Summary

To avoid system wide power interruptions, major assets in the electricity network must be always operating satisfactorily. One of the key assets in the electricity network is the power transformer. Currently many transformers are over 50 years old and failure of a transformer may result in long interruptions in supply and the loss of millions of dollars in revenue. The ageing of transformers needs to be properly monitored to avoid catastrophic failures. This project will provide an innovative solution for the better understanding of the ageing processes of transformers and help managers make correct decisions for maintenance and replacement strategies.

LP0775186 Prof P Spearritt; Dr GA Ginn; Prof DJ Carter; Dr SG Ulm; Dr NS Bordes; Dr CA McAlpine; Dr JP Powell; Mr MC Quinnell; Mr P Gesner; Dr BA Crozier; Dr JM McKay; Ms PE Barnard

Approved Project Title The Queensland Historical Atlas: Histories, Cultures, Landscapes

2007 : \$ 200,591
2008 : \$ 192,533
2009 : \$ 209,189

Primary RFCD 4301 HISTORICAL STUDIES

APA(I) Award(s): 3

Collaborating/Partner Organisation(s)

Queensland Museum

Administering Organisation The University of Queensland

Project Summary

An Historical Atlas of Queensland will provide a unique perspective on the interaction between environmental and cultural forces in the shaping of Queensland's history. By bringing together a wide range of existing but dispersed areas of expertise, and making innovative use of the latest digital technologies, it will produce new knowledges of Queensland's geography, biodiversity, rural and urban development, communications and cultures.

LP0775131 A/Prof GM Whitehouse; Prof JH Baxter; Mrs CM Broers

Approved Project Title Industrial relations, gender equity and work/family balance: assessing the impact of changing law and practice in Queensland

2007 : \$ 55,000
2008 : \$ 50,000
2009 : \$ 55,000

Primary RFCD 3799 OTHER STUDIES IN HUMAN SOCIETY

APA(I) Award(s): 1

Collaborating/Partner Organisation(s)

Queensland Department of Industrial Relations
 Office for Women

Administering Organisation The University of Queensland

Project Summary

The project has potential to contribute to improvements in the economic and social well-being of Australian families and communities by identifying effective strategies to enhance gender equity in employment and work/family balance. It seeks to extend understanding of how these outcomes vary across regions and sectors of the Queensland economy in the context of a changing industrial relations framework, and to provide an evidence-base to inform the best ways to secure high quality employment and labour force attachment over the life course.

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LP0775429 Dr J Zhu; Prof V Rudolph

Approved Project Title **Plasma-Catalyst Hybrid Process for Simultaneous Removal of NOx and SOx**

2007 : \$ 167,000

2008 : \$ 132,000

2009 : \$ 135,000

Primary RFCD 2906 CHEMICAL ENGINEERING

APA(I) Award(s): 2

Collaborating/Partner Organisation(s)

Indigo Technologies Group Pty Ltd

Administering Organisation The University of Queensland

Project Summary

Coal combustion provides over 80% of the electricity produced in Australia, with the power stations being major emitters of the pollutants NOx and SOx. This project will potentially lead to a new technology to simultaneously remove NOx and SOx in a single and economical process, eliminating the secondary waste streams that disadvantage current competing technologies. This will provide: significant environmental benefits for Australia in reducing these dangerous atmospheric pollutants; economic advantage to our power stations by enabling cheaper, more efficient technologies and consolidate Australia's leading position in the world in air pollution control.