



Australian Institute of Nuclear Science and Engineering

Annual Report 2001

Section 2

Contents

AINSE Council	2
Executive Committee	3
AINSE Staff and Consultants	3
Specialist Committees	4
Conference Planning Committees	6
Financial Statements	9
AINSE Postgraduate Research Awards	19
Summary of AINSE Awards	21
Summary of Experiments at ISIS	36
Publications	38
Performance Indicators for AINSE	60
University Codes	63

AINSE Council 2001

Member Organisations and Representation

(2 Council Meetings held in 2001)

Membership Organisation	Commenced	Meetings Councillor	Attended
ANSTO	1958	Professor Helen Garnett	1
ANSTO, Environment		Professor Ann Henderson-Sellers	2
ANSTO, Materials		Dr Adam Jostsons	1
ANSTO, Nuclear Technology		Mr Ken Horlock	1
ANSTO, Physics		Dr Brian Spies	2
ANSTO, Radiopharmaceuticals		Dr Stuart Carr	2
The University of Queensland	1958	Professor Ken Collerson	1
The University of Queensland	1958	Professor John Boldeman	1
The University of New England	1958	Professor Brian Stoddart	0
The University of Sydney	1958	Professor Len Lindoy	2
The University of New South Wales	1958	Professor Hans Coster, Vice President	1
The Australian National University	1958	Professor John White	2
The University of Melbourne	1958	A/Professor Ron Cooper, President	2
University of Tasmania	1958	Professor Allan Canty	2
The University of Adelaide	1958	Dr Gerald Laurence	2
The University of Western Australia	1958	Professor Brian Stone	2
Monash University	1961	Dr Trevor Hicks	2
The University of Newcastle	1965	Professor Ron MacDonald	0
Flinders University of South Australia	1966	Professor Peter Teubner	2
La Trobe University	1966	Professor Paul Pigram	2
Macquarie University	1966	Professor Peter Bergquist	1
James Cook University	1970	Professor Richard Keene	2
University of Wollongong	1975	A/Professor Anatoly Rozenfeld	2
Griffith University	1975	A/Professor Evan Gray	1
Murdoch University	1985-1997 rejoined 1998	A/Professor Stephen Thurgate	0
University of Technology, Sydney	1988	E/Professor Evan Leitch	2
RMIT University	1988	Professor Dinesh Sood	2
Curtin University of Technology	1989	Professor Brian O'Connor	2
Central Queensland University	1991	Dr David Druskovich	2
University of South Australia	1991	Dr Bill Skinner	2
Swinburne University of Technology	1991	Dr Eddie Bakshi	1
Queensland University of Technology	1992	Dr Riaz Akber	2
University of Western Sydney	1993	Dr Robyn Crumbie	2
Victoria University	1994	Professor Albert McGill	1
Southern Cross University	1994	A/Professor Bill Boyd	1
The University of Auckland	1995	Professor Ralph Cooney	0
The University of Auckland	1995	Professor Tom Barnes	1
Charles Sturt University	1995	A/Professor Kevin Robards	0
Northern Territory University	1995	A/Professor Charles Webb	0
Edith Cowan University	1996	Professor Patrick Garnett	0
University of Canberra	1996	A/Professor Andrew Cheetham	1
The University of Southern Queensland	1996	Professor Malcolm McKay	0
Deakin University	1997	Professor Pip Hamilton	0
University of Ballarat	1997	Mr Stafford McKnight	0
The Australian Catholic University	2001	Dr Neil Saintilan	1
Secretary to Council (non-voting)		Dr Dennis Mather, AINSE	2

Organisation	Councillor	Meetings Attended
Alternate Representatives		
The University of Auckland	Dr Bob Anderson	1
Edith Cowan University	Dr Steven Hinckley	2
Australian Catholic University	Dr Brian Bicknell	1
The University of New England	Dr Matthew Fewell	1
The University of Newcastle	A/Professor Bruce King	1
Charles Sturt University	Dr Michael Antolovich	2
Murdoch University	Dr Rolf Koch	1
Murdoch University	A/Professor Andris Stelbovics	1
Northern Territory University	Dr David Parry	2

Executive Committee

(4 Executive Meetings held in 2001)

Councillor	Office/Position	Organisation	Meetings Attended
A/Professor Ron Cooper	President	The University of Melbourne	4
Professor Hans Coster	Vice-President	The University of New South Wales	4
Professor John White		The Australian National University	3
Professor Helen Garnett		ANSTO	4
Professor Ann Henderson-Sellers		ANSTO	4
Dr Brian Spies		ANSTO	3
Dr Dennis Mather		AINSE	4

AINSE Staff

Scientific Secretary	Dr Dennis Mather
Secretariat	Mrs Irene Parker Mrs Nerissa Phillips Miss Tanya Irvine Mrs Sandy O'Connor (part-time)

Specialist Committees for 2001

The Scientific Secretary, AINSE, is an ex-officio (non-voting) member of all Committees

(a) indicates 'alternate'

Member	Univesity	Meetings Attended
Accelerator Science Specialist Committee		
Professor Dinesh Sood, Convenor	Royal Melbourne Institute of Technology	1
Dr Peter Johnston (a)	Royal Melbourne Institute of Technology	1
Dr Rob Elliman	The Australian National University	2
Dr Brian Spies	Director, Physics, ANSTO (ex officio)	2
Dr David Cohen	Physics Division, ANSTO	2
Dr John Boldeman	University of Queensland	1
Dr Peter Grave	University of New England	2
Mr Paul Middleton	Business Manager, Physics, ANSTO	1
Accelerator Mass Spectrometry Specialist Committee		
Professor Allan Chivas, Convenor	University of Wollongong	2
Professor Eric Colhoun	The University of Newcastle	2
Professor Dan Potts	The University of Sydney	1
Dr Mike Barbetti	The University of Sydney	2
Dr David Fink	Physics Division, ANSTO	2
Professor Ken Collerson	The University of Queensland	1
Dr Brian Spies	Director, Physics Division, ANSTO (ex officio)	2
Mr Paul Middleton	Business Manager, Physics, ANSTO	1
AMS Advisory Group		
Professor John Dodson	The University of Western Australia	-
Dr Karl Heinz-Wyrwoll	The University of Western Australia	-
Dr Iain Davidson	The University of New England	-
Dr Peter Nixon	The University of Queensland	-
Dr Bert Roberts	La Trobe University	-
Mr John Head	The Australian National University	1
Dr Alan Watchman	James Cook University	-
Dr Glenn Summerhayes	The Australian National University	-
Dr Peter Bellwood	The Australian National University	-
Dr Geraldine Jacobsen	Physics, ANSTO	2
Radiopharmaceuticals and Neutron Irradiation Specialist Committee		
Professor Leon Kane-Maguire, Convenor	University of Wollongong	2
Dr Roger Martin	The University of Melbourne	-
Professor Andrew Gleadow	The University of Melbourne	2
A/Professor Jim Camakaris (a)	The University of Melbourne	1
Dr Andrew Katsifis	Radiopharmaceuticals, ANSTO	2
Mr Ken Suter	ARI, ANSTO	2
Dr Stuart Carr	Director, Radiopharmaceuticals, ANSTO	2
Dr Bill Burch	Radiopharmaceuticals, ANSTO	1
Dr Patrick Butler	St George Hospital	2
Engineering, Materials and Nuclear Technology Specialist Committee		
Dr Matthew Fewell, Convenor	University of New England	1
Professor Barry Muddle, Convenor	Monash University	2
Dr Paul Pigram	La Trobe University	1
Dr Stephen Hinckley	Edith Cowan University	2
Dr Kathryn Prince (a)	Environment, ANSTO	1
Dr Adam Jostsons	Director, Materials Division, ANSTO (ex officio)	-
Mr Ken Horlock	Director, Nuclear Technology, ANSTO (ex officio)	1
Mr John Blackley	Business Manager, Materials, ANSTO	1
Dr John Bartlett	Materials Division, ANSTO	1
Mr Ray Brindley	Materials Division, ANSTO	-
Dr Dan Perera	Materials Division, ANSTO	2
Mr Ted Martin (a)	Materials Division, ANSTO	1

Environmental Science Specialist Committee

Dr Professor Gerald Laurence, Convenor	The University of Adelaide	2
A/Professor Rod Buckney	University of Technology, Sydney	1
Dr Andrew McMinn	University of Tasmania	1
Professor Ann Henderson-Sellers	Director, Environment Division, ANSTO (ex officio)	2
Dr David Garnett	Becquerel Laboratories (ex officio)	1
Dr Riaz Akber	Queensland University of Technology	2
Ms Janelle Jenkins	Business Manager, Environment Division, ANSTO	2
Dr Ross Jeffree	Environment, ANSTO	1
Ms Helen Waldron (a)	Becquerel Laboratories	1

Environmental Science Advisory Group

Dr Kathryn Prince	Environment Division, ANSTO	2
Dr Henk Heijnis	Environment Division, ANSTO	2
Dr David Cohen	Physics Division, ANSTO	1

Neutron Scattering Specialist Committee

A/Professor Evan Gray, Convenor	Griffith University	2
Professor Brian O'Connor	Curtin University	2
Professor John White	The Australian National University	2
Dr Robert Robinson	Director, Neutron Scattering Division, ANSTO (ex officio)	2
Dr Margaret Elcombe	Physics Division, ANSTO	1
Dr Brendan Kennedy	The University of Sydney	2
Dr Brian Spies	Director, Physics Division, ANSTO (ex officio)	1
Mr Paul Middleton	Business Manager, Physics Division, ANSTO	2

Plasma Fusion Specialist Committee

A/Professor Andrew Cheetham, Convenor	University of Canberra	1
Professor Robin Storer	Flinders University	1
A/Professor Rod Cross	University of Sydney	1
Professor Jeffrey Harris	Australian National University	1
Dr John Howard (a)	Australian National University	-
Dr Xuehua Shi (a)	Central Queensland University	-
A/Professor Brian James (a)	University of Sydney	-

Radiation Science Specialist Committee

A/Professor Ron Cooper, Convenor	University of Melbourne	2
Mr David Sangster	AINSE (Honorary Fellow)	2
A/Professor David Hill	The University of Queensland	2
Dr David Webb	Australian Radiation Laboratory	1
Dr Dimitri Alexiev	Physics Division, ANSTO	1
Dr Brian Spies	Director, Physics Division, ANSTO (ex officio)	2
Mr Paul Middleton	Business Manager, Physics, ANSTO	2

Radiation Science Advisory Group

Dr Bob Anderson (a)	The University of Auckland	1
Mr Gavin Gant	Physics Division, ANSTO	1
A/Professor Jan Gebicki	Macquarie University	-
A/Professor Doug Moore	The University of Sydney	-
Dr Roger Martin	The University of Melbourne	-

Conference Planning Committees

Neutron Reflectometry at Australia's Replacement Research Reactor - May 2001

Dr Michael James	ANSTO
Dr Shane Kennedy	ANSTO
Dr Robert Robinson	ANSTO
Dr Dennis Mather	AINSE
Mrs Irene Parker	AINSE

Neutrons for Biology - July 2001

Professor Tony Klein	University of Melbourne
Professor Dick Wettenhall	University of Melbourne
Dr Robert Robinson	ANSTO
Dr Robert Knott	ANSTO
Dr Dennis Mather	AINSE
Mrs Irene Parker	AINSE

15th International conference on Ion Beam Analysis, and incorporating the 12th AINSE conference on Nuclear Techniques of Analysis - July 2001

Professor Rob Elliman	Australian National University
Dr Soey Sie	CSIRO
Professor Peter Johnston	Royal Melbourne Institute of Technology
Dr Mladen Petravic	Australian National University
Dr Mark Ridgway	Australian National University
Dr Leszek Wielunski	CSIRO
A/Professor John O'Connor	University of Newcastle
Professor Jim Williams	Australian National University
Dr Heiko Timmers	Australian National University
Dr Dennis Mather	AINSE
A/Professor David Jamieson	University of Melbourne
Dr David Cohen	ANSTO
Mr Barry Neame	ConSec
Dr Andreas Markwitz	Institute of Geological and Nuclear Sciences
Ms L Walmsley	Australian National University
Ms Tessica Weijers	Australian National University

Dynamics, Excitations and Magnetism at Australia's Replacement Research Reactor - August 2001

Dr Leo Cussen	ANSTO
Dr Shane Kennedy	ANSTO
Dr Robert Robinson	ANSTO
Dr Dennis Mather	AINSE
Mrs Irene Parker	AINSE

Environment Workshop "Archives of human impact of the last 200 years" - September 2001

Dr Henk Heijnis	ANSTO
A/Professor Andrew McMinn	University of Tasmania
Dr Simon Haberle	Monash University
A/Professor Brian Jones	University of Wollongong
Dr Bryan Chenhall	University of Wollongong
Dr Dennis Mather	AINSE
Mrs Irene Parker	AINSE

ANA 2001 - October 2001

Dr Clarence Hardy	Australian Nuclear Association
Mr Roger Alsop	Australian Nuclear Association
Dr Peter Airey	ANSTO
Mr John Rodd	Australian Nuclear Association
Dr Neil McDonald	ANSTO
Mr Douglas Ebeling	The Institution of Engineers
Dr Dennis Mather	AINSE
Dr John Easey	ANSTO
Dr Donald Higson	ARPS
Mr Ian Hore-Lacy	Uranium Information Centre
Mr Colin Hockings	Australian Institute of Non-Destructive Testing
Mrs Margaret Lanigan	Conference Overload
Ms Robyn Shearwood	Conference Overload

Single-Crystal Diffraction at Australia's Replacement Research Reactor - December 2001

Dr Wim Klooster	ANSTO
Dr Shane Kennedy	ANSTO
Dr Robert Robinson	ANSTO
Dr Dennis Mather	AINSE
Mrs Irene Parker	AINSE

Small-Angle Neutron Scattering at Australia's Replacement Research Reactor - December 2001

Dr Elliot Gilbert	ANSTO
Dr Shane Kennedy	ANSTO
Dr Robert Knott	ANSTO
Dr Robert Robinson	ANSTO
Dr Dennis Mather	AINSE
Mrs Irene Parker	AINSE

9th Advances in Radiopharmaceutical Chemistry (badge section) incorporated in the ANZSNM Annual Meeting - May 2002

Dr Stuart Carr	ANSTO
Dr Dennis Mather	AINSE
Mrs Irene Parker	AINSE

Environmental Radioactivity: Migration, Measuring and Monitoring in the South Pacific - May 2002

Mr John Twining	ANSTO
Professor Ann Henderson-Sellers	ANSTO
Ms Sue Brown	ANSTO
Dr Gillian Peck	ANSTO
Dr Paul Brown	ANSTO
Ms Renate Domel	ANSTO
Dr Ross Jeffree	ANSTO
Dr John Harries	ANSTO
Mr Ron Szymczak	ANSTO
Mr Andrew Jenkinson	ANSTO
Dr Dennis Mather	AINSE

Second Bio-SIMS Workshop June 2002

Dr Kathryn Prince	ANSTO
Mr Rob Russell	ANSTO
Dr Scott Markich	ANSTO
Dr Ross Jeffree	ANSTO
Mrs Irene Parker	AINSE

24th AINSE Plasma Conference in collaboration with the International Congress on Plasma Physics, ICPP 2002 - July 2002

Professor Robert Dewar	Australian National University
Dr Ian Falconer	University of Sydney
Professor M Bilek	University of Sydney
Professor Rod Boswell	Australian National University
Dr I Cairns	University of Sydney
Dr R L Carman	Macquarie University
Dr Reynaldo Castillo	University of Western Sydney
A/Professor Andrew Cheetham	University of Canberra
Professor Keith Cole	La Trobe University
Dr George Collins	ANSTO
Dr Neil Cramer	University of Sydney
A/Professor Rod Cross	University of Sydney
Professor Brian Fraser	University of Newcastle
Professor Jeffrey Harris	Australian National University
Professor Heinrich Hora	University of New South Wales
Dr John Howard	Australian National University
A/Professor Brian James	University of Sydney
Dr John Lowke	CSIRO
Professor Peter Robinson	University of Sydney
A/Professor Stephen Simpson	University of Sydney
Professor Robin Storer	Flinders University
Professor John O'Connor (Ex officio)	University of Newcastle

19th AINSE Nuclear and Particle Physics in collaboration with the 15th National Congress of Australian Institute of Physics, Physics and Industry Working Together - July 2002

Dr Stuart Tovey	University of Melbourne
Prof John Boldeman	University of Queensland
Dr Aidan Byrne	Australian National University
Prof George Dracoulis	Australian National University
Dr Brian Robson	Australian National University
Dr Andrew Stuchbery	Australian National University
Dr Kevin Varvell	University of Sydney
A/Professor Tony Williams	Adelaide University
Dr Dennis Mather	AINSE

15th International Symposium of Radiopharmaceutical Chemistry - August 2003

Dr Andrew Katsifis	ANSTO
Mr Bill Burch	ANSTO
Dr Dennis Mather	AINSE
Ms Pam Keenan	ANSTO
Dr Stuart Carr	ANSTO
Dr Suzanne Smith	ANSTO
Dr Therese Donlevy	ANSTO
Ms Fiona Driver	Tour hosts

International Congress of Radiation Research 2003 Conference - August 2003

Professor Lester Peters, Conference President	Peter McCallum Cancer Institute
Professor Martin Lavin	Queensland Institute of Medical Research
A/Professor Ron Cooper	The University of Melbourne
Dr Roger Martin	Peter McCallum Cancer Institute
Dr Graeme Dickie	Queensland Radium Institute
Dr Suzanne Smith	ANSTO
Dr Dennis Mather	AINSE
Mrs Nola Miles-Clark	ICMS
Ms Jennae Stephens	ICMS

Financial Statements as at 31 December 2001

Auditors' Report

To the Members of the Australian Institute of Nuclear Science and Engineering
Incorporated

Scope

We have audited the attached special purpose financial report of the Institute for the financial year ended 31 December, 2001 as set out on schedules 1 to 9. The Institute's Executive Committee is responsible for the preparation and presentation of the financial report and the information contained therein, and have determined that the basis of accounting used is appropriate to the needs of the members. We have conducted an independent audit of the financial report in order to express an opinion to the members of the Institute on its preparation and presentation. No opinion is expressed as to whether the basis of accounting used is appropriate to the needs of the members.

The financial report has been prepared for distribution to members for the purpose of fulfilling the Executive committee's accountability requirements under the Institute's constitution. We disclaim any assumption of responsibility for any reliance on this report or on the financial report to which it relates to any person other than the members, or for any purpose other than that for which it was prepared.

Our audit has been conducted in accordance with Australian Auditing Standards. Our procedures included examination, on a test basis, of evidence supporting the amounts and other disclosures in the financial report and significant accounting estimates. These procedures have been undertaken to form an opinion as to whether, in all material respects, the financial report is presented fairly in accordance with the basis of accounting described in Note 1 to the Financial Statements. (These policies do not require the application of all Accounting Standards and UIG Consensus Views).

The audit opinion expressed in this report has been formed on the above basis.

Audit Opinion

In our opinion the financial report presents fairly, in accordance with Accounting policies described in note 1 to the financial statements, as well as the provisions of the Associations Incorporation Act 1984, the financial position of the Institute, as at 31 December, 2001 and the results of its operations and cash flows for the year then ended.

Gardner Escott & Co
Chartered Accountants



P R Escott
Partner

Sydney, dated this 25th

day, of February 2002

**Australian Institute of Nuclear Science and Engineering
Executive Committee's Report**

The Executive Committee of the Australian Institute of Nuclear Science and Engineering Incorporated submits the financial accounts of the Institute for the financial year ended 31 December 2001.

Committee Members

Associate Professor Ron Cooper, President
Professor Hans Coster, Vice President
Professor John White
Professor Helen Garnett
Dr Brian Spies
Professor Ann Henderson-Sellers
Dr Dennis Mather, Scientific Secretary

Principal Activities

The Principal activities of the Institute during the financial year were

- to carry out research and investigations in connection with matters associated with nuclear science and engineering;
- to arrange for the training of scientific research workers and the establishment and award of scientific research studentships in matters associated with nuclear science and engineering;
- to collect and distribute information relating to nuclear science and engineering.

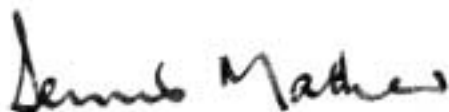
Significant Changes

No significant change in the nature of these activities occurred during the year.

Operating Result

The deficit for the year amounted to \$50,211.

Signed in accordance with a resolution of the Members of the Committee.



Dr Dennis Mather
Public Officer & Scientific Secretary
Dated this 25th day of February 2002

Balance Sheet

Schedule 1

as at 31 December 2001

	31 Dec 2000 Notes	31 Dec 2001 \$	31 Dec 2000 \$
CURRENT ASSETS			
Cash: (Refer schedule of committed cash in note 2)	2	122,068	54,564
Receivables	3	67,912	1,107,246
Investments	4	5,061,205	4,890,141
Other	5	900,513	45,697
Total Current Assets		6,151,698	6,097,648
NON-CURRENT ASSETS			
Plant and Equipment	6	39,777	45,626
Total Non-Current Assets		39,777	45,626
Total Assets		6,191,475	6,143,274
CURRENT LIABILITIES			
Creditors	7	826,068	817,546
External Grants Received in Advance	8	1,217,496	1,135,498
Member Payments Received in Advance	9	1,043,000	1,043,000
Provisions for Employee Entitlements	10	17,794	13,701
Total Current Liabilities		3,104,358	3,009,745
NON-CURRENT LIABILITIES			
Provisions for Employee Entitlements	10	24,803	21,005
Total Non-Current Liabilities		24,803	21,005
TOTAL LIABILITIES		3,129,161	3,030,750
NET ASSETS		3,062,314	3,112,524
EQUITY			
Awards Reserve	16	2,519,919	2,744,719
Long Term Projects Reserve		500,000	500,000
Accumulated results of operations		42,395	(132,195)
TOTAL EQUITY		3,062,314	3,112,524

Income and Expenditure Statement

Schedule 2

For the Period Ended 31 December 2001

	31 Dec 2000	31 Dec 2001	31 Dec 2000
	Notes	\$	\$
Cost of Services			
OPERATING EXPENSES			
Wages and Salaries		186,709	175,572
Superannuation		27,901	26,185
AINSE Awards			
Students	11	413,098	357,020
Research Awards	11	1,392,277	977,326
Conference Subsidies		51,655	57,234
External Grants	13	400,412	618,292
Other Expenses	14	165,780	178,196
Total Operating Expenses		2,637,832	2,389,825
OPERATING REVENUE			
Payments from Members		2,045,856	1,991,077
External Grants	13	250,292	470,691
Interest Received		276,748	247,310
Profit on sale of assets		-	-
Other	15	14,726	17,769
Total Operating Revenue		2,587,622	2,726,847
Surplus/(deficit) for the year		(50,210)	337,022
Accumulated funds brought forward		(132,195)	214,328
Funds Available		(182,405)	551,350
Less: transfer to Reserves			
Grants Reserve	16	(224,800)	683,545
Accumulated results of operations at end of financial year		42,395	(132,195)

Statement of Cash Flows

Schedule 3

For Period Ended 31 December 2001

	31 Dec 2000	31 Dec 2001	31 Dec 2000
	Notes	\$ Inflows/Outflows	\$ Inflows/Outflows
CASH FLOWS PROVIDED BY (USED IN) OPERATING ACTIVITIES			
Receipts from members		3,099,916	1,946,681
Receipts from grants		332,290	1,276,770
Interest received		278,449	253,803
Total		3,710,655	3,477,254
Outflows			
Grant expenditures		(1,907,442)	(1,659,872)
Payments to suppliers and employees		(1,554,585)	(360,716)
Total		(3,462,027)	(2,020,588)
Net cash flows provided by (used in) operating activities	17	248,628	1,456,666
CASH FLOWS PROVIDED BY (USED IN) INVESTING ACTIVITIES			
Outflows			
Plant and equipment		(10,061)	(4,702)
Net cash flows provided by (used in) investing activities		(10,061)	(4,702)
NET INCREASE IN CASH HELD		238,567	1,451,964
Cash at beginning of reporting period as at 31/12/00		4,944,705	3,492,741
Cash at end of reporting period		5,183,272	4,944,705
For the purposes of the Statement of Cashflows, the cash balance as at 31 December 2001 comprises Cash-Operating, Money Market and Other Deposits. A reconciliation of cash at the end of the reporting period to the Balance Sheet is set out as follows:			
Balance Sheet	Cash	122,068	54,564
	Investment	5,061,205	4,890,141
Cash Flow Statement		5,183,272	4,944,705

1. STATEMENT OF ACCOUNTING POLICIES

(a) Basis of accounting

These financial statements are a special purpose financial report prepared in order to provide accounts which satisfy the requirements of the Institute's constitution and the Associations Incorporation Act NSW to prepare accounts. The Executive Committee has determined that the Institute is not a reporting entity and therefore, as there is no requirement to apply Accounting Standards and other mandatory professional reporting requirements (Urgent Issues Group Consensus Views) in the preparation and presentation of these statements, they have been adopted only to the extent shown in Note 1 to the accounts.

The statements have been prepared in accordance with the requirements of the Associations Incorporation Act. The statements are prepared on an accrual basis of accounting. They are based on historic costs and do not take into account changing money values, or except where specifically stated, current valuations of non-current assets.

The Executive Committee has, however prepared the financial report in accordance with all Australian Accounting Standards with the following exceptions:

- AAS1 Profit and Loss or other operating statements
- AAS22 Related party disclosures
- AAS30 Accounting for employee entitlements

The accounting policies have been consistently applied, unless otherwise stated. The following is a summary of the significant accounting policies adopted by the Institute in the preparation of the financial statements.

(b) Depreciation of property, plant and equipment

Property, plant and equipment are stated at cost and depreciated over their useful lives using the straight line method.

(c) Employee Entitlements

Recreation Leave and Long Service Leave entitlements are provided for annually.

(d) Inventories

As at 31 December 2001 AINSE did not hold any inventory.

(e) Membership subscriptions

Membership subscriptions are paid to the Institute by its members.

(f) Grants

All grant monies received have been treated as a balance sheet item under the heading of 'Grants Received In Advance'. As money is expended on the grants the equivalent amount of expenditure is drawn down from the balance sheet to grants income.

Notes to the Financial Statements

Schedule 5

	31 Dec 2001	31 Dec 2000
	\$	\$
2. CASH		
Operating Account	121,568	54,064
Petty Cash	500	500
Total	122,068	54,564
Commitments for Expenditure		
Tandem	2,042,656	2,899,652
ISIS	25,000	25,000
Trade Creditors	826,068	817,546
EA/IRMS	340,000	-
Awards and Studentships Awarded in 2001 for payment in 2002 Note A	2,519,919	2,095,702
Total	5,753,643	5,837,900
Note A: Invoices for membership fees are raised in January and payment is subsequently received over the first three quarters. Grant reserve was established in line with advice from the auditors. Accordingly, funds received from membership fees in 2001 are used for grants and studentships during 2002.		
Note B: Existing studentships at 31 December 2001 and committed for years 2003 and 2004 amount to \$491,561.		
3. RECEIVABLES		
Trade Debtors	1,992	1,044,067
Other Receivables	65,920	63,179
Total	67,912	1,107,246
4. INVESTMENTS		
Cash Deposit Account	1,561,205	3,831,141
Term Deposit Account	3,500,000	1,059,000
Total	5,061,205	4,890,141
5. OTHER CURRENT ASSETS		
Prepayments	860,103	3,586
Interest Accrued	40,410	42,111
Total	900,513	45,697
6. PLANT AND EQUIPMENT		
Plant and Machinery		
Costs	92,265	92,265
Additions/(Disposals)	-	-
Accumulated Depreciation	75,655	65,066
Closing Written Down Value	16,610	27,200
Motor Vehicles		
Costs	27,366	24,072
Additions/(Disposals)	-	-
Accumulated Depreciation	4,199	5,645
Closing Written Down Value	23,167	18,427
Total	39,777	45,626

Notes to the Financial Statements

Schedule 6

	31 Dec 2001	31 Dec 2000
	\$	\$
7. CREDITORS		
AINSE - Trade Creditors	30,126	-
Other Creditors	1,832	-
GST Collected on Outputs	6,334	47,161
Accrued Charges - ISIS	400,000	400,000
Accrued Charges – Other	387,776	370,385
Total	826,068	817,546
8. EXTERNAL GRANTS RECEIVED IN ADVANCE		
AINSE ARC N/S Grant '99	113,729	113,729
AINSE ISIS Grant	-	-
AINSE Grant ARC Tandem	1,103,767	1,021,769
Total	1,217,496	1,135,498
9. MEMBER PAYMENTS RECEIVED IN ADVANCE		
AIINSE ISIS		
AINSE Tandem	1,043,000	1,043,000
	1,043,000	1,043,000
10. PROVISIONS FOR EMPLOYEE ENTITLEMENTS		
Current		
Recreation Leave	17,794	13,701
Non-Current		
Long Service Leave	24,803	21,005
Total	42,597	34,706
11. AINSE AWARDS		
AINSE AWARDS - Students		
Lucas Heights Costs	164,335	140,382
University Travel and Equipment	30,059	15,438
Stipends	205,788	191,250
AINSE Winter School	12,916	9,950
Total	413,098	357,020
AINSE AWARDS - Grants		
Lucas Heights Costs	1,248,060	825,921
Minor Equipment and Materials	500	3,560
Travel and Accommodation	85,524	94,654
University Costs	1,272	-
Other Costs	56,921	53,191
Total	1,392,277	977,326
12. SEGMENT REPORTING		

The Institute operates in the research sector providing funds for research to members within Australia and New Zealand.

Notes to the Financial Statements

Schedule 7

	31 Dec 2001	31 Dec 2000
	\$	\$
13. EXTERNAL GRANTS		
AINSE AMS GRANT '98 - UWA		
Grant Revenue	-	20,551
Grant Expenditure		
External Payments	-	23,153
Equipment and Materials	-	-
Contract Labour/Consultancies	-	-
Total Expenditure	-	23,153
AINSE ARC N/S GRANT '96		
Grant Revenue	-	130,000
Grant Expenditure		
Lucas Heights Costs	-	-
Equipment and Materials	-	130,000
Contract Labour/Consultancies	-	-
Total Expenditure	-	130,000
AINSE ARC ISIS GRANT		
Grant Revenue	250,292	370,001
Grant Expenditure		
External Payments	400,412	400,000
Equipment and Materials	-	-
Contract Labour/Consultancies	-	-
Total Expenditure	400,412	400,000
AINSE N/S GRANT '98		
Grant Revenue	-	65,139
Grant Expenditure		
External Payments	-	-
Equipment and Materials	-	65,139
Contract Labour/Consultancies	-	-
Total Expenditure	-	65,139
GRANTS - ARC TANDEM		
Grant Revenue	-	84,861
Grant Expenditure		
External Payments	-	-
Equipment and Materials	-	-
Contract Labour/Consultancies	-	-
Total Expenditure	-	-
RECONCILIATION		
Total External Grants Revenue	250,292	1,711,702
less transferred to Grants Received In Advance (Balance Sheet)	0	1,126,011
External Grant Revenue (Income and Expenditure Statement)	250,292	585,691
Represented by:		
Total Grant Expenditure (Income and Expenditure Statement)	400,412	618,292
Amount to be met by AINSE	(150,120)	32,601
External Grants Expenditure	250,292	585,691

Notes to the Financial Statements

Schedule 8

	31 Dec 2001	31 Dec 2000
	\$	\$
14. OTHER EXPENDITURE		
Conference Management	16,841	26,197
Publications and Promotions	16,108	13,467
Meetings and Committees	62,971	64,911
AINSE Secretariat		
Audit Fees and Bank Charges	5,400	5,004
Depreciation	15,909	20,714
Advertising and Printing	1,152	-
Office Supplies	2,733	3,895
Postage and Telephone	6,390	5,944
Insurance	10,130	8,816
Entertaining	2,471	2,111
Books and Software	378	450
Office Equipment Repairs	1,251	1,964
Administration and Staff Training	1,242	1,693
Other Travel	11,589	12,303
Building Maintenance	-	134
Vehicle Expenses	4,413	4,118
Loss on disposal of assets	32	-
FBT Expense and Payments	4,498	2,385
Miscellaneous	2,272	4,090
Total AINSE Secretariat	69,860	73,621
Total Other Expenditure	165,780	178,196
15. OTHER INCOME		
Conferences	3,155	10,324
Miscellaneous	141,571	7,445
Total Other Income	144,726	17,769
16. MOVEMENT IN RESERVES		
Awards Reserve		
Transfer 2001/2000 research grants committed	(224,800)	683,545
Transfer from accumulated funds	-	-
17. RECONCILIATION OF OPERATING RESULT WITH CASHFLOWS FROM OPERATIONS		
Surplus/(deficit) for the year	(50,210)	337,022
Movements in Balance Sheet		
(Increase)/Decrease in Receivables	1,039,334	(1,105,165)
Increase/(Decrease) Creditors	8,522	345,332
(Increase)/Decrease Accrued Interest	1,701	6,493
(Increase)/Decrease Prepayments	(856,517)	415
Increase/(Decrease) Employee Entitlements	7,891	2,776
Increase/(Decrease) Other Current Liabilities	-	-
Increase/(Decrease) Grants Received in Advance	81,998	1,849,079
	282,929	1,098,930
Non-Cash Items		
Depreciation	15,909	20,714
Gain on sale of asset	-	-
	15,909	20,714
Net cash provided by (used in) operating activities	248,628	1,456,666

AINSE Postgraduate Research Awards

To nominate for one of these awards, an applicant must hold an Australian Postgraduate Award (APA) or equivalent scholarship. In addition to providing a student with a tax-free supplement for up to three years, the award gives additional access to ANSTO's world-class facilities and expertise. The stipend is \$7500 per annum and \$5500 per annum is provided towards the costs involved in using Lucas Heights facilities. Travel and accommodation costs are also provided to enable students to work at Lucas Heights.

Twelve new AINSE postgraduate research projects were supported by an Award that commenced during 2001. Through its postgraduate research award scheme, AINSE has now helped train 187 students in aspects of nuclear science and associated techniques of analysis. Many more students have been assisted with their research by gaining access to Lucas Heights facilities through AINSE Awards made to their supervisors. Council believes that one of the most valuable roles fulfilled by AINSE is the provision of these AINSE Postgraduate Research Awards.

Projects Supported During 2001

The self assembly of phospholipid dispersions

Karen Aberdeen Science, University of Queensland. Commenced 2/3/98

The impact of residue returns with varying breakdown rates on soil carbon fractions, carbon sequestration and the physical fertility of soils

Nelly Blair Agronomy and Soil Science, University of New England. Commenced 1/2/00

Covalent anchoring of lipid bilayers to solid supports for studies of molecular interactions at biological membranes

Till Böcking Biophysics, University of New South Wales. Commenced 01/01

Monitoring of freshwater heavy metal contamination using turtle shell

Carol Browne Centre Integrated Catchment Management, University of Western Sydney. Commenced 16/2/00

Bulk and grain boundary transport kinetics of TiO₂-based ceramics

Tristan Burg Materials Science and Engineering, University of New South Wales. Commenced 01/02/01

Biom mineralisation in caves

Annalisa Contos School of Chemistry, University of Sydney. Commenced 23/2/99

Utilising a heavy ion probe in the development of semiconductor nanodosimetry for radiation oncology.

Iwan Cornelius Engineering Physics, University of Wollongong. Commenced 1/1/00

Elemental structure of fine particulates from the Asian continent under differing meteorological conditions

Fiona Dick Geography and Environmental Science, University of Newcastle. Commenced 1/3/01

An integrated approach to quantifying rates of escarpment retreat using in-situ-produced cosmogenic isotopes and low temperature thermochronologic data

Vicki-Ann Dimas Earth Sciences, University of Melbourne. Commenced 31/3/01

An environmental record of the last quarter of a million years from eastern Australia

Nicola Franklin Geography, University of Sydney. Commenced 2/3/98

Donor-acceptor compounds as potential radiation-activated cytotoxins

Alison Funston Chemistry, University of Melbourne. Commenced 2/2/98

The impact of igneous intrusions on coal mining and the alienation of coal reserves

Alexandra Golab Geosciences, University of Wollongong. Commenced 1/3/00

Site formation processes of prehistoric mounds, Upper Mun River Floodplain, north-east Thailand

Jeremy Habberfield-Short Resource Science and Management, Southern Cross University. Commenced 1/1/01

Human response to shifts in environmental boundaries in the Sydney Basin during the Holocene

Rosalind James Human and Environmental Studies, University of New England. Commenced 3/2/00

Removal of arsenic and other heavy metals associated with mine wastewater by dissimilatory sulfate and metal reduction

Tony Jong Science Information, Technology Education, Northern Territory University. Commenced 31/3/01

Crucible corrosion in the melt processing of ceramic oxide superconductors

Nigel Kirby Applied Physics, Curtin University of Technology. Commenced 21/2/00

Nutrient cycling in a tropical macrotidal environment

Megan Langeveld Mathematical and Physical Sciences, Northern Territory University. Commenced 30/5/99

Investigation of crystallisation of scale in the Bayer Process

Jennifer Lowe Applied Chemistry, Curtin University of Technology. Commenced 1/4/00

Investigation of interaction of artificial pinning centres with magnetic flux lines in high temperature superconductors

Damian Marinaro Radiation Physics Group, University of Wollongong. Commenced 8/1/99

Trace element variability in speleothems: a total system model for palaeoclimatic reconstruction based on stalagmites and karst systems from central NSW

Janece McDonald Geography and Environmental Science, University of Newcastle. Commenced 26/2/01

Hydrogen in metallic and metal-like systems

Keith McLennan School of Science, Griffith University. Commenced 17/1/00

Elucidation of the biophysical behaviour of Quadramet (samarium-EDTMP) as a therapeutic radiopharmaceutical

Danielle Meyrick Science and Engineering, Murdoch University. Commenced 1/1/01

Transition alumina structure determination from first principle calculations

Gianluca Paglia Applied Physics, Curtin University. Commenced 31/3/01

The identification of temporal changes to palaeo-vegetation types and prehistoric human land-use in the Numundo region of West New Britain, PNG, integrating fossil phytolith and starch grain analysis

Jeffrey Parr Resource Science and Management, Southern Cross University. Commenced 1/1/01

Environmental analysis using ion-selective electrodes

Bobby Pejic Applied Chemistry, Curtin University of Technology. Commenced 8/3/00

Characterisation of strontium binding with the hydration products of cementitious systems cured at elevated temperatures

Vanessa Peterson Materials, Chemistry and Forensic Science, University of Technology Sydney. Commenced 21/2/00

Ceramic production and exchange in the early and later historic periods at Akra, NWFP Pakistan

Cameron Petrie Archaeology, University of Sydney. Commenced 1/2/00

The use of x-ray and neutron small angle scattering to elucidate the structure and mechanism of formation of aluminosilicate hydrogels

John Phair Chemical Engineering, University of Melbourne. Commenced 1/1/01

Dynamic susceptibility of transition metal alloys by neutron scattering

David Robinson Physics, Monash University. Commenced 9/2/98

Disordered and low dimensional magnetic systems

Kirril Rule Physics, Monash University. Commenced 4/3/00

Development of stable magnetic photocatalysts for the solar detoxification of organic polluted water

Timothy Tan Chemical Engineering and Industrial Chemistry, University of New South Wales. Commenced 28/2/00

Mobilisation of heavy metals from metal sulfides in aquatic environments

Jeffrey Tsang Science Information, Technology Education, Northern Territory University. Commenced 31/3/00

Ab initio structure determination of minerals and inorganic materials by powder x-ray and neutron diffraction

Kia Wallwork Science and Engineering, Flinders University. Commenced 7/2/01

Geoarchaeological interpretation of sandstone landscapes in the Keep River region, Northern Territory

Ingrid Ward Geosciences, University of Wollongong. Commenced 1/7/00

Summary of AINSE Awards

The primary purpose of AINSE awards is to facilitate access by university researchers and research students to the nuclear science and technology facilities at Lucas Heights, including travel and accommodation during periods of attachment. These awards are principally in the form of "credits" against which payments are made by AINSE on behalf of the award holder on receipt of appropriate invoices. In this manner, some allowance can be made for the uncertainties associated with research. This enables AINSE to achieve the high degree of flexibility and control needed to ensure the allocation of time on the facilities is fully utilised. AINSE awards very often provide the valuable initial support which leads to additional external funding, estimated to have been worth several million dollars to member organisations.

The disciplines involved include:

physics applied, electronic materials, mathematical, nuclear and high energy, plasma

chemistry applied, biochemistry, chemical technology, polymer science

engineering chemical, electrical, mechanical, microelectronics

biology biological science, biomaterials, biomedical science and engineering, biophysics, genetics

environmental and earth sciences environmental biology, environmental geology, geochemistry, geography, information, coastal management, marine science

medicine medical and health physics, nuclear, positron emission tomography

plus Aboriginal and Torres Strait Studies, Antarctic and Southern Ocean studies, anthropology, applied geology, archaeology, botany, cultural studies, earth sciences, geology, geophysics, geomorphology, materials science and engineering, microscopy and microanalysis, natural history, resource science and management, safety science, zoology.

The list of projects and awards for 2001 are shown in the accompanying tables arranged in order of university, faculty and project number to highlight the diversity of institutions and disciplines within which projects occur.

This includes arrangements for general research students' access to Lucas Heights facilities but does not include access arrangements for AINSE postgraduate scholars, see page 19. The total amount of the awards for each university is also shown. Nearly all of these projects involved close cooperation between university people and ANSTO staff and required substantial use of the reactor, accelerators and other facilities at the Lucas Heights Research Establishment.

For information on particular facilities utilised, see progress reports are published on our home page. www.ainse.edu.au

During 2001 two hundred and three projects were awarded to a value of \$1,595,570 involving thirty-five of the thirty-seven member universities. The table on the following page shows the distribution of awards by university and by specialist areas.

About 20 per cent of 2001 award holders listed on pages 23-35 have indicated that their research related to these awards has industry linkages. These awards are indicated by an asterix "*" beside the name of the award holder.

University *	Specialist Area *								Total
	ACC	AMS	ENV	ISO	MAT	NS	PLA	RAD	
ACU			1						1
ADE		1	2			1			4
AKL	1	1	1		2				5
ANU	1	3		1		2			7
BAL		1							1
CBR							1		1
CQU			2						2
CUR			1		1	7			9
DEA				1					1
ECU	2								2
FLI		2			1		1		4
GRI	1					1			2
JAM		2	1						3
LAT	1	1	2		1				5
MAC	1		3					1	5
MEL	2	1		6		1		1	11
MON	1	3	2	3		4			13
MUR	1	1		2					4
NCT		4	1	1	1	2			9
NSW	1	1	2	2	6	1		1	14
NTU		1	1		1				3
QLD						1		2	3
QUT		2	1		1				4
RMI	5			1	1	2			9
SCU		3							3
SWI	1		1			1			3
SYD	4	10	2	3		6	1	2	28
TAS	1	1	5	1					8
UNE	3	2			1				6
USA	3		2		1				6
UTS			3						3
UWA	1		1						2
UWS	2			1			1	2	6
WOL		7	4	1	2	1		1	16
Total	32	47	38	23	19	30	4	10	203

* see abbreviations on page 63

Australian Catholic University

Arts and Sciences, NSW

01/202S	Dr Neil Saintilan Comparison of contemporary and historic rates of sedimentation in saltmarsh environments	\$5,325
Australian Catholic University Total		\$5,325

Australian National University

Research School of Pacific and Asian Studies

01/057	Professor Jack Golson Dating early agriculture in Melanesia (continued)	\$8,500
01/074	Professor Geoffrey Hope Improvement of chronology of tropical environmental change	\$5,360
01/111	Dr Susan O'Connor The dating of human arrival in East Timor	\$5,360
01/134	Dr Glenn Summerhayes Sourcing of prehistoric obsidian from the reef/Santa Cruz Lapita assemblages, Solomon Islands	\$11,100

Research School of Earth Sciences

01/007	Dr Andrew Berry Refinement of hydrogen positions in natural titanian-clinohumite by powder neutron diffraction	\$2,400
01/100	Professor Ian McDougall ⁴⁰ Ar/ ³⁹ Ar age determination of rocks	\$6,790

Research School of Chemistry

01/061	Dr Richard Welberry A study of dynamically disordered materials using diffuse neutron scattering	\$9,240
Australian National University Total		\$48,750

Central Queensland University

Arts, Health and Sciences

01/075	* Ms Roslyn Howse Archiving acid mine drainage impacts on mussels in the Dee River, downstream of the Mount Morgan Mine	\$22,531
01/140	Dr Vicky Vicente-Beckett Heavy metals in sediments of Port Curtis estuary (Gladstone Harbour, Queensland)	\$3,000
Central Queensland University Total		\$25,531

Curtin University of Technology

Engineering and Science

01/024	Dr Craig Buckley SANS measurements on iron loaded mammalian tissues	\$4,200
01/217	Dr Craig Buckley An exploratory small angle neutron scattering study of cobalt nanoparticles in polymeric fluids	\$2,100
01/172	Dr Roland De Marco SIMS characterisation of a mercury chemical sensor in environmental waters	\$7,403
01/173	Dr Roland De Marco The supramolecular chemistry of the iron chalcogenide glass chemical sensor	\$3,903
01/090	Dr It-Meng Low Isothermal ageing of partially-stabilized zirconia	\$11,796
01/091	Dr It-Meng Low Microstructural design of Ti ₃ SiC ₂ /TiC bilayers with graded interfaces	\$3,550
01/112	Professor Brian O'Connor Diffraction-based modelling of crystallite strain fields in ceramic microstructures	\$12,538

01/128	Dr Mahua Singh Damage resistance properties of graded alumina-based composites with tailored microstructures	\$9,523
01/199	Dr Arie Van Riessen The influence of pressure and temperature on the microstructure of zirconia-dispersed alumina	\$11,796
	Curtin University of Technology Total	\$66,809

Deakin University

Biological and Chemical Sciences

01/125	Dr Peter Scammells ENX analogs with improved bioavailability	\$13,130
	Deakin University Total	\$13,130

Edith Cowan University

Engineering and Mathematics

01/072	Dr Stephen Hinckley Ion implanted PN junctions in silicon for charge contrast imaging analysis	\$7,258
01/073	Dr Stephen Hinckley Composition analysis of HgCdTe RIE photodiodes before and after electron imaging	\$7,361
	Edith Cowan University Total	\$14,619

Flinders University

Science and Engineering

01/192	Dr Corinne Le Gal La Salle Carbon-14 and chlorine-36 as tracers of brines in salt harvesting schemes and groundwater discharge areas	\$6,700
01/127	Dr Joseph Shapter Large scale imaging of ultraflat metal substrates	\$3,390
01/133	Professor Robin Storer Resistive magnetohydrodynamics for Heliacs	\$2,552

Education, Humanities, Law and Theology

01/189S	Dr Donald Pate Radiocarbon dating of bone collagen: establishing a chronology for the Swanport Aboriginal burial ground, South Australia	\$5,100
	Flinders University Total	\$17,742

Griffith University

Environmental Science

01/029	Dr Andrew Chan A comparison of the contributions of natural sources and human activities to airborne particles in Brisbane	\$12,305
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Science

01/064P	A/Professor Evan Gray Carbon-based hydrogen storage	\$1,938
	Griffith University Total	\$14,243

James Cook University

Arts, Education and Social Sciences

01/144	* Dr Alan Watchman Trace element chemistry of layered rock coatings	\$3,760
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Science and Engineering

01/042P	Dr Gerald Dickens Evolution of the North Queensland continental margin between Townsville and Cairns	\$5,360
01/204S	Dr Gerald Dickens Trace element variation and mass volume changes of banded iron formation and shale across the Hamersley Province, Western Australia: implications for iron-ore genesis	\$2,400
James Cook University Total		\$11,520

La Trobe University

Humanities and Social Sciences

01/037P	Dr Richard Cosgrove Direct AMS dating of megafauna bone	\$4,250
01/040	Dr Phillip Edwards Patterns of trade and exchange in the pre-pottery neolithic of Jordan	\$7,900

Science, Technology and Engineering

01/096	A/Professor Alan Marshall SIMS analysis of calcium transport in corals	\$23,630
01/118P	A/Professor John Riley Diffusion process and concentration profiles in semiconductor structures	\$17,804
01/185S	Dr John Webb Quantification of groundwater discharge of salt in a local groundwater system, using isotopic techniques	\$2,650
La Trobe University Total		\$56,234

Macquarie University

Science and Technology

01/025	Dr Kenneth Butcher Defect and impurity studies of gallium nitride and alloyed semiconductors grown at low temperatures	\$7,220
01/056	Dr Ewa Goldys Oxygen and hydrogen content in gallium nitride grown by hydride vapour phase deposition, metalorganic chemical vapour deposition and molecular beam epitaxy	\$2,800
01/218	* Dr Damian Gore Phytoextraction of chromium; screening native plants for Cr hyperaccumulation	\$2,100
01/065	Dr Ian Guy Radiation effects on electro-mechanical and electro-optic properties of ferroelectric polymers	\$5,460
01/068	Dr Paul Hesse Determining the distribution and rate of sedimentation around distributory channels in the Macquarie Marshes and its role in channel avulsion	\$12,220
Macquarie University Total		\$29,800

Monash University

Arts

01/066	Dr Simon Haberle Impact and timing of catastrophic disturbance events in Papua New Guinea: tephrochronology and fine-resolution biotic change recorded in an alpine lake	\$9,775
01/067	Dr Simon Haberle Timing and nature of European impact on a remote eastern oceanic island: fine-resolution palaeoecology of Masafuera, Juan Fernandez Archipelago, Chile	\$8,875
01/084	Professor Peter Kershaw AMS radiocarbon dating of a high resolution record of the last glacial period from Caledonia Fen, eastern highlands of Victoria	\$5,360

01/085	Professor Peter Kershaw A high resolution, multi-proxy study of pre- and post-European settlement periods in the Yarra River catchment, Victoria	\$6,765
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Engineering

01/035C	* A/Professor Wayne Cook Design and SANS analysis of IPNs with controlled structure	\$5,070
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Medicine

01/181	Dr Andrew Lawrence Autoradiographic localization of corticotropin-releasing factor, type 2 (CRFR2) in the rat brain	\$14,610
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Science

01/008	* Dr Frank Bierlein Element mobility in alteration haloes associated with disseminated gold mineralisation in slate belts	\$8,000
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01/219	A/Professor John Cashion Structure, bonding and magnetic properties of sorbed metal species and novel materials	\$2,000
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01/069	Dr Trevor Hicks Disordered and low dimensional magnetic systems	\$26,210
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01/070P	Dr Trevor Hicks Neutron spectroscopy of heavy fermion systems near quantum critical points	\$12,200
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01/159C	Dr Trevor Hicks Static and dynamic atomic and magnetic correlations in metallic alloys	\$12,480
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01/103	Dr Derry McPhail Heavy metal distribution in Australian plant structures	\$14,215
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01/214	Dr Andrea Robinson Development of new peptide radiopharmaceuticals for diagnosis and therapy of cancer	\$12,052
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Monash University Total **\$137,612**

Murdoch University

Science and Engineering

01/191S	Dr Jenny Davis Palaeo-environmental record from the Jewel Cave	\$4,200
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01/087P	Dr Rolf Koch PIXE analysis of refractory gold ores	\$19,241
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01/145	* Professor John Webb Samarium-153 and lutetium-177 bifunctional tumour-targeting chelating agents for radioimmunotherapy	\$13,558
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01/146	* Professor John Webb Samarium/bone interactions	\$5,028
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Murdoch University Total **\$42,027**

Northern Territory University

Science, Information, Technology and Education

01/198S	A/Professor David Parry Investigation of extraction recoveries in the analysis of rare earth elements (REE) in sediments	\$1,560
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01/212	A/Professor David Parry Mobilisation of heavy metals from metal sulfides in aquatic environments	\$840
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Key Centre for Tropical Wildlife Management

01/010	* Dr David Bowman The use of carbon isotopes (¹³ C, ¹⁴ C) in soil to evaluate late Quaternary rainforest dynamics in the Australian monsoon tropics	\$4,020
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Northern Territory University Total **\$6,420**

Queensland University of Technology

Science

01/019	Dr Brendan Brooke Sedimentation rates in Moreton Bay during the middle to late Holocene: identifying rates of infill prior to European settlement	\$5,360
01/039	Dr Malcolm Cox Dating method testing and chronology of indurated sands layers in Moreton Bay region	\$1,340
01/149P	Dr Kelley Whitaker Imposex in <i>Bembicium auratum</i> (gastropoda): its occurrence and relationship with tri-butyl tin contamination in southeast Queensland	\$3,595

Built Environment and Engineering

01/005P	* A/Professor John Bell Increasing the efficiency of dye-sensitised titania photovoltaic cells	\$12,445
Queensland University of Technology Total		\$22,740

RMIT University

Applied Science

01/183S	Dr Suresh Bhargava Mineral phases in natural bauxite	\$500
01/187	Dr Peter Daivis Polymer conformation and compatibility using scattering techniques	\$3,500
01/078	Professor Peter Johnston Compton scattering from inner-shell electrons of heavy elements	\$2,000
01/079P	Professor Peter Johnston Plural scattering, multiple scattering and energy loss straggling studies of heavy ions in condensed matter	\$8,730
01/098	Dr Dougal McCulloch A consistent analysis of the microscopic and mesoscopic structure of disordered carbon based solids	\$8,570
01/099	Dr Dougal McCulloch Surface engineering of polymers	\$8,992

Engineering

01/130	Professor Dinesh Sood Ion beam modification and characterisation of thin films of smart materials suitable for micromachine technology	\$14,060
01/131P	Professor Dinesh Sood Nano-phases in materials produced by ion implantation and magnetron sputtering and their characterisation	\$14,145
01/143P	Dr Liam Ward Modification of metal nitride coated tool steel substrates using MEVVA implantation for improved wear resistance	\$15,440
Royal Melbourne Institute of Technology Total		\$75,937

Southern Cross University

Environmental Science and Management

01/012	Professor Bill Boyd Site formation and chronology of prehistoric moated sites in the upper Mun River Valley, NE Thailand	\$6,700
01/013	Professor Bill Boyd Geochronology of Garu swamp, West New Britain, PNG	\$3,350

01/014	Professor Bill Boyd Dating fossil opal phytoliths from Garua Island, West New Britain, for determination of phytolith assemblage chronology	\$2,680
	Southern Cross University Total	\$12,730

Swinburne University of Technology

Engineering and Science

01/033P	Dr Khim Chu A SIMS investigation of multi-metal adsorption on seaweed biomass	\$6,215
01/179	* Dr Kerry McManus Study of the sound absorption/reflection properties of recycled aggregate concrete (RAConcrete) and their relationship to the structural properties	\$6,385

IRIS

01/170	Dr Muralidhar Ghantasala Characterisation of wear resistant coatings deposited on electroplated shims used for the replication of microsystems	\$16,290
	Swinburne University of Technology Total	\$28,890

University of Adelaide

Agricultural and Natural Resource Sciences

01/080	* Dr Graham Jones Determination of carbon-14 in red wine fractions	\$8,040
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Science

01/021	Dr Joel Brugger History of uranium, thorium, and rare earth element mobility around a highly radioactive granite: dating secondary U-minerals in the Mt Painter province	\$16,160
01/114	* Professor John Prescott Low level uranium and thorium determinations for luminescence dating	\$1,925
01/115	* A/Professor Allan Pring Exsolution and cation ordering in iron nickel sulfides	\$9,610
	University of Adelaide Total	\$35,735

University of Auckland

Science

01/009	Professor Graham Bowmaker Solid state nuclear magnetic resonance spectroscopy	\$9,330
01/002	Dr Paul Augustinus Timing and nature of environmental change, Macquarie Harbour, Tasmania	\$8,200
01/169	Dr Elisabeth Sikes Coral-based estimation of modern deep-water radiocarbon ages in New Zealand waters	\$8,040

Geological and Nuclear Sciences

01/094	Dr Andreas Markwitz Heavy ion elastic recoil detection analysis of light elements including hydrogen and helium in nanostructured materials	\$24,360
01/095	Dr Andreas Markwitz Formation of highly cavitated surfaces produced by Pulsed-Plasma Immersion Ion-Implantation (PI ³)	\$6,000
	University of Auckland and GNS Total	\$55,930

University of Ballarat

Science and Engineering

01/148	A/Professor Martin Westbrooke Regeneration status of Belah woodlands in south-eastern Australia	\$5,100
	University of Ballarat Total	\$5,100

University of Canberra

Management and Technology

01/030P	A/Professor Andrew Cheetham Australian Fusion Research Group Collaboration	\$4,308
	University of Canberra Total	\$4,308

University of Melbourne

Arts

01/048	A/Professor Brian Finlayson Landscape evolution in Gippsland from cosmogenic burial dating of sediments	\$8,400
01/124	A/Professor Antonio Sagona Cultural interaction in late prehistoric Trans-Caucasus	\$18,950
01/213	Dr Claudia Sagona Clays of Punic Malta (900 BC - 200 AD)	\$10,800

Engineering

01/178	Professor Jannie Van Deventer The use of small angle and quasi-elastic neutron scattering to elucidate the structure and mechanism of formation of geopolymers	\$5,800
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Science

01/026	* A/Professor James Camakaris Use of radiocopper in the investigation of copper homeostasis in genetic diseases of copper transport and in Alzheimer's disease	\$14,810
01/036	A/Professor Ron Cooper Radiolytic degradation of halocarbon contaminated waters	\$6,000
01/055	* Professor Andrew Gleadow The application of fission track analysis to fundamental problems in the earth sciences	\$9,000

Medicine

01/175S	* A/Professor Roger Martin Induction of DNA strand breaks by ¹²³ I decay	\$5,500
01/121	Dr Christopher Rowe Diagnosis of diffuse lewy body dementia with ¹²³ I-β-CIT SPECT	\$24,720
01/122	Dr Christopher Rowe Localisation of epileptic foci in patients displaying normal or inconclusive MRI	\$15,000
01/164C	Dr Christopher Rowe Localisation of temporal lobe epileptic foci in patients displaying normal or inconclusive MRI	\$4,200
	University of Melbourne Total	\$123,180

University of New England

Human and Environment Studies

01/062P	Dr Peter Grave The Manila Galleon trade: PIXE/PIGE characterisation of the large storage jars	\$9,795
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01/063P	Dr Peter Grave PIXE/PIGE characterisation of Roman fine wares from Gordion, Central Turkey	\$8,131
01/209	Dr Peter Grave Evaluating an evolutionary typology: AMS dating of earthworks from Northern Thailand	\$8,040
01/200	* Dr Robert Haworth Determination of mid Holocene sedimentation rates from wetlands in south east Australia using AMS dating as an indicator of environmental and land use change	\$15,586
01/161C	Dr Pamela Watson PIXE/PIGE characterisation of late Roman pottery from a kiln site in the north Jordan Valley, Jordan	\$6,013

Physics and Electronic Engineering

01/047	A/Professor Matthew Fewell Low-pressure rf-plasma nitriding of aluminium alloys	\$13,696
	University of New England Total	\$61,261

University of New South Wales

Engineering

01/168C	Dr Ian Acworth Groundwater flux investigation in the hyperheic zone of a coastal sand dune aquifer at Hat Head	\$5,000
01/038	Professor Masud Behnia Modelling of low-pressure subcooled flow boiling using RELAP5 computer code	\$4,100
01/022	* A/Professor Michael Brungs Sol-gel processing for porous silica antireflective coatings	\$1,420
01/201	Professor Robert Burford Interpenetrating polymer networks from thermoplastic elastomers using radiation polymerisation techniques	\$2,650
01/105	A/Professor Bruce Milthorpe Properties of calcium phosphate/calcium carbonate ceramics after hot isostatic pressing	\$3,600
01/132	* Professor Charles Sorrell Processing and characterisation of novel materials based on TiO ₂	\$8,400
01/153P	* Dr Dianne Wiley AFM analysis of non-fouling membrane coatings	\$2,020

Medicine

01/157	Dr Hala Zreiqat Modulation of osteogenesis by surface chemistry modification of bioceramics using ion implantation technology	\$11,200
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Science

01/210	A/Professor Alberto Albani The reservoir effect in the Lagoon of Venice, Italy	\$5,360
01/177	Dr Jerzy Jankowski Vertical arsenic hydrogeochemistry in an Australian coastal sands aquifer	\$5,600
01/174S	Dr Glen Stewart High speed Mössbauer investigation of rare earth based materials	\$900
01/027P	* Professor Stewart Campbell Mechanochemical transformations in γ -Fe ₂ O ₃	\$6,580
01/076	Dr Wayne Hutchison Applications of nuclear magnetic resonance on oriented nuclei (NMRON) to solids	\$780
01/058	* Dr Justin Gooding A fundamental investigation of the immobilisation of enzyme onto self-assembled monolayers	\$6,610
	University of New South Wales Total	\$64,220

University of Newcastle

Science and Mathematics

01/139S	Dr Robert Burns Neutron diffraction studies of soluble $[\text{PMo}_{12}\text{O}_{40}]_3$ - based oxidation-reduction catalysts	\$4,237
01/034	Professor Eric Colhoun Glacial interglacial climate and vegetation changes of the Clarence Lagoon - Lake St Clair region	\$5,100
01/046	Dr Russell Drysdale Exploratory uranium-series dating of cave deposits from Borenore and Jenolan Caves, NSW	\$9,694
01/059	Dr Ian Goodwin Late Holocene coastal evolution at Trial Bay, mid north coast, and Woody Bay, far north coast, NSW	\$6,030
01/060	Dr Ian Goodwin Late Holocene evolution of Belongil Spit, far north coast, NSW	\$6,030
01/188	Dr Ian Goodwin Mid to late Holocene coastal evolution of the mid north coast, NSW	\$2,680
01/141	A/Professor Ellak Von Nagy-Felsobuki Clusters of sulfur	\$5,016

Mechanical

01/043P	Dr Lyazid Djenidi Rough wall turbulent boundary layers	\$4,651
01/086	A/Professor Erich Kisi <i>In-situ</i> neutron diffraction study of materials in simulated service or synthesis environments	\$32,789
	University of Newcastle Total	\$76,227

University of Queensland

Science

01/152P	Dr Andrew Whittaker Small angle neutron scattering studies of hydrogel block copolymers	\$5,090
01/006	Dr Paul Bernhardt Single electron transfer reactions of multi-redox centre complexes	\$5,970
01/071	A/Professor David Hill Radiation chemistry of polymers	\$4,585
	University of Queensland Total	\$15,645

University of South Australia

Health Sciences

01/041P	* Dr David Davey Scanning probe microscopy of aluminium complexes with selected ligands and natural organic matter	\$3,470
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Ian Wark Research Institute

01/053	* Dr Andrea Gerson SIMS investigations of surface modification on leaching of sulfide minerals	\$14,870
01/088	Dr Sunil Kumar Elastic recoil detection analysis (ERDA) of highly transparent carbon nitride thin-film coatings	\$8,720
01/162C	Dr Sunil Kumar Characterisation of plasma nitrated aluminium and aluminium-silicon alloy surfaces by RMA and PIXE	\$9,203
01/129	Dr Bill Skinner Mechanism and kinetics of silicate dissolution	\$7,400

Information Technology, Engineering and the Environment

01/147	Dr Bruce Wedding Quantification in surface analysis of mixed mineral systems	\$6,620
	University of South Australia Total	\$50,283

University of Sydney

Arts

01/196	Dr Stephen Bourke Dating the Ghassulian Chalcolithic period in the archaeology of the southern Levant	\$4,690
01/049	A/Professor Roland Fletcher A pilot ¹⁴ C chronology of the environmental and residential history of Angkor in Cambodia (9th to 16-17th century AD)	\$8,040
01/050	A/Professor Roland Fletcher AMS dating of carbon samples from Bagan and related first and early second millennium sites, Myanmar	\$1,340
01/092	Dr Peter Magee AMS dating and ceramic economy of the protohistoric/early historic transition in north-west Pakistan	\$12,100
01/186S	Professor Daniel Potts AMS dating of wild camel footprints from Urq bani Ma'Arid, Saudi Arabia	\$4,250
01/150	* Dr Peter White Using PIXE-PIGE to assess a population migration in the recent past of West New Britain, PNG	\$10,800
01/151	* Dr Peter White Dating human recolonisation following three volcanic eruptions in West New Britain, Papua New Guinea	\$5,360
01/211	* Dr Peter White Refining the accuracy of obsidian source determination by PIXE-PIGE in the Bismarck Archipelago	\$10,800

Engineering

01/081	A/Professor Jock Keene Calculation of sedimentation rates in the eastern Manus Basin using carbon-14 dating, Papua New Guinea	\$6,700
01/138P	Dr Marjorie Valix <i>In-situ</i> kinetic study of laterite reduction	\$1,440

Science

01/176	Dr Gavin Birch Trace metal partitioning between particulate and dissolved phases in Port Jackson estuarine waters: radiochemical experiments	\$5,125
01/044	Dr Denise Donlon Radiocarbon (AMS) dating of a skeleton of forensic interest	\$670
01/166C	Dr Denise Donlon Dietary analysis of 19th century juvenile human skeletal remains using trace element analysis	\$9,700
01/045	A/Professor Deirdre Dragovich Late Holocene rates of floodplain accretion in bedrock-confined, forest streams	\$10,050
01/190S	Dr Stephen Gale Human impact on the Australian environment over the last two millennia	\$4,100
01/197S	Mr Christopher Garvey Small angle neutron scattering from red blood cells	\$5,605
01/054	* Professor Robert Gilbert Polymerisation of rubbery polymer colloids	\$2,000

01/180S	Dr David Hibbs Experimental charge density studies of flavonoids	\$2,450
01/205S	Dr David Hibbs Experimental charge density study of N-methylphenylnitron	\$4,900
01/077	A/Professor Brian James Measurement of electric fields in the H-1NF Helic	\$2,020
01/082	A/Professor Brendan Kennedy Crystal structures and transitions in the PrAlO ₃ -SrZrO ₃ solid solutions	\$19,680
01/083	A/Professor Brendan Kennedy Structural properties of bismuth containing oxides	\$24,580
01/089	Professor Len Lindoy Copper-64 radiolabelling of antibodies using linked tetraaza macrocyclic chelators for use in imaging and therapy	\$9,030
01/109	Professor Don Napper Gamma radiation induced polymerisation	\$720
01/142P	Dr Simone Vonwiller Development of radiopharmaceuticals for the diagnosis and treatment of metastatic melanoma tumours	\$9,040
Medicine		
01/194C	* Dr George Larcos β-CIT study of drug-induced Parkinsonism (DIP)	\$6,650
NWG Macintosh Centre for Quaternary Dating		
01/003	A/Professor Mike Barbetti Radiocarbon calibration in the Younger Dryas chronozone, 13,000-11,600 years ago: AMS measurements on huon pine tree rings from Tasmania	\$34,000
01/004	A/Professor Mike Barbetti Glass technology in the Near East, before 1000 BC	\$7,280
	University of Sydney Total	\$223,120

University of Tasmania

Science and Engineering

01/101P	A/Professor Andrew McMinn Recent introduction of <i>Gymnodinium catenatum</i> to Cowan Creek, NSW	\$7,001
01/102P	A/Professor Andrew McMinn Heavy metal concentration in diatom frustules from an Antarctic contaminated site (a pilot study)	\$2,800
01/106	Ms Iona Mitchell Impact of catchment changes on the ecology of the Pittwater estuary	\$8,200
01/116P	* Dr Aung Pwa Geochemical signatures of acid insoluble residues of rock and regolith in search for gold and base metal deposits	\$18,076
01/171C	Dr Catherine Samson Changes in Tasmanian estuarine and sheltered marine ecosystems since European settlement: impacts of human activity	\$14,765
01/195	Dr Peter Sedwick Determination of a radiocarbon-age correction for Holocene marine sediments from the MacRobertson Shelf, East Antarctica	\$2,680
01/126	* Dr Andrew Seen A study of historical trends in heavy metal levels in the Tamar Estuary through heavy metal analysis and geochronology of sediment cores	\$6,150
01/156	Dr Brian Yates Modelling of radiopharmaceuticals for tumour diagnosis and therapy	\$12,201
	University of Tasmania Total	\$71,873

University of Technology Sydney

Science

01/028	Dr Graziella Caprarelli Palaeozoic volcanics of the New England fold belt: trace element abundances, mantle generation and tectonic setting	\$8,150
01/117P	A/Professor Abhi Ray Characterisation of Australian precious opals by SIMS	\$8,440
01/136P	Dr Paul Thomas Investigation of the effect of trace elements on the initiation of pyrite decay	\$5,600
University of Technology Sydney Total		\$22,190

University of Western Australia

Science

01/016	Professor Don Bradshaw Measurement of body protein in native animals by ion-beam analysis	\$7,058
01/167C	Professor John Dodson Environmental history and prehistory in south-eastern Australia	\$6,150
University of Western Australia Total		\$13,208

University of Western Sydney

Law and Business

01/113P	Dr Fred Osman Plasma density measurements by microwave interferometry and Langmuir probes	\$1,436
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Science, Technology and Environment

01/216	Dr Gary Dennis Synthesis of deuterated polymers	\$2,900
01/093P	Dr Saravanamuthu Maheswaran Surface properties of ion-implanted polymer thin films	\$9,200
01/160C	Dr Saravanamuthu Maheswaran Heavy ion elastic recoil detection analysis of light elements including sodium and silicon from leached glasses	\$8,760
01/110	Dr Loo-Teck Ng Radiation preparation of hydrogels for controlled-release studies on drugs	\$1,800
01/119	Dr Raymond Ritchie Using ⁶⁷ Ga as an analogue tracer for aluminium in yeast and in higher plants	\$2,000
University of Western Sydney Total		\$26,096

University of Wollongong

Engineering

01/193S	Dr Hagare Dharmappa Investigation of leachability of caesium	\$4,600
01/165C	Professor Peter Fisher Compensation of boron-doped silicon by neutron transmutation doping with phosphorus	\$13,950
01/015P	* Professor Hua Kun Liu <i>In-situ</i> structural studies of electrode materials for lithium ion batteries	\$2,310

Science

01/203S	* Dr Paul Carr Re-Os and Pt-Os isotope systematics by AMS methods and applications to stony-iron and IIIAB iron meteorites	\$11,565
01/031	* Professor Allan Chivas Regolith processes and geochemistry of weathered ore deposits in the Girilambone District, NSW	\$10,000
01/032	* Professor Allan Chivas Gulf of Carpentaria - dating the re-establishment of monsoons	\$12,060
01/182S	* Professor Allan Chivas Impact of ¹³⁷ Cs exposure during gamma ray attenuation to the OSL dose rate estimation of marine sediment cores collected during IMAGES cruises	\$6,440
01/184S	Dr Lesley Head Relationship between disequilibrium in U-series and dose rate determinations in ferricrete sands of semi-arid Australia	\$2,460
01/215	Dr Paul Keller New antagonists of the CRH-1 receptor for the treatment of anxiety, depression and premature birth	\$6,425
01/206S	* Dr Priya Manohar Influence of composition on the hot ductility of microalloyed steels	\$7,675
01/107	Professor Colin Murray-Wallace Biogeochemical analyses of ancient megapode eggshell from archaeological sites in northern Queensland	\$9,380
01/108	A/Professor Gerald Nanson Cross-catchment comparison of Holocene floodplain activity on the mid-north coast of NSW	\$6,700
01/120	Dr Richard Roberts Late Quaternary environments and prehistoric site patterning in southwestern New South Wales	\$6,700
01/155	A/Professor Colin Woodroffe Historical sedimentation in Lake Wollumboola	\$6,150
01/207	A/Professor Colin Woodroffe Modern rates of sediment accretion on reef islands	\$5,360
01/208	A/Professor Colin Woodroffe Prehistoric sedimentation in Lake Wollumboola	\$5,360
	University of Wollongong Total	\$117,135
	AINSE Awards Total	<u>\$1,595,570</u>

Summary of experiments at ISIS

AINSE coordinates funding for Australia's membership of ISIS. This facility, situated in Oxfordshire in the United Kingdom, is the most powerful pulsed neutron source in the world. The membership fee was paid through contributions from the Australian Research Council's Linkage Infrastructure Equipment and Facilities Fund, the Australian National University, Curtin University, Griffith University, the University of Queensland, the University of Sydney, the University of Newcastle, the University of New South Wales, ANSTO and AINSE.

Proposals for experiments are submitted to ISIS for peer group review. The very high success rate that the Australian proposals achieve is well above the international average and attests to their very high quality.

Days allocated on ISIS

<i>Search for the thermodynamical critical point of the LaNi₅-D system</i> E M Gray, School of Science, Griffith University	5
<i>Additive control of viscosity in concentrated emulsions</i> J W White, Research School of Chemistry, Australian National University	2
<i>Concentrated emulsions at low droplet size</i> J W White, Research School of Chemistry, Australian National University	2
<i>A study of thermally reversible gelation of emulsions stabilised by graft copolymers</i> B R Saunders, Chemistry, University of Adelaide	4
<i>Surface layers adsorbed to mineral substrates</i> G Allan, CSIRO Minerals	1
<i>Effect of pressure and temperature on the thermal stability of aluminium titanate</i> I M Low, Applied Physics, Curtin University of Technology	3
<i>Thermal responses of Ti₃SiC₂-based ceramics</i> I M Low, Applied Physics, Curtin University of Technology	3
<i>Structure of sponge phases at solid interfaces and air interfaces</i> D A Antelmi, Research School of Chemistry, Australian National University	4
<i>A study of the effects of intercalated proteins in calcium oxalate crystals grown in urine</i> C Buckley, Applied Physics, Curtin University of Technology	2
<i>High temperature phase transitions in tungsten trioxide</i> C J Howard, ANSTO	3
<i>Temperature and pH induced protein unfolding at interfaces</i> J W White, Research School of Chemistry, Australian National University	3
<i>Partitioning of milk proteins at oil/water interfaces</i> J W White, Research School of Chemistry, Australian National University	3
<i>MuSR study of potassium intercalated graphite</i> T P Blach, School of Science, Griffith University	5
<i>Refining of lung surfactant monolayers</i> I R Gentle, Chemistry, University of Queensland	3
<i>The effect of La doping on the low temperature phase transitions in PrAlO₃</i> B J Kennedy, School of Chemistry, University of Sydney	3
<i>Hydrogen absorption properties of the LaNi₅-D system under high hydrogen pressure</i> E M Gray, School of Science, Griffith University	5
<i>Mixed deuterated surfactants in concentrated emulsions</i> J W White, Research School of Chemistry, Australian National University	4
<i>Modification of PIBSA monolayers by low concentration additives</i> J W White, Research School of Chemistry, Australian National University	2
<i>Langmuir films of poly(tert-butylacrylate) films at the air/water interface</i> J W White, Research School of Chemistry, Australian National University	2
<i>Competition in mixed sorbiton surfactants at the air/water interface</i> J W White, Research School of Chemistry, Australian National University	2
<i>Valence and magnetic transitions in EuMn₂Si₂ and EuMn₂Ge₂</i> S J Campbell, School of Physics, University of New South Wales	2

<i>Transverse spin freezing in Mn-Cu</i>	4
T Hicks, Physics, Monash University	
<i>Thermal denaturation of proteins</i>	3
J W White, Research School of Chemistry, Australian National University	
<i>Interaction of K casein and B lactoglobulin genetic variants</i>	2
J W White, Research School of Chemistry, Australian National University	
<i>Heat induced protein/protein interactions</i>	2
J W White, Research School of Chemistry, Australian National University	

Recent Publications

- E Bovell, T St Pierre, W Chua-anusorn and C E Buckley
Iron oxide particle size distribution during iron loading and deloading in rat tissue measured by small angle neutron scattering
BIOIRON 2001 65 18-24 August 2001 Cairns, Qld
- J M Cadogan, Suharyana, D H Ryan, O Moze and W Kockelmann
Neutron diffraction and Mössbauer study of the magnetic structure of YFe₆Al₆
J. Appl. Phys. **87** 6046 (2000)
- N J Calos, E Graham, D R Cousens, P Christodoulou, C H L Kennard, L K Bekesy and S F Parker
Mode of boron solubility in ferrous alloys
Materials Transactions **42** 496 (2001)
- S J Campbell, F J Burghart, W Potzel, G M Kalvius, E Schreier, G Grosse, D R Noakes, W Schäfer, W Kockelmann, W A Kaczmarek, A Martin and M K Krause
Magnetism of crystalline and nanostructured ZnFe₂O₄
Physica B **289-290** 286-290 (2000)
- S J Campbell, M Hofmann and S J Kennedy
Competing magnetic interaction in La_{0.8}Y_{0.2}Mn₂Si₂ – coexistence of canted ferromagnetism and antiferromagnetism
J. Phys.: Condens. Matter **12** 3241-3254 (2000)
- S J Campbell, W A Kaczmarek and M Hofmann
Mössbauer insight to metallurgy, materials science and engineering
Hyperfine Interact. **126** 175-186 (2000)
- S J Campbell, W Schäfer, W Kockelmann, A Kirfel, W Potzel, F J Burghart, G M Kalvius, A Martin and W A Kaczmarek
Structural and magnetic variations of ZnFe₂O₄ spinels – neutron powder diffraction studies
Physica B **289-290** 286-290 (2000)
- C J Howard, R L Withers and B J Kennedy
Space group and structure for Ca_{0.5}Sr_{0.5}TiO₃
J. Solid State Chem. **160** 8-12 (2001)
- C J Howard, V Luca and K S Knight
High temperature phase transitions in tungsten trioxide - the last word?
J. Phys.: Condens. Matter **14** 377-387 (2002)
- I M Low, D Lawrence and M Singh
Thermal stability of aluminium-titanate in vacuum
Proc. 2001 Joint AXAA/WASEM Conference (Eds. M. Saunders et al.), 188-194, 21-23 September 2001, Mandurah, WA
- P A Reynolds, E Gilbert and J W White
High internal phase water-in-oil emulsions and related microemulsions studied by small angle neutron scattering
2. The distribution of surfactant
J. Phys. Chem. B **105(29)** 6925-6932 (2001)
- P M Saville and J W White
Polymeric surfactant structure
Chin. J. Polym. Sci. **19(2)** 135-145 (2001)

Publications

Notification of the following papers incorporating results from AINSE projects were received by AINSE in 2001. This list may not be a comprehensive list of all publications arising from AINSE-supported work nor does it necessarily relate to awards held in 2001. Advice concerning the availability of these papers and reports can be obtained from the AINSE office.

The publications are listed in university order under the name of the chief investigator, who is not necessarily the first author on the paper. Publications arising from AINSE Postgraduate Research Awards (PGRA) are also listed.

The references are as supplied by the chief investigator in the Annual Progress Report and other notifications provided to AINSE. The Progress Reports for 2001 are published on our home page.

Project Number	Chief Investigator (Co-Authors)	Title of Publication	Reference
Australian National University			
00/020	Bulbeck D	Economy, military and ideology in pre-Islamic Luwu, south Sulawesi, Indonesia	Australasian Historical Archaeology 18 3-16 2000
00/135P	Sargeson A Angus P; Elliot A; Willis A	Template synthesis of amidine- and amide-functionalised cobalt(III) hexaaza cage complexes	J. Chem. Soc., Dalton Trans. 17 2933-2938 2000 0003-9246
00/135P	Sargeson A Moghaddas S; Hendry P; Geue R; Qin C; Bygott A; Dixon N	The interaction of substituted cobalt(III) cage complexes with DNA	J. Chem. Soc., Dalton Trans. 13 2085-2089 2000 0003-9246
00/135P	Sargeson A Smith S	The potential of SarAr for radiolabelling peptides and antibody fragments with $^{64}\text{Cu}^{2+}$	14th International Symposium for Radiopharmaceutical Chemistry, June S619 2001 Interlaken Switzerland
00/135P	Sargeson A Di Bartolo N; Smith S	Metal ion cage complexes as imaging agents for cancer cells	Radiation 2000 30 2000 Lucas Heights Australia 0 9577217 3 0
00/135P	Sargeson A Di Bartolo N; Donlevy T; Smith S	Synthesis of a new cage ligand, SarAr, and its complexation with selected transition metal ions for potential use in radioimaging	J. Chem. Soc., Dalton Trans. 14 2303-2309 2001 0003-9246
92/077	Summerhayes G Bird R; Fullagar R; Gosden C; Specht J; Torrence R	Application of PIXE-PIGME to archaeological analysis of changing patterns of obsidian use in west New Britain, Papua New Guinea	Shackley S (ed.), Advances in Archaeological Volcanic Glass Studies. Plenum Press 129-158 1998 New York
96/054	Sargeson A Geue R; Hanna J; Höhn A; Qin C; Ralph S; Willis A	Steric effects in redox reactions and electron transfer rates	Electron Transfer Reactions; Inorganic, Organometallic and Biological Applications, Ed. S. S. Isied, Advances in Chemistry Series, Am. Chem. Soc., Washington, DC 253 137-150 1997
96/054	Sargeson A Angus P; Bygott A; Geue R; Daskiewicz B; Mau A; Sheil M; Willis A	Methyl aryl ketones in the synthesis of hexaazabicycloicosane cage complexes	Chem. Eur. J. 3 1283-1291 1997
96/054	Sargeson A Brown K; Geue R; Moran G; Ralph S; Riesen H	A long-lived 2E state for a Cr(III) N_6 amine chromophore at 298K: $[\text{Cr}(\text{fac-Me}_5\text{-D}_3\text{h tricosaneN}_6)]\text{Cl}_3$	J. Chem. Soc., Chem. Commun. 2291-2292 1998
98/002	Summerhayes G	Far Western, Western and Eastern Lapita – a re-evaluation	Asian Perspectives 39 109-138 2000

Project Number	Chief Investigator (Co-Authors)	Title of Publication	Reference
98/002	Summerhayes G	Lapita in the Far West: recent developments	Oceania 36 53-64 2001
98/137R	Spriggs M Wilson M; Lawson E	Dating the rock art of Vanuatu: AMS radiocarbon determinations from abandoned mud-wasp nests and charcoal pigment found in superimposition	Rock Art Res. 18(1) 24-32 2001 0813-0426
99/019	Sargeson A Angus P; Willis A	An amidine-functionalized cobalt(III) cage complex: synthesis, structure and properties	J. Chem. Soc., Chem. Commun. 1975-1976 1999
99/019	Sargeson A Brown K; Hockless D	Synthesis and electrochemistry of [Pt(tame) ₂] ⁴⁺ : crystallographic analysis of bis[1,1,1-tris(aminomethyl)ethane-N,N']platinum(II) bis(tetrachlorozincate) dihydrate	J. Chem. Soc., Dalton Trans. 13 2171-2175 1999 0003-9246
99/019	Sargeson A Osvath P; McAuley A; Mendelez R; Subramanian S; Zaworotko M; Broge L	Cobalt cage complexes with N ₃ S ₃ donor sets and differing cavity sizes: a novel macrobicyclic cage with a contracted cap	Inorg. Chem. 38 3634-3643 1999 0020-1669
99/019	Sargeson A Smith S; Di Bartolo N; Hetherington E	Amino-benzyl-cryptate - a new ligand for radiolabelling with ⁶⁴ Cu. Its potential for diagnostic and therapeutic applications	13th International Symposium for Radiopharmaceutical Chemistry, 27 June - 1 July S841 1999 St Louis America
01/074	Hope G	Environmental change in the late Pleistocene and later Holocene at Wanda Site, Soroako, South Sulawesi, Indonesia	Palaeogeogr. Palaeoclimatol. 171 129-145 2001
01/074	Hope G Haberle S; van der Kaars S	Biomass burning in Indonesia and Papua New Guinea: natural and human induced fire events in the fossil record	Palaeogeogr. Palaeoclimatol. 171 259-268 2001
01/134	Summerhayes G	The history of archaeometry	In Murray, T. (ed), The Encyclopaedia of Archaeology: History and Discoveries, ABC Clío, Santa Barbara 100-106 2001
99/019	Sargeson A Angus P; Elliott A; Willis A	Synthesis and properties of cobalt(III) complexes of tripodal ligands containing amide functional groups	J. Chem. Soc., Dalton Trans. 7 1131-1136 1999 0003-9246

Central Queensland University

95/106	Vicente-Beckett V Holden S; Meehan B	Speciation of selenium in coal-fired power plant wastes	International Symposium on Environmental Chemistry and Toxicology 93 14-18 July 1996 Sydney Australia
99/026	Vicente-Beckett V Venugopal V; Morrison H; Garnett D	Comparison of metal profiles of core and surface sediments from the lower Fitzroy River and nearcoast Keppel Bay (Central Queensland)	4th International Conference on Environmental Chemistry and Geochemistry in the Tropics 21 7-11 May 2001 Townsville Australia

Charles Sturt University

99/157S	Robards K McDonald S; Prenzler P; Antolovich M	Phenolic content and antioxidant activity of olive extracts	Food Chem. 73 73-84 2001
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Project Number	Chief Investigator (Co-Authors)	Title of Publication	Reference
Curtin University of Technology			
00/036	De Marco R Mackey D	Calibration of a chalcogenide glass membrane ion selective electrode for the determination of free Fe ³⁺ in seawater. Part I: measurements in UV photooxidised seawater	Mar. Chem. 68 283-294 2000 0304-4203
00/036	De Marco R Pejcic B	Electrochemical impedance spectroscopy and x-ray photoelectron spectroscopy study of the response mechanism of the chalcogenide glass iron(III) ion-selective electrode in seawater	Anal. Chem. 72 669-679 2000 0003-2700
00/036	De Marco R Mackey D	Reply to comments on "Calibration of a chalcogenide glass membrane ion-selective electrode for the determination of free Fe ³⁺ in seawater. I measurements in UV photooxidised seawater"	Mar. Chem. 71 333-336 2000 0304-4203
00/090	Low I Kuroda Y; O'Connor B; Barsoum M; El-Raghy T	Effect of grain size on the preferred grain orientation in Ti ₃ SiC ₂	2000 Powder Metallurgy World Congress Abstracts 107 2000 Kyoto Japan
00/090	Low I Kuroda Y; Barsoum M; El-Raghy T	Indentation responses, wear and damage characteristics of hot-isostatically-pressed Ti ₃ SiC ₂	J. Aust. Ceram. Soc. 37(1) 95-102 2001 0004-881X
00/090	Low I Shi C	Physical and thermal characteristics of aluminium titanate dispersed with β-spodumene and zirconia	J. Mater. Sci. 35 6293-6300 2000 0022-2461
00/090P	Low I Kuroda Y; Barsoum M; El-Raghy T	Indentation responses, wear and damage of Ti ₃ SiC ₂	AUSTCERAM 2000 Transactions (Aust Ceram Soc) 193 2000
00/091P	Low I Asmi D	Microstructural design and characterisation of alumina/calcium-hexaluminate composites	PhD Thesis 2001
00/119P	O'Connor B Pratapa S	Assessment of microstrains and crystallite size for sintered MgO with neutron and x-ray data	Second AINSE Symposium on Neutron Scattering Powder Diffraction 18 2000 Lucas Heights Australia 0 9577217 2 2
01/090	Low I Wren E	Oxidation characteristics of titanium silicon carbide (Ti ₃ SiC ₂)	Joint AXAA(WA) and WASEM Conference 1-10 2001
01/172	De Marco R Pejcic B; Cook S	Continuous flow analysis of mercury using a chalcogenide glass ion-selective electrode	Laboratory Robotics and Automation 12 194-199 2000
97/141	Low I Skala R	Indentation responses and damage of a functionally-graded aluminium titanate/alumina composite	Processing and Fabrication of Advanced Materials VIII . Edited by K.A. Khor, T.S. Srivatsan, M. Wong, W. Zhou and F. Boey (World Scientific Publishing Co. Pte. Ltd.) 443-451 2000 Singapore 981-02-4575-0
97/141	Low I	Synthesis and properties of <i>in-situ</i> layered and graded aluminium titanate/alumina composites	J. Aust. Ceram. Soc. 34(2) 250-256 1998 0004-881X
97/141	Low I Lawrence; Paglia G	Indentation responses and damage of polymeric composites	Structural Integrity and Fracture 119-127 2000

Project Number	Chief Investigator (Co-Authors)	Title of Publication	Reference
PGRA	Kirby N van Riessen A; Buckley C; Wittorff V	Development of an oxalate-precursor process for the production of high quality BaZrO ₃ crucibles	Joint AXAA (WA) and WASEM Conference 21-23 September 11-22 2001 Mandurah Australia
PGRA	Kirby N van Riessen A; Buckley C	Measurement of BaO:[ZrO ₂ + HfO ₂] stoichiometry of BaZrO ₃ powders by x-ray fluorescence spectroscopy	Joint AXAA (WA) and WASEM Conference 21-23 September 29-37 2001 Mandurah Australia
PGRA	Paglia G Rohl A; Buckley C; Gale J	A computational investigation of the structure of κ -alumina using interatomic potentials	J. Mater. Chem. 11 3310-3316 2001
PGRA	Paglia G Buckley C; Rohl A; O'Connor B; van Riessen A; Gale J	The determination of the structure of γ -alumina using empirical and first principle calculations and supporting experiment	Joint AXAA(WA) and WASEM Conference 21-23 September 142-156 2001 Mandurah Australia
PGRA	Paglia G Buckley C; Rohl A; Gale J	The determination of the structure of γ -alumina from first principle calculations using the SIESTA code	Computational Physics Conference 106 2000

Edith Cowan University

00/069P	Hinckley S Duncan P; Dytlewski N; Gluszac E	PIXE and RBS investigation of growth phases of ultra-thin chemical bath deposited CdS thin films	15th International Conference on Ion Beam Analysis incorporating the 12th AINSE Conference on Nuclear Techniques of Analysis P3-47 15-20 July 1 2001 Cairns Australia
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Flinders University

00/145	Storer R Gardner H	Resistive magnetohydrodynamic modelling for three dimensional plasmas	Proceedings of the Conference on Computational Physics December 42 2000 Queensland Australia
00/145	Storer R Gardner H	Three dimensional resistive magnetohydrodynamic stability	European Physical Society Conference on Controlled Fusion and Plasma Physics 24B P4.073 2000 Budapest 963 372 618 2
00/145	Storer R Gardner H	Resistive magnetohydrodynamics for three dimensional plasmas	Plasma 2000 December 10-15 5 2000 Adelaide Australia 0 9577217 4 9
01/133	Storer R McMillan B; Gardner H	Resistive magnetohydrodynamic stability for stellarators	28th European Physical Society Conference on Controlled Fusion and Plasma Physics June P4.053 2001 Madeira Portugal
97/016R	Smith C	Advances in rock art dating: outlines of two projects	First Australian Workshop in Rock Picture Dating. Australian Rock Art Research Association 101-103 2000 Melbourne Australia

Griffith University

00/064	Healy P Ainscough E; Brodie A; Burrell A; Freeman G; Jameson G; Bowmaker G; Hanna J	Structural and spectroscopic studies on three- and two-co-ordinate copper(I) halide tribenzylphosphine complexes	J. Chem. Soc., Dalton Trans. 2 144-151 2001 0300-9246
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Project Number	Chief Investigator (Co-Authors)	Title of Publication	Reference
James Cook University			
00/038	Dickens J Dunbar G; Carter R	Sediment flux across the Great Barrier Reef shelf to the Queensland Trough over the last 300ky	Sediment. Geol. 133 49-92 2000 0037-0738
98/018	Dickens J Heap A; Stewart L	Late Holocene sediment in Nara Inlet, central Great Barrier Reef platform, Australia: sediment accumulation on the middle shelf of a tropical mixed clastic/carbonate system	Mar. Geol. 176 39-54 2001 0025-3227
99/041	Watchman A David B; Mcniven I; Flood J	Micro-archaeology of engraved and painted rock surface crusts at Yiwalaralay (The Lightning Brothers Site), Northern Territory, Australia	J. Archaeol. Sci. 27 315-325 2001
La Trobe University			
00/127P	Riley J Feng P; Gard F; Pigram P; Leckey R; Seyller T; Ley L	Epitaxial growth and the electronic structure of MgSe on ZnSe/GaAs(001)	J. Electron Spectrosc. Relat. Phenom. 527 114-116 2001 0368-2048
00/127P	Riley J Gard F; Leckey R; Usher B; Prince K; Burke P	Quantitative study of thermal diffusion of elements across ZnSe/GaAs interface using SIMS	Surf. Rev. Lett. 8 33 2001
01/040	Edwards P Sayej G	Zahrat adh-Dhra' 2	In S Gibson and A Negev (ed.), Encyclopedia of Archaeology in the Holy Land, Continuum: New York 552 2001
01/040	Edwards P Falconer S; Fall P	Zahrat adh-Dhra'	In S H Savage, K A Zamora and D R Keller (eds) Archaeology in Jordan 441-443 2001
01/040	Edwards P Falconer S; Fall P	Zahrat adh-Dhra'	Am. J. Archaeol. 105 427-461 2001
01/185S	Webb J Bennetts D	Quantification of groundwater discharge of salt in a local groundwater system, using isotopic techniques	In Storkey A (ed) 15 th Victorian Earth Sciences Conference, Geological Society of Australia 66 40 2001
99/158S	Edwards P Falconer S; Fall P; Berelev I; Davies C; Meadows J; Meegan C; Metzger M; Sayej G	Archaeology and environment of the Dead Sea plain: preliminary results of the first season of investigations by the joint La Trobe University/Arizona State University project	Annual of the Department of Antiquities of Jordan 45 135-157 2001
99/158S	Edwards P	Archaeology and environment of the Dead Sea plain: excavations at the PPNA site of ZAD 2	ACOR Newsletter 12.2 7-9 2000
99/158S	Edwards P Higham T	Zahrat adh-Dhra' 2 and the Dead Sea plain at the dawn of the Holocene.	A G Walmsley (ed.), Australians uncovering ancient Jordan: fifty years of Middle Eastern archaeology, The Research Institute for Humanities and Social Sciences, University of Sydney 139-152 2001 Sydney Australia 0 9585973 3 2

Project Number	Chief Investigator (Co-Authors)	Title of Publication	Reference
99/158S	Edwards P Sayej G	A new pre-pottery neolithic cultural region in Jordan: the Dead Sea basin	A G Walmsley (ed.) Australians uncovering Ancient Jordan: Fifty years of Middle Eastern Archaeology, The Research Institute for Humanities and Social Sciences, University of Sydney 225-232 2001 Sydney Australia 0 9585973 3 2

Macquarie University

95/086	Tansley T Butcher S; Prince K; Leech P	Pre-deposition UV treatment for adhesion improvement of thin films on mercury cadmium telluride	J. Vac. Sci. Technol., A 19 90-96 2001 0734-2101
95/086	Tansley T Butcher S	AlN insulating thin films grown on damage susceptible semiconductors	PhD Thesis 1997
95/R166	Gore D Rhodes E; Augustinus P; Leishman M; Colhoun E; Rees-Jones J	Bunger Hills, East Antarctica: ice free at the last glacial maximum	Geology 29(12) 1103-1106 2001 0091-7613
98/027	Gore D Brierley G; Pickard J; Jansen J	Anatomy of a floodout in semi-arid eastern Australia	Z. Geomorphol. 122 113-139 2000 0372-8854
99/155S	Brierley G Fryirs K	Variability in sediment delivery and storage along river courses in Bega catchment, New South Wales, Australia: implications for geomorphic river recovery	Geomorphology 38 237-265 2000
99/155S	Brierley G Fryirs K	A geomorphic approach to identification of river recovery potential	Phys. Geog. 21 244-277 2000

Monash University

00/060	Haberle S	Indicators of human impact in lake environments: implications for environmental history, ecological interpretation and conservation planning in Australian landscapes	AINSE Environment Workshop 2001 "Archives of Human Impact of the Last 200 Years" 29-31 27-28 September 2001 0 9577217 6 5
00/066P	Hicks T	Transverse magnetic ordering	Physica B 300 91-104 2001
00/066P	Hicks T Hennion B; Sidis Y; Mirebeau I	The dynamics of transverse magnetic defects in antiferromagnetic Mn ₉₀ Cu ₁₀	J. Magn. Magn. Mater. 226-230 512 -514 2001 0304-8853
00/156	Van der Kaars S	A vegetation history covering the last 24,000 years from Rawa Danau, West-Java, Indonesia	Biogeography of Southeast Asia: Organisms and orogenesis 22 June 2000 Leiden The Netherlands
00/156	Van der Kaars S Dijkmans V	Kau Bay, a high resolution palaeoenvironmental study of core MD98-2180	Report Faculty of Earth Sciences, Paleocology and Paleoclimatology, Vrije Universiteit Amsterdam 300 97 2001
00/193	Cashion J Rule K; Hicks T; Mulders A	FePS ₃ - a study in Mössbauer spectroscopy	25th AandNZ Condensed Matter Physics Meeting 2-2 2001 Marlborough New Zealand

Project Number	Chief Investigator (Co-Authors)	Title of Publication	Reference
01/085	Kershaw P Leahy P; Tibby J	Preliminary results from a palaeoecological study of a billabong on the Yarra River, Victoria	Australian Quaternary Association Conference February 29 2001 Port Fairy
01/085	Kershaw P Tibby J; Legg S; Leahy P; Fluin J; Reid M	Integrating sedimentary and documentary histories in Australia: approaches and challenges	Detecting environmental change: science and society 17-20 July 37 2001 London UK
01/085	Kershaw P Leahy P; Heijnis H	The late Quaternary palaeoecology of the Yarra River: an archive for catchment management	AINSE Environment Workshop 2001 "Archives of Human Impact of the Last 200 Years" September 38-41 2001
01/085	Kershaw P Leahy P	Aspects of the late Quaternary palaeoecology of the Yarra River	Australian Society for Limnology 40th Congress, Echuca, September 88 2001
01/085	Kershaw P Reid M; Tibby J; Fluin J; Leahy P; Heijnis H; Ogden R; Sayer C	Patterns of ecological change in major river catchments of southeastern Australia	International Geosphere-Biosphere Program Open Science Conference July 63 2001 Amsterdam Netherlands 0284-8015
97/091	Finlayson T Ersez T; Kennedy S	Polarised neutron scattering study of magnetic correlations and spin dynamics in LaSrMnO	International Conference on Neutron Scattering (ICNS2001) C-133 9-13 September 2001 Munich Germany
98/151R	David B Lourandos H; Lecole M; Baglioni A	Investigating relationships between motif forms, techniques and rock media in north Australian rock art	Australian Archaeology 48 16-22 1999
99/022	Bierlein F Hughes M; Dunphy J; McKnight S; Reynolds P; Waldron H	Tectonic implications of mafic dykes in the Victorian gold province	Bull. Aust. Inst. Geosci. 34 71-78 2001 1 876118 16 4
99/022	Bierlein F Hughes M; Dunphy J; McKnight S; Reynolds P; Waldron H	Tectonic and economic implications of trace element ⁴⁰ Ar/ ³⁹ Ar and Sm-Nd data from mafic dykes associated with orogenic gold mineralisation in central Victoria Australia	Lithos 58 1-31 2001 0024-4937
99/054P	Hicks T Robinson D; Ling M	The change of moment with field and composition in Fe-V alloys	J. Magn. Magn. Mater. 226-230 1346 2001
99/056	Hicks T Goossens D; Studer A; Kennedy S	The impact of magnetic dilution of the magnetic ordering in MnPS ₃	J. Phys.: Condens. Matter 12 4233-4242 2000 0953-8984
99/056	Hicks T Ling M	Moment variations in disordered Co-Mn alloys	Physica B 276-278 744-745 2000 0378-4363
99/056	Hicks T Mezei F; Ehlers G; Pappas C; Ling M	What do neutrons tell us about the nature of (spin) glasses?	Physica B 276-278 543-546 2000 0378-4363
99/058	Kershaw P Penny D; van der Kaars S; Anshari G; Thamotherampillai A	Evidence for vegetation and climate in lowland southeast Asia at the last glacial maximum	In Melcalfe I; Smith J; Morwood M; Davidson I; Hewison K (Eds.) 227-236 Floral and Faunal Migrations and Evolution in Australia-Southeast Asia. Balkema, Rotterdam 2001

Project Number	Chief Investigator (Co-Authors)	Title of Publication	Reference
99/058	Kershaw P Anshari G; van der Kaars S	A late Pleistocene and Holocene pollen record from peat swamp forest, Lake Sentarum Wildlife Reserve, West Kalimantan, Indonesia	Palaeogeogr. Palaeoclimatol. 171 213-228 2001 0031-0182
99/059	Cashion J Gagliardi F	Metal extraction using tri-n-butyl phosphate	24th A and NZ Condensed Matter Physics Meeting TP1 2000 Wagga Wagga Australia
99/159S	Simon G Garvey C; Parker I; Whittaker A; Knott R	An experimental study by NMR and SANS of the ambient hydration of paper	12th Fundamental Research Symposium Keble College 17-21 September 359-392 2001 Oxford UK

Murdoch University

00/174S	Webb J Giles R; Rose A; Turner J; Gestin J; Loussouarn A; Faivre A; Barbet J; Chatal J	Immunoactive chelates labelled with Sm-153 or Re-188 for two-step cancer radioimmunotherapy	World Chemistry Congress 1-6 July 420 2001 Brisbane Australia
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Queensland University of Technology

99/086	Frost R Martens W; Bartlett J; Kloprogge J	The ageing of alumina hydrolysates synthesized from secbutoxyaluminium(III)	J. Mat. Chem. 11(6) 1681-1686 2001
99/086	Frost R Martens W; Bartlett J; Kloprogge J	Thermal transformation of alumina hydrolysates and gels synthesized from trisebutoxyaluminium(III) modified with short chain aliphatic acids dissolved in butyl ether	Thermochim. Acta 374 31-43 2001

RMIT University

00/141P	Sood D Comini E; Faglia G; Sberveglieri G; Li Y; Wlodarski W; Ghantasala M	Sensitivity enhancement towards ethanol and methanol of TiO ₂ films doped with Pt and Nb	Sensors and Actuators B 64 169-174 2000
00/141P	Sood D Duong H; Shrivastava P; Badwal S	Evaluation of calcium doped lanthanum chromite thin films as a protective coating on stainless steel interconnect in a solid oxide fuel cell	AUSTCERAM 2000 115 2000 Sydney Australia
00/141P	Sood D Evans P; Dytlesky N	Ion beam analysis of RF-Magnetron sputtered perovskite films of LCC and LSM	15th Internat. Conf. Ion Beam Analysis, incorporating the 12th AINSE Conf. Nucl. Techn. of Analysis 15-20 July P3-59 2001 Cairns, Australia
00/142P	Sood D Wang Y; Dytlesky N; Short K; Ghantasala M	Application of RBS and HIERDA to optimisation of sputter deposition of SmCo thin films	15th Internat. Conf. Ion Beam Analysis, incorporating the 12th AINSE Conf. Nucl. Techn. of Analysis 15-20 July P3-30 2001 Cairns, Australia
00/142P	Sood D Mollica S; Evans P	Ion beam analysis of aluminium ion implanted titanium diboride thin films	15th Internat. Conf. Ion Beam Analysis, incorporating the 12th AINSE Conf. Nucl. Techn. of Analysis 15-20 July P2-49 2001 Cairns, Australia
97/135	Johnston P Persson L; Whitlow H; El Bouanani M; Hult M; Andersson M; Bubb I; Cohen D; et al	Separation of mass-overlapped time of flight-energy elastic recoil detection analysis data using Ryan and Jamieson's dynamic analysis method	Nucl. Instrum. Methods Phys. Res. B 179 403-411 2001 0168-583X

Project Number	Chief Investigator (Co-Authors)	Title of Publication	Reference
99/089	Sood D Shamsili S; Badwal S; Evans P	The effect of ion implanted yttrium on the high temperature corrosion behaviour of a chromia forming alloy	11th Aust Conf on Nucl Tech of Analysis and 5th Vacuum Society of Australia Congress 266-269 1999 Lucas Heights Australia
99/090P	Ward L Perry A; Manory R; Kavuri P	The effects of metal ion post-implantation on the near surface properties of TiN deposited by CVD	Surf. Coat. Technol. 133-134 203-207 2000 0257-8972
Southern Cross University			
00/023	Bush R Sullivan L; White I; Prince K	Sulfur isotope evidence for the contemporary formation of pyrite in a coastal acid sulfate soil	Centre for Isotope Studies Research Report 1995-1999, 135-139 2000 CSIRO Sydney 1035-5952
00/023	Bush R Prince K; White I; McGoldrick P; Sullivan L	Secondary ion mass spectrophotometry (SIMS) with extreme energy filtering for micron scale ³⁴ S determinations of pyrite	Centre for Isotope Studies Research Report 1995-1999, 139-143 2000 CSIRO Sydney 1035-5952
00/147	Taffs K	Diatoms as indicators of wetland salinity in the upper south east of South Australia	Holocene 11(2) 281-290 2001
99/148	Boyd B McGrath R	The geoarchaeology of the prehistoric ditched sites of the upper Mae Nam Mun Valley NE Thailand, III: late Holocene vegetation history	Palaeogeogr. Palaeoclimatol. 171 (3-4) 307-328 2001 0031-0182
99/148	Boyd B McGrath R	The geoarchaeology of the prehistoric ditched sites of the upper Mae Nam Mun valley NE Thailand. V: the chronology of the Iron Age "moats" of northeast Thailand	Antiquity 75 349-360 2001 0003-598X
PGRA	Parr J Dolic V; Lancaster G; Boyd W	A microwave digestion method for the extraction of phytoliths from herbarium specimens	Rev. Palaeobot. Palynol. 116 203-212 2001
University of Adelaide			
00/191	Prescott J Twidale C; Bourne J; Williams F	Age of desert dunes near Birdsville, southwest Queensland	Quatern. Sci. Rev. 20 1355-1364 2001
00/191	Prescott J Huntley D	Improved methodology and new thermoluminescence ages for the dune sequence in south-east South Australia	Quatern. Sci. Rev. 20 57-69 2001
01/114	Prescott J Walshe K; Williams F; Williams M	Preliminary investigation of Indigenous campsites in late Quaternary dunes, Port Augusta, South Australia	Aust. Archaeol. 52 5-8 2001
01/114	Prescott J Williams M; Chappell J; Adamson D; Cock B; Walker K; Gell P	The enigma of a late Pleistocene wetland in the Flinders Ranges, South Australia	Quatern. Int. 83-85 129-144 2001
01/114	Prescott J Robertson G; Williams F	Luminescence ages beyond 500 ka: can they be believed?	Australasian Connections and New Directions: Proceedings of the Seventh Australasian Archaeometry Conference. Research Papers in Anthropology and Linguistics M. Jones ed 272-291 2001 Auckland New Zealand

Project Number	Chief Investigator (Co-Authors)	Title of Publication	Reference
99/001	Williams M Prescott J; Chappell J; Adamson D; Cock B; Lawson E; Walker K; Symonds R; Gell P	Late Pleistocene wetlands in the semi-arid Flinders Ranges, South Australia	Ninth Australia and New Zealand Geomorphology Group Conference November 102 2000 Wanaka New Zealand

University of Auckland

98/057	Augustinus P Shulmeister J; Shane P; Lian O; Okuda M; Carter J; Harper M; Heijnis H; Dickinson W	A long late-Quaternary record from Lake Poukawa, Hawke's Bay, New Zealand	Palaeogeog. Palaeoclim. 176 81-107 2001
00/011	Bowmaker G Hanna J; Rickard C; Lipton A	Crystal structures and vibrational and solid-state (CPMAS) NMR spectroscopy of some bis(triphenylphosphine)silver(I) sulfate, selenate and phosphate systems	J. Chem. Soc., Dalton Trans. 1 20-28 2001 0003-9246
00/094	Markwitz A Johnson P; Gilbert P; Collins G; Trompetter W; Short K; Cohen D; Dytlewski N	Nanoporous surfaces produced by plasma-immersion ion implantation of helium and oxygen	Surf. Coat. Technol. 136 217-222 2001 0257-8972
00/107	Metson J Prince K; Bittar A; Tornquist L	XPS and SIMS characterisation of TiO _x N _y solar absorber films	Ionics 7 346-350 2001
00/108	Metson J Dunlop H	New insights into the surface chemistry of aluminium and its oxides with static TOF-SIMS and scanning probe microscopies	ATB Metall. 3,4 127-132 2000
00/118	Nichol S Goff J; Chagué-Goff C	Evidence for catastrophic inundation of the west coast, Okarito Lagoon: a report on work in progress	Prepared for West Coast Regional Council 34 2001 Auckland New Zealand
00/118	Nichol S Chagué-Goff C	Preliminary study of recent environmental changes in Okarito Lagoon, west coast	NIWA Client Report CHC01/63. National Institute of Water and Atmospheric Research Ltd, Christchurch 13 2001 New Zealand
00/118	Nichol S Goff J; Chagué-Goff C	Environmental changes in Okarito Lagoon, Westland, New Zealand	DOC Science Internal Series 3, Department of Conservation, Wellington 30 2001 New Zealand

University of Melbourne

00/024P	Camakaris J Voskoboinik I; Greenough M; La Fontaine S; Mercer J	Functional studies on the Wilson copper P-Type ATPase and toxic milk mouse mutant	Biochem. Biophys. Res. Comm. 281 966-970 2001 0006-291X
00/024P	Camakaris J Voskoboinik I; Mar J; Strausak D	The regulation of catalytic activity of the Menkes copper-translocating P-type ATPase	J. Biol. Chem. 276(30) 28620-28627 2001 0021-9258
00/054P	Gleadow A Spikings R; Foster D; Kohn B; O'Sullivan P	The late Neoproterozoic to recent thermal history of the Precambrian Georgetown Inlier, north-east Australia	Aust. J. Earth Sci. 48 9-24 2001 0812-0099

Project Number	Chief Investigator (Co-Authors)	Title of Publication	Reference
00/134	Sagona A Brennan P	Obsidian from volcanic sequences and recent alluvial deposits, Erzurum district, north-eastern Anatolia: chemical characterisation and archaeological implications	Ancient Near Eastern Studies 37 128-154 2000 0065-0382
00/134	Sagona A Sagona C	Excavations at Sos Höyük, 1998-2000: fifth preliminary report	Ancient Near Eastern Studies 37 56-127 2000 0065-0382
01/026	Camakaris J Voskoboinik I; Lane C; Mar J; Strausak D; Petris M	Catalytic activity and trafficking of the Menkes(MNK) copper-translocating P-Type ATPase in mammalian cells	FASEB(USA) Summer Research Conferences abstracts 49 2001
01/055P	Gleadow A Price R; Osadetz K; Kohn B; Feinstein S	Deep refrigeration of a thrust and fold belt because of enhanced syntectonic penetration of meteoric water: the Lewis Thrust Sheet, southern Canadian Rocky Mountains	Earth System Process – Abstracts of a global meeting presented by The Geological Society of America and the Geological Society of London 24-28 June 52 2001 Edinburgh Scotland
01/055P	Gleadow A O'Sullivan P; Morwood M; Hobbs D; Suminto F; Situmorang M; Raza A; Maas R	Archaeological implications of the geology and chronology of the Soa basin, Flores, Indonesia	Geology 29 607-610 2001 0091-7613
01/055P	Gleadow A Weber U; Kohn B; Foster D; Nelson D	Post-Palaeoproterozoic thermotectonic evolution of the northern Western Australian Shield	15th Victorian Universities Earth Sciences Conference, Monash University Geological Society of Australia 29 September 66 18 2000 0729-011X
01/055P	Gleadow A Price R; Osadetz K; Kohn B; Feinstein S	Deep refrigeration of an evolving thrust and fold belt by enhanced penetration of meteoric water: the Lewis Thrust Sheet, southern Canadian Rocky Mountains	Geological Society of America Annual Meeting November A52 2001 Boston 0016-7592
01/055P	Gleadow A Rudge T; Duboz C; Norvick M; Lister G; Fitzgerald D; Kohn B; Brown R	Use of PlatyPlus reconstruction software for geometric reconstruction of the evolution of sedimentary basins on the Australian Craton between 150-100 Ma	In Davidson, G. and Pongratz, J. (eds): A Structural Odyssey – Specialist Group in Tectonics and Structural Geology, Ulverstone, Tasmania, Geological Society of Australia 12-16 February 64 157 2001 0 85901 941 1
01/055P	Gleadow A Lorencak M; Kohn B	Low temperature history of the central Fennoscandian Shield using apatite fission track and (U-Th)/He thermochronometry	15th Victorian Universities Earth Sciences Conference, Monash University, Geological Society of Australia 29 September 66 27 2000 0729-011X
01/055P	Gleadow A Kohn B; O'Sullivan P; O'Sullivan A	Apatite fission track thermochronology of Tasmania	The Geological Framework of Tasmania - a workshop to finalise the TASGO and TASMAR projects under the National Geoscience Mapping Accord 13-14 June 12 2001 Hobart Australia
01/055P	Gleadow A Hu S; O'Sullivan P; Raza A; Kohn B	Thermal history and tectonic subsidence of the Bohai Basin, northern China: a Cenozoic rifted and local pull-apart basin	Phys. Earth Planet. Inter. 126 231-245 2001 0031-9201

Project Number	Chief Investigator (Co-Authors)	Title of Publication	Reference
01/055P	Gleadow A Kohn B; Brown R; O'Sullivan P; Gallagher K	Low temperature thermochronology and denudation modelling of the Australian continent	Earth System Process – Abstracts of a global meeting presented by The Geological Society of America and the Geological Society of London 24-28 June 97 2001 Edinburgh Scotland
01/055P	Gleadow A	Continental scale low temperature thermochronology	Exploring the Earth: A Celebration of Four Journeys. Abstracts of Conference at the Australian National University 20-23 February 39 2001 Canberra Australia
01/055P	Gleadow A Cockburn H; Rrown R; Summerfield M; Kohn B; Fleming A; Dimas V; Fink D	The origin of passive margin continental margin escarpments: insights from combining multiple analytical techniques	Earth System Processes – Abstracts of a global meeting presented by The Geological Society of America and the Geological Society of London 24-28 June 95 2001 Edinburgh Scotland
01/055P	Gleadow A Carter T; Kohn B; Foster D; Belton D; Woodhead J	Late stage thermal histories of two core complexes, Basin and Range, USA: new insights from (U-Th)/He thermochronometry	15th Victorian Universities Earth Sciences Conference, Monash University Geological Society of Australia 29 September 66 23 2000 0729-011X
01/055P	Gleadow A Spikings R; Foster D; Kohn B; Lister G	Post-orogenic (<1500 Ma) thermal history of the Mesoproterozoic eastern successions, Mount Isa inlier, Australia	Precambrian Res. 109 103-144 2001 0301-9268
01/055P	Gleadow A Brown R; Gallagher K; Johnson K; Cockburn H; Summerfield M	All landscapes, great and small: problems and strategies for deriving regional denudation histories from sparse data	Earth System Processes – Abstracts of a global meeting presented by The Geological Society of America and the Geological Society of London 24-28 June 81 2001 Edinburgh Scotland
01/120	Roberts R	Playa lake environments in the Murray Basin during the last glacial cycle	The Victorian Geologist 1-2 2001
98/023	Kohn B Belton D; Brown R; Fink D	The first quantitative erosion rate estimates from “the oldest persisting...landforms in the world”	Ninth International Conference on Fission Track Dating and Thermochronology, Geological Society of Australia 58 19-21 2000 Lorne 0729-011X

University of New England

00/047	Fewell M Kim S; Priest J	Martensitic stainless steel nitrided in a low-pressure rf plasma	International Current Status Seminar on Thermochemical Surface Engineering of Stainless Steels 10 2000 Osaka Japan
00/047	Fewell M Priest J; Collins G	Precision diffractometry of expanded austenite using synchrotron radiation	International Current Status Seminar on Thermochemical Surface Engineering of Stainless Steels 16 2000 Osaka Japan
00/047	Fewell M Priest J; Collins G; Short K	Diffractometry of expanded austenite using synchrotron radiation	14th National Congress of the Australian Institute of Physics MT11 2000 Adelaide Australia

Project Number	Chief Investigator (Co-Authors)	Title of Publication	Reference
00/047	Fewell M Priest J; Collins G; Short K	First results on nitriding aluminium alloys in a low-pressure rf plasma	14th National Congress of the Australian Institute of Physics 52 2000 Adelaide Australia
00/057P	Grave P Barbetti M; Hotchkis M; Bird R	The stoneware kilns of Sisatchanalai and early modern Thailand	J. Field Archeol. 27,2 169-182 2000 0093-4690
00/063P	Haworth R James R	Changes in estuarine sedimentation rates in the last 200 years: case studies from New South Wales from disturbed and relatively undisturbed environments	AINSE Environment Conference on the Archives of human impact of the last 200 years September 47-50 2001 Lucas Heights Australia 0 9577217 6 5
95/R138	Haworth R Gale S; Short S; Heijnis H	Land use and lake sedimentation on the New England Tablelands of New South Wales, Australia	Aust. Geographer 30 51-74 1999 0004-9182
99/117	Fewell M Priest J; Collins G; Short K	The influence of ion bombardment and gas pressure on nitriding in low-pressure rf plasmas	11th Gaseous Electronics Meeting 46 2000 Armidale Australia
99/117	Fewell M Priest J; Baldwin M	The action of hydrogen in low-pressure rf-plasma nitriding	Surf. Coat. Technol. 145 152-163 2001 0257-8972
99/117	Fewell M Priest J; Baldwin M; Short K; Collins G	Nitriding at low temperature	Surf. Coat. Technol. 131 284-290 2000 0257-8972
99/118	Fewell M Mitchell D; Priest J; Short K; Collins G	The structure of expanded austenite	11th Gaseous Electronics Meeting 44 2000 Armidale Australia
99/118	Fewell M Mitchell D; Priest J; Short K; Collins G	The nature of expanded austenite	Surf. Coat. Technol. 131 300-306 2000 0257-8972
99/119	Fewell M Garlick P; Priest J; Burke P; Dytlewski N; Prince K; Short K; Elliman R; et al	Comparative studies of the composition of nitrided stainless steel	14th National Congress of the Australian Institute of Physics 39 2000 Adelaide Australia
PGRA	Priest J Fewell M; Garlick P; Burke P; Dytlewski N; Prince K; Short K; Elliman; et al	Progress on studies of the composition of expanded austenite	International Current Status Seminar on Thermochemical Surface Engineering of Stainless Steels 1 2000 Osaka Japan
PGRA	Priest J Fewell M; Collins G; Short K	Electron sources in low pressure plasma nitriding	11th Gaseous Electronics Meeting 8 2000 Armidale Australia
PGRA	Priest J Fewell M; Collins G; Short K	Fundamental mechanisms in nitriding in low pressure plasmas	Seventh International Conference on Plasma Surface Engineering 35 2000
PGRA	Blair N	From paddock to particle	Soils Newsletter Joint FAO/IAEA Division of Nuclear Techniques in Food and Agriculture and FAO/IAEA Agriculture and Biotechnology Laboratory Seibesdorf 2001 Vienna Austria 23(2) 31-37 2001 1011-2650

Project Number	Chief Investigator (Co-Authors)	Title of Publication	Reference
University of New South Wales			
00/021P	Burford R Shirodkar B	Interpenetrating polymer networks based on thermoplastic elastomer using radiation techniques	International Rubber Conference October 12 2000 Melbourne Australia
00/025P	Campbell S Schmidt M	Crystal and magnetic structures of Sr ₂ Fe ₂ O ₅ at elevated temperature	J. Solid State Chem. 156 292-304 2001 0022-4596
00/026P	Campbell S Zhang H; Edge A	Formation and structure of rare-earth intermetallic compounds R ₃ Co ₂₉ M ₄ B ₁₀	J. Phys.: Condens. Matter 12 L159-L166 2000 0953-8984
00/026P	Campbell S Zhang H; Li H; Hofmann M; Edge A	Mössbauer study of rare-earth intermetallic compounds R ₃ T ₂₉ Si ₄ B ₁₀	J. Phys.: Condens. Matter 12 5021-5032 2000 0953-8984
00/055P	Gooding J Erokhin P; Losic D; Yang W; Policarpio V; Liu J; Ho F; Situmorang M; Hibbert D; Shapter J	A study of the parameters important in fabricating enzyme electrodes using self-assembled monolayers of alkanethiol	Anal Sci. 17 3-10 2001 0910-6340
00/055P	Gooding J Losic D; Shapter J; Short K	The influence of the underlying gold substrate on glucose oxidase electrodes fabricated using self-assembled monolayers	Electroanalysis 13 1385-1393 2001
00/055P	Gooding J Losic D; Shapter J; Erokhin P; Short K	Combined atomic force microscopy (AFM), x-ray photoelectron spectroscopy (XPS) and quartz crystal microbalance (QCM) studies of glucose oxidase (GOX) immobilised onto self-assembled monolayer on gold films	11th Australasian Electrochemistry Conference 10-14 December 23 2000 Parramatta Australia
00/071P	Howlett R Zreiqat H; Chen N; Zhang X; Akin A; Haynes D; Hanley L; Revell P; Evans P; Hong Z	The effect of biomaterial chemistries on the osteoblastic molecular phenotype and osteogenesis: <i>in vitro</i> and <i>in vivo</i> studies	In "Bone Tissue Engineering" ed. J.E. Davies, em squared incorporated 240-255 Toronto Canada 2000
00/071P	Howlett R Zreiqat H; Bilek M; Evans P; Mckenzie D; Mcculloch D; Howlett R	Metal ion implantation using a filtered cathodic vacuum arc	J. Appl. Phys. 87 4198-4204 2000
00/071P	Howlett R Zreiqat H; Zannettino A; Simmons P; Evans P; Gronthos S	The effect of surface chemical modification on intergrin expression and function by human bone-derived cells	Sixth World Biomaterials Congress 1 237 2000
00/097	Martin H Sweller S	A 40,000 year vegetation history and climatic interpretations of Burruga Swamp, Barrington Tops, New South Wales	Quatern. Int. 83-85 233-244 2001
00/109P	Milthorpe B	Hydroxyapatite-based materials for replacement of bone in load bearing situations	10th International Conference on Biomedical Engineering December 38-39 2000 Singapore 981-04-3631-9
00/109P	Milthorpe B Miao X; Ruys A	Microstructure and bone bonding of two non-stoichiometric HA ceramics	10th International Conference on Biomedical Engineering December 259-260 2000 Singapore 981-04-3631-9
00/109P	Milthorpe B Miao X; Ruys A	Hydroxyapatite-316L fibre composites prepared by vibration assisted slip casting	J. Mater. Sci. 36(13) 3323-3332 2001 0022-2461

Project Number	Chief Investigator (Co-Authors)	Title of Publication	Reference
00/144	Stewart G Zukrowski J; Gubbens P; van der Nol R; Harker S	Magnetic behaviour in $Tm_2Fe_3Si_5$	J. Magn. Magn. Mater. 236 93-98 2001
01/027P	Campbell S Zhang H; Li H; Yan Q; Wu E; Hofmann M	Magnetization study of rare-earth intermetallic compounds $R_3Co_{29}Si_4B_{10}$	Physica B 305 10-13 2001 0378-4363
01/027P	Campbell S Hofmann M; Edge A; Studer A	The magnetic structures of $YbMn_2Si_2$	J. Phys.: Condens. Matter 13 9773- 9780 2001 0953-8984
01/038	Behnia M Soodphakdee D; Tu J	CFD code benchmark on void fraction distribution in subcooled flow boiling of a concentric annular tube at low pressure	14th Australasian Fluid Mechanics Conference December 2001 409- 412 Adelaide Australia
01/157	Zreiqat H Schakibaei M; Evans P; Knabe C; Howlett R	Mechanisms of magnesium-stimulated adhesion to osteoblastic cells to commonly used orthopaedic implants	23rd American Society for Bone and Mineral Meeting 12-16 October 2001 S328 Phoenix Arizona
01/210	Albani A Seranrei Barbero R; Lezziero A; Zoppi U	Depositi tardo-pleistocenici ed olocenici nel sottosuolo veneziano: paleoambienti e cronologia	Il Quaternario, Italian Journal of Quaternary Sciences 14(1) 9-22 2001
99/076	Milthorpe B Miao X; Ruys A	Development of stress cracking in steel fibre reinforced hydroxyapatite	11th Annual Meeting of the Australian Society for Biomaterials February 21 2000 Melbourne Australia
99/077	Hutchison W Nishimura K; Chaplin D; Harker S; Mori K; Ohya S	Nuclear orientation studies of magnetism in single crystal $Pr_{0.5}Nd_{0.5}Ni$	Hyperfine Interact. 133 121-125 2001 0304-3834
99/077	Hutchison W Nishimura K; Chaplin D; Yasukawa T; Mori K; Isikawa Y; Ohya S; Muto S	Low temperature nuclear orientation studies of metamagnetic $ReNiAl_4$ single crystals	J. Magn. Magn. Mater. 226-230 1126 2001 0304-8853
99/078	Rossleigh M Roman M; Angelides S; Walker B; Dixon J	Staging and managing lung tumors using F-18 FDG coincidence detection	Clin. Nucl. Med. 26(5) 383-388 2001
99/080	Box G Taha G	A study of aerosol optical and physical properties in Sydney, Australia	PhD Thesis 2000
00/080P	Kisi E Wu E; Kennedy S	<i>In-situ</i> neutron powder diffraction study of Ti_3SiC_2 synthesis	J. Am. Ceram. Soc. 84 2281-2288 2001 0002-7820

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00/122	Pearson S Searson M; Gayler L	Preliminary results from tree increment and playa sediment cores from the Paroo, north-western New South Wales, Australia	Quatern. Int. 83-85 145-153 2001
00/122	Pearson S Searson M	A new technique in dendroecology using Callitris	Dargavel J; Hart D and Libbis B (eds) Perfumed Pineries: Environmental History of Australia's Callitris forests, CRES, Australian National University 39-47 2001 Canberra Australia
00/158P	von Nagy-Felsobuki E Sudarko; Hughes; Jason M	Ro-vibrational transition energies and absorption intensities of the 1A_1 states of H_2O , $He_2O_2^+$ and $He_2S_2^+$	Aust. J Phys 53(5) 665-688 2000 0004-9506

Project Number	Chief Investigator (Co-Authors)	Title of Publication	Reference
01/086	Kisi E Forrester J; Piltz R; McIntyre G	Temperature induced phase transitions in the giant piezoelectric material PZN-4.5 percent PT	J. Phys.: Condens. Matter 13 825-833 2001 0953-8984
01/141	von Nagy-Felsobuki E Wilson D	<i>Ab initio</i> structures and stability of diatomic transition metal halides	IUPAC 38th World Chemistry Congress PB25 2001 Brisbane Australia
01/141	von Nagy-Felsobuki E Sudarko	<i>Ab initio</i> rotational and rovibrational transitions and linestrengths of He ₂ N ²⁺	J. Mol. Spectrosc. 208(2) 161-165 2001 0022-2852
98/147R	Colhoun E Berkman P; et al	Circum-Antarctic coastal environmental shifts during the late Quaternary reflected by emerged marine deposits	Antarct. Sci. 10(3) 345-362 1998
98/147R	Colhoun E Ingolfsson O; et al	Antarctic glacial history since the last glacial maximum: an overview of the record on land	Antarct. Sci. 10(3) 326-344 1998
99/064	Kisi E Yuxiang M; Kennedy S	Neutron diffraction study of ferroelasticity in a 3 mol percent Y ₂ O ₃ -ZrO ₂	J. Am. Ceram. Soc. 84 399-405 2001 0002-7820
99/069	Djenidi L Bisciglia S; Smalley R; Antonia R	Structure of rough wall turbulent boundary layer at relatively high Reynolds number	CD ROM 14th Australasian Fluid Mechanics Conference 9-14 December 2001 Adelaide University Australia 1 876346 33 7

University of Queensland

00/051	Gentle I Lawrie F; Gunton K; Barnes G	The structural characterisation of self-assembled films of dimyristoyl phosphatidylcholine: a neutron reflectivity and Brewster angle microscopy study	Colloids Surf. A 168 13-25 2000 0166-6622
00/195S	Atrens A Wang J; Mitchell D	Grain boundary characterization of X42 pipeline steel in relation to IGSCC	Corrosion 2001, NACE 1-9 2001 Houston Texas
01/006	Bernhardt P Moore E; Riley M	Photoinduced electron transfer and electronic energy transfer in naphthyl appended cyclams	Inorg. Chem. 40 5799 2001 0020-1669
99/083	Hill D Whittaker A	Advances in NMR measurement of radiation crosslinking of polymers	Radiation Conference 26-28 November 18 2000 Lucas Heights Australia 0 9577217 3 0

University of South Australia

00/052	Gerson A O'Dea A; Prince K; Smart R	Secondary ion mass spectrometry investigation of the interaction of xanthate and galena	Journal of Mineral Processing 61 121-143 2001
00/140	Smart R Piantadosi C; Jasieniak M; Skinner W	Statistical comparison of surface species in flotation concentrates and tails from ToF-SIMS evidence	Miner. Eng. 13 1377-1394 2000 0892-6875
00/140	Smart R Gerson A; Lange A; Prince K	The mechanism of copper activation of sphalerite	App. Surf. Sci. 137 207-223 1999 0378-5963
00/140	Smart R Grano S; Fornasiero D; Ralston J	The pivotal role of chemistry in minerals processing	AMIRA (Aust. Min. Ind. Res. Assoc.) 38th Ann Tech Meeting September P1-15 1997

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00/140	Smart R O'Dea A; Prince K; Gerson A	Secondary ion mass spectrometry investigation of the interaction of xanthate with galena	Int. J. Miner. Proc. 61 121-143 2000 0301-7516
00/140	Smart R Skinner W; Gerson A	XPS of sulfide mineral surfaces: metal-deficient, polysulfides, defects and elemental sulfur	Surf. Interface Anal. 28 101-105 1999 0142-2421
00/140	Smart R Jasieniak M; Prince K; Skinner W	SIMS studies of oxidation mechanisms and polysulfide formation in reacted sulfide surfaces	Miner. Eng. 13 857-870 2000 0892-6875
01/162C	Kumar S Gredelj S; Gerson A; Cavallaro J	Formation of aluminium nitride on aluminium substrates by radio frequency plasma nitriding	International Conference on Materials for Advanced Technologies 99 1-6 July 2001 Singapore

University of Sydney

00/003P	Barbetti M Grave P; Hotchkis M; Bird R	The stoneware kilns of Sisatchanalai and early modern Thailand	J. Field Archaeol. 27(2) 169-182 2000 0093-4690
00/008	Betts A Helms S; Yagodin V; Khozhaniyazov G; Kidd F	Five seasons of excavations in the Tash-k'irman Oasis of Ancient Chorasmia, 1996-2000	Iran 39 119-144 2001
00/077P	Kennedy B Moussa S; Hunter B; Howard C; Vogt T	Low temperature structural studies on PrAlO ₃	J. Phys.: Condens. Matter 13 L203 2001 0953-8984
00/077P	Kennedy B Moussa S; Vogt T	Structural variants in ABO ₃ type perovskite oxides. On the structure of BaPbO ₃	Solid State Commun. 119 549-552 2001 0038-1098
00/077P	Kennedy B Wong T; Hunter B; Howard C; Vogt T	Crystal structures and phase transitions in the SrTiO ₃ -SrZrO ₃ solid solution	J. Solid State Chem. 156 255 2001 0022-4596
00/078P	Kennedy B Macquart R; Kubota Y; Nishibori E; Takata M	Structural studies of cation disorder in the ferroelectric oxide SrBi ₂ Ta ₂ O ₉	Ferroelectrics 248 27-32 2000 0015-0193
00/078P	Kennedy B Hunter B; Prodjosantoso A	Synthesis and structural studies of strontium-substituted tricalcium aluminate	Aust. J. Chem. 53 195-202 2000
00/078P	Kennedy B Macquart R; Shimakawa Y	Cation disorder in the ferroelectric oxides ABi ₂ Ta ₂ O ₉ , A = Ca, Sr, Ba	J. Solid State Chem. 160 174-177 2001 0022-4596
00/116	Napper D Hidi P; Sangster D	Properties of nano-size particles of emulsion polymers	24th Australian Polymer Symposium, Royal Australian Chemical Institute Polymer Division 4-5 February C2-4 2001 Beechworth Australia
01/054	Gilbert R Tonge M	Testing free volume theory for penetrant diffusion in rubbery polymers	Polymer 42 1393-1405 2001 0032-3861
01/054	Gilbert R Tonge M	Testing models for penetrant diffusion in glassy polymers	Polymer 42 501-513 2001 0032-3861
01/054	Gilbert R Tonge M	Small-molecule diffusion in polymeric matrices: testing free-volume theory in rubbery and glassy polymers	IUPAC Conference on Macromolecules and Materials Science April 2001 Stellenbosch South Africa

Project Number	Chief Investigator (Co-Authors)	Title of Publication	Reference
01/054	Gilbert R Van Berkel K; Russell G	Nanoscale surface processes in emulsion polymerisation	24th Australasian Polymer Symposium Beechworth PA32 2001
01/082	Kennedy B Moussa S	Structural studies of the distorted perovskite $\text{Ca}_{0.25}\text{Cu}_{0.75}\text{TiO}_3$	Materials Research Bulletin 36 2525-2529 2001
01/083	Kennedy B Hunter B	Cation disorder in Pb-doped $\text{SrBi}_2\text{Nb}_2\text{O}_9$	Chem.Mater. 13(12) 4612-4617 2001
01/089	Lindoy L Ramli M; Smith S; Bartolo N; Izard B	The synthesis and antibody conjugation of a daminodihydroxyaryl derivative of EDTA (DAHA) for radiolabelling with ^{64}Cu for imaging cancer	RACI NSW Organic Group 21st Annual One day Symposium 4 December 33 2001 Wollongong Australia
01/089	Lindoy L Ramli M; Smith S; Bartolo N; Izard B	Use of the dihydroxyaryl derivative of EDTA (DAHA) for radiolabelling antibodies with ^{64}Cu for imaging cancer	World Chemistry Congress 1-6 July PE 200 2001 Brisbane Australia 1-87631-36-2
01/150	White P Rath P	Stemmed obsidian artefacts from Garua Island; a case of coals to Newcastle?	B.A. Honours Thesis, Department of Archaeology, University of Sydney 2001
01/190S	Gale S Pisanu P	The late Holocene decline of Casuarinaceae in southeast Australia	Holocene 11(4) 485-490 2001
94/007	Gale S Haworth R; Pisanu P	The ^{210}Pb chronology of late Holocene deposition in an eastern Australian lake basin	Quat. Sci. Rev. 14 395-408 1995
94/026	Napper D Hidi P; Sangster D	Radiation crosslinking and grafting of a swollen polymer	AINSE Conference on Radiation Biology and Chemistry 16-18 November 78 1994 Melbourne Australia 0 9598472 3 5
94/026	Napper D Hidi P; Sangster D	Reactions of a surfactant swollen polymer	RACI 10th National Convention 27 September - 2 October 116-117 1995 Adelaide Australia
97/026	Gilbert R Monteiro M	Designer polymer colloids	Chem. Aust. 64 12-14 1997
97/026	Gilbert R Kukulj D	Polymerization at high conversion	Polymeric Dispersions. Principles and Applications, ed. J.M. Asua, Kluwer Academic, Dordrecht 97 1997
97/026	Gilbert R Clay P; Russell G	Molecular weight distributions in free-radical polymerizations. 2. Low-conversion bulk polymerizations	Macromolecules 30 1935-1946 1997 0024-9297
97/032	Napper D Hidi P; Sangster D	Accelerated dissolution of water-insoluble polymer by surfactant	MACRO98 37th International Symposium on Macromolecules IUPAC World Polymer Congress 12-17 July 702 1998 Queensland Australia 0 9585708 1 7
98/105	Napper D Hidi P; Sangster D	Advances in the stabilisation of swollen polymer by radiation	Radiation 98 15-17 November 25 1998 Sydney Australia 0 9598472 8 6
98/106	Gilbert R	How γ -radiolysis gives unique information in emulsion polymerizations	AINSE 40th Anniversary Symposium 95-100 1998

Project Number	Chief Investigator (Co-Authors)	Title of Publication	Reference
98/162R	Barbetti M Hua Q; Zoppi U	Bomb radiocarbon in tree rings from northern NSW	Seventh Australasian Conference on Isotopes in the Environment, 24-26 September 24 2001 Robertson Australia
99/107	Donlon D Williams A-M; Bennett C; Siegele R	Strontium in 19th century Australian children's teeth	15th International Conference on Ion Beam Analysis, incorporating the 12th AINSE Conference on Nuclear Techniques of Analysis. 15-20 July P3-12 2001 Cairns Australia

University of Tasmania

01/171C	Samson C Edgar G	Use of sediment cores to document changes in coastal marine habitats since European settlement	AINSE Environment Workshop Archives of Human Impact of the Last 200 Years September 27 15-21 2001 Lucas Heights Australia 0 9577217 6 5
96/070	Sedwick P Harris P; Robertson L; McMurtry G; Cremer M; Robinson P	A geochemical study of marine sediments from the MacRobertson Shelf, east Antarctica: initial results and palaeoenvironmental implications	Annals of Glaciology 27 268-274 1998
96/070	Sedwick P Harris P; Robertson L; McMurtry G; Cremer M; Robinson P	Holocene sediment records from the continental shelf of MacRobertson land, east Antarctica	Paleoceanography 16 212-226 2001
00/99/110	van Moort J McQueen K; Pwa A	Geochemical and electron paramagnetic signatures in quartz from a multi-stage vein environment, Cowarra gold deposit, New South Wales	J. Geochem. Explor. 72 211-221 2001

University of Technology Sydney

00/143	Stevens M Evans P; Mino N; Noorman J; Prior M; Stelcer E	Characterisation of ion implanted PET electroless plated with Ni and Pt	15th International Conference on Ion Beam Analysis, incorporating the 12th AINSE Conference on Nuclear Techniques of Analysis 15-20 July P2-56 2001 Cairns Australia
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University of Western Australia

00/039	Dodson J Ramrath A	Late Tertiary and Tertiary Quaternary transition in southwestern Australia	Quaternary Science 20 397-408 2000
00/039	Dodson J Ramrath A	An upper Pliocene lacustrine environmental record from south-western Australia	Palaeogeogr. Palaeoclimatol. 167 309-320 2001
00/039	Dodson J	A vegetation and fire history in a subalpine woodland and rainforest region, Solomons Jewel Lakes, Tasmania	Holocene 11 111-117 2000
00/039	Dodson J	Holocene vegetation change in the Mediterranean climate-type regions of Australia	Holocene 11 673-680 2001
00/039	Dodson J Zhou W	Radiocarbon dates from a Holocene deposit in southwestern Australia	Radiocarbon 42 229-234 2000

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University of Western Sydney			
00/114	Musca C White J; Pal R; Dell J; Antoszewski J; Faraone L; Burke P, Faraone, P. Burke	p-to-n type conversion mechanisms for HgCdTe exposed to H ₂ /CH ₄ plasmas	J. Electron. Mater. 30(6) 762-767 2001 0361-5235
96/087	Stachowiak G Stachowiak G; Evans P	Wear and friction characteristics of ion-implanted zirconia ceramics	Wear 241 220-228 2000
99/127	Bradshaw D Bradshaw F	Maintenance nitrogen requirement of an obligate nectarivore, the honey possum, <i>Tarsipes rostratus</i>	J. Comp. Physiol., B 171 59-67 2001 0174-1578
99/127	Bradshaw D Morris D; Bradshaw F	Water and electrolyte homeostasis and kidney function of desert-dwelling wallabies in Western Australia	J. Comp. Physiol., B 171 23-32 2001 0174-1578
99/129	Dodson J Mooney S	A comparison of the environmental changes of the post-European period with those of the preceding 2,000 years at Lake Keilambete, south-western Victoria	Australian Geographer 32 163-179 2001
99/130	Dodson J Stevenson J; Prosser I	A late Quaternary record of environmental change and human impact from New Caledonia	Palaeogeogr. Palaeoclimatol. 168 97-123 2001
01/119	Ritchie R Raghupathi S	Aluminium toxicity in yeast <i>Saccharomyces cerevisiae</i> (CM-52)	COMBIO December 11-14 I-64 2000 Wellington New Zealand
00/121	Osman F Castillo R; Hora H	Numerical programming of self-focusing at laser plasma interaction	Laser Part. Beams 18 59 2000 0263-0346
00/121	Osman F Castillo R; Hora H; Hoelss M; Scheid W; Wang J; Ho Y	Accelerations of electrons in vacuum by lasers and the accuracy principle of nonlinearity	SPIE Conference on High Power Lasers in Energy Engineering 3886 145 2000 Osaka Japan
00/121	Osman F Castillo R; Hora H	Principle of high accuracy for the nonlinear theory of the acceleration of electrons in vacuum by lasers at relativistic intensities	Laser Part. Beams 18 135 2000 0263-0346
00/121	Osman F Castillo R; Hora H	Relativistic self-focusing of laser beams for the fast ignitor	Chin. Phys. Lett. 137 2000 0256-307X
00/121	Osman F Evans P; Castillo R; Collins M; Gardner T; Chan W; Hora H; Stening R; Aydin M; Rowlands T	Suppression of pulsation by laser beam smoothing and ICF with volume ignition	18th International Atomic Energy Agency Fusion Energy Conference October 484 2000 Sorrento Italy
00/121	Osman F Castillo R; Hora H	Focusing and defocusing of the nonlinear paraxial equation at laser plasma interaction	Laser Part. Beams 18 73 2000 0263-0346
00/121	Osman F Evans P; Castillo R; Hora H	Geometric phases and monodromy at singularities	14th National Congress of the Australian Institute of Physics 10 2000 Adelaide Australia
01/110	Ng L Garnett J; Zilic E; Nguyen D	Effect of monomer structure on radiation grafting of charge transfer complexes to synthetic and naturally occurring polymers	Radiat. Phys. Chem. 62 89-98 2001 0146-5724

Project Number	Chief Investigator (Co-Authors)	Title of Publication	Reference
98/121	Castillo R Osman F; Hora H	Relativistic self-focusing of laser beams for the fast ignitor	3rd Asia Pacific Plasma Theory Conference 102 1998
98/121	Castillo R Osman F; Hora H	Relativistic self-focusing of laser beams in vacuum	Conference Proceedings Bulletin of the American Physical Society 43 1797 1998 New Orleans USA
98/121	Castillo R Osman F; Hora H	Review of ablation processes at and above the classical threshold	Conference on High Power Laser Ablation. The International Society for Optical Engineering SPIE 3343 127 1998 Santa Fe New Mexico
99/132	Osman F Castillo R; Hora H; Boreham B; Bolton P; Newman D; Obolu S; Aydin M; et al	Beam-matter interaction physics for fast ignitors	Fusion Eng. Des. 44 215 1999 0920-3796
99/132	Osman F Castillo R; Hora H; Miley G; Kelly J; Salvaggi G; Tate A	Proton metal in thin films with Boltzmann distribution similar to nuclear astrophysics	Fusion Technol. 36 331 1999 0748-1896
99/132	Osman F Castillo R; Hora H; Hoelss M; Scheid W; Wang J; Ho Y	Acceleration of electrons in vacuum by lasers at relativistic energies	IFSA Conference 1171 1999 Bordeaux France
99/132	Osman F Castillo R; Hora H; Kelly J; Miley G	Proton reactions in metals with Boltzmann distribution similar to nuclear astrophysics	APS Centennial Meeting, Bulletin of the American Physical Society 44 258 1999
99/132	Osman F Castillo R; Hora H	Relativistic and ponderomotive self-focusing at laser plasma interaction	J. Plasma Phys. 61 263 1999 0022-3778
99/132	Osman F Castillo R; Hora H	Paraxial approximation at relativistic self-focusing for the fast ignitor	IFSA Conference 484 1999 Bordeaux France

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01/165C	Fisher P Vickers R	Bulk stress due to surface damage of crystalline silicon and germanium	Applied Physics Letters 79 3458 2001
00/132P	Rozenfeld A Cornelius I; Bradley P; Maughan R	A computational technique for simulations of energy deposition by charged particles in complex small Si volumes	IEEE Trans. Nucl. Sci. 2423-2428 2000 0018-9499
00/132P	Rozenfeld A Bradley P; Allen B; et al	Application of silicon diode arrays for microdosimetry in BNCT and FNT	Frontiers in Neutron Capture Therapy, edited by Hawthorne et al., Kluwer Academic/Plenum Publisher 5615-5622 2001
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Project Number	Chief Investigator (Co-Authors)	Title of Publication	Reference
00/166	Woodroffe C Umitsu M; Buman M; Kawase K	Holocene formation and paleoecology of the Shoalhaven River deltaic-estuarine plains, southeast Australia	Holocene 11 407-418 2001
00/166	Woodroffe C Morrison R	Reef-island sedimentation and atoll soil formation	Catena 44 245-261 2001
98/124P	Liu H Wang G	Investigation on electrode materials for lithium-ion batteries	PhD Thesis 2000
98/155R	Chivas A Garcia A; Van der Kaars S; Couapel M et al	Sea-level and environmental changes since the last interglacial in the Gulf of Carpentaria, Australia: an overview	Quatern. Int. 83-85 19-46 2001
99/138	Brown H Oslanec R	Segregation of brominated polystyrene to polymer/inorganic interfaces	International Workshop on Advances in Materials Science and Technology 3-6 April 164 2000 Singapore
99/142	Rozenfeld A Bradley P; Cornelius I; Flanz J	New silicon detector for microdosimetry applications in proton therapy	IEEE Trans. Nucl. Sci. NS-47, N4 1386-1394 2000 0018-9499
PGRA	Marinero D Dou S; Horvat J; Boldeman J; Weinstein R; Sawh R	Effect of uranium doping and thermal neutron irradiation on the flux pinning of silver-clad Bi-Sr-Ca-Cu-O tapes	IEEE Transactions on Applied Superconductivity 11(3) 3896-3899 2001
PGRA	Marinero D Dou S; Horvat J; Guo Y; Boldeman J; Gandini A; Weinstein R; Sawh R; Ren Y	The effects of uranium doping and thermal neutron irradiation on the pinning properties of Ag/Bi-2223 tapes	Physica C 341-348 1119-1120 2000 0378-4363

Victoria University

97/172S	Cussen L Vale C; Anderson I; Høghøj P	Tests of a silicon wafer based neutron collimator	Nuclear Instruments and Methods A471 392-397 2001
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Performance Indicators for AINSE

1. Objective (1): to provide a mechanism for users in member organisations of AINSE to have access to major nuclear science and engineering and associated facilities at ANSTO and other agreed sites for research purposes (for example, meet an acceptable level of the Universities' demand for access to such facilities.)

Key Performance Indicator KPI(1)

Percentage of the demand for access to facilities and services required by the Universities which is met through the AINSE awards where:

- “demand” is determined by the number of applications for eligible projects applying for AINSE Awards.
- [The number of eligible projects is determined by the number of applications for AINSE Awards after ineligible projects (as specified in the guidelines for preparing applications) have been taken out by the Secretariat.]
- “facilities and services required by the Universities” is the list recommended by the AINSE Specialist Committees and approved by Council (the list is published each year in the Guidelines for preparing AINSE Award applications).
- “Universities” is taken to include all higher education institutions which are members of AINSE.

KPI(1) = (Number of AINSE Awards for use of LHSTC facilities and services) divided by (number of eligible applications requesting use of LHSTC facilities and services) expressed as a percentage.

Year	1995	1996	1997	1998	1999	2000	2001
No. of applications	228	248	247	172	175	233	245
No. of awards	201	207	201	147	159	201	203
KPI(1)	88%	83%	81%	80%	91%	86%	82%
KPI(1) (excl. RIEF)	69%	64%	66%	86%	91%	86%	82%

Note: KPI(1) reflects to a large extent AINSE's policy of providing some support for every worthy project without disadvantaging the best projects by under-funding them. It assumes that the AINSE Awards are sufficient to achieve meaningful research outcomes in all cases. The AINSE Specialist Committees, in particular, have the responsibility of ensuring that all projects recommended for support are “worthy”. That is, they satisfy AINSE as to their high scientific merit, their scientific and technical feasibility, and the adequacy of plans, personnel and resources for their execution (ref: Guidelines for the preparation of applications for AINSE Awards, Section 5). The Council has the ultimate responsibility for ensuring all Specialist Committees maintain these standards. The inclusion of projects funded under the RIEF Program should possibly be excluded since RIEF Grants are for developing research infrastructure. These Grants are included in the KPI for Objective 4.

Other Performance Indicators for Objective 1

Number of applications and Awards as a percentage of the number of member universities (including RIEF funded grants)

Year	1995	1996	1997	1998	1999	2000	2001
No. of universities	31	34	36	35	36	36	37
Applications/uni	7.4	7.3	6.9	6.9	4.9	6.4	6.7
Awards/uni	6.5	6.1	5.6	5.0	4.4	5.5	5.5

2 Objective (2): to facilitate graduate and undergraduate education and training experience utilising major nuclear science and technology facilities at ANSTO and other agreed sites (for example, make a significant contribution to postgraduate training in nuclear science and technology.)

Key Performance Indicator KPI(2)

The number of University students awarded AINSE Postgraduate Research Awards as a percentage of those applying where.

- Number of postgraduate students is determined by the number of eligible applications for AINSE PGRAs.

KPI(2) = (Number of University students awarded AINSE APRAs) divided by (Number of University students applying for AINSE APRAs) expressed as a percentage.

Note: Many other postgraduate and Honours Year students gain training experience through AINSE Awards to their supervisors but the degree of training is varied (significant supervision and training from qualified staff at the facilities is not guaranteed when students use the facilities and services) and the outcomes unknown. Expenditure on the

undergraduate AINSE Winter School at ANSTO program is small in comparison with the AINSE PGRA scheme. The prime objective of the program is to encourage more students to undertake postgraduate education - which should be reflected in the number of future applications for AINSE PGRAs. The AINSE Postgraduate Research Award provides about the only measure of performance and outcome (ie: a PhD having a significant content of nuclear science and technology).

Year	1995	1996	1997	1998	1999	2000	2001
No. of PGRA applications	14	13	13	23	23	39	22
No. of PGRAs awarded	4 + 2*	6 + 3*	6 + 2*	6 + 2*	8 + 1*	17	12
KPI(2)	43%	69%	62%	35%	39%	44%	54%

(Note*: Special graduate student awards without stipend)

Other Performance Indicators: The number of University students awarded AINSE Postgraduate Research Awards per member university of AINSE.

Year	1995	1996	1997	1998	1999	2000	2001
No. of universities	31	34	36	35	36	36	37
Applications/uni	0.45	0.38	0.36	0.66	0.64	0.61	0.59
PGRAs/uni	0.19	0.26	0.22	0.23	0.25	0.33	0.32

The total number of students completing PhD theses who have used facilities and services made available through AINSE.

3 Objective (3): to encourage collaboration and cooperation between member organisations of AINSE in areas primarily related to nuclear science and engineering and their applications.
(for example, the number of meaningful collaborations arising from AINSE-supported projects.)

Note: Meaningful collaborations can be measured by the number of joint publications, however, unless AINSE has been provided with a copy of the publication it is not always possible to identify the affiliations of the authors. It is intended to seek this information in the future by means of the annual Progress Reports. In the interim, since the main purpose of Objective (3) is to encourage collaborations between University researchers and ANSTO staff, a measure of collaboration (of a sort) can be obtained from the number of collaborative projects identified from application forms for AINSE Awards.

Key Performance Indicator KPI(3)

Interim KPI(3) = (Number of collaborative projects each year) divided by (Total number of AINSE supported projects) expressed as a percentage where:

- “collaborative projects” refers to AINSE Awards involving ANSTO and university staff as joint investigators (obtainable from application forms).

Year	1995	1996	1997	1998	1999	2000	2001
Collaborative projects	115	124	135	137	122	136	139
Total no. of projects	201	207	201	174	159	201	203
KPI(3)	57%	60%	67%	79%	77%	68%	68%

(Note: This indicator can be “forced” by giving preference to AINSE Awards that are collaborative - which is a condition in the case of RIEF grants for AMS projects and for use of the SIMS.)

Future performance indicator for objective 3

Number of papers naming ANSTO and university staff as joint authors published in refereed journals and conferences with ISBN numbers, etc. expressed as a percentage of Awards and PGRAs.

4 Objective (4): to sustain and support the development of major nuclear science and technology facilities at ANSTO and other agreed sites for shared use by member organisations of AINSE (for example, funds raised for the development of facilities).

Key Performance Indicator KPI(4)

Funds raised for constructing and developing major nuclear science and technology facilities in Australia accessible to member organisations through AINSE expressed as a percentage of AINSE membership subscriptions.

Where:

- “Funds” in this context means grants from external sources (such as LIEF Grants) paid into the AINSE bank account. It excludes the value of in-kind contributions and funds administered through member organisations. It also excludes joint ANSTO/University Large Grants (for research equipment at ANSTO) originating from AINSE/ANSTO collaborations, etc. In the future, it will include contributions from the Long Term Projects Reserve.

KPI(4) = Total value of external grants for constructing and developing major facilities divided by annual membership subscriptions from ANSTO and the universities (expressed as a percentage).

Year	1995	1996	1997	1998	1999	2000	2001
External grants	\$ 445,000	\$ 795,000	\$610,000	\$600,000	\$496,864	\$1,276,770	\$250,292
Subscriptions	\$1,430,700	\$1,470,600	\$1,638,300	\$1,719,300	\$1,795,700	\$1,876,077	\$1,919,754
KPI(4)	31 percent	54 percent	37 percent	35 percent	28 percent	68 percent	13 percent

Overall Performance Indicator

The tangible benefits (expressed in financial terms) received by member universities of AINSE in return for membership subscriptions paid.

The indicator that has been used for many years by AINSE is the benefit/subscription ratio for determining subscriptions each year. This indicator incorporates the expenditure by AINSE in support of all activities undertaken by the universities under Objectives 1) to 4). It includes some measure of efficiency on a year to year basis in as much as AINSE does not generally pay ANSTO or the service provider until the access to facilities (or the results of sample analyses, etc.) have been provided. Since it does not reflect actual time on facilities or actual samples measured etc., it relies on the Specialist Committees, the Executive Committee and ultimately, Council, to ensure that the costs for use of facilities etc. are acceptable to the universities. It also incorporates decisions on how AINSE income is spent. For example, money spent on developing facilities at ANSTO is considered as a benefit shared equally between all universities.

AINSE KPI = Sum of [(Actual expenditure on AINSE Awards) + (Expenditure on Fellowships and PGRAs) + (expenditure on conference subsidies) + (expenditure on development of facilities)] divided by (Total Subscriptions paid by Universities).

Excluded from the KPI is expenditure on all administrative functions such as Secretariat operations (including salaries and superannuation), Council and committee meetings, conference management, publications and promotions, funds transferred to reserves, etc.

Note: Many of the activities excluded from the KPI, such as Council meetings and publications, provide useful outcomes including networking and dissemination of knowledge. However, these outcomes are not easy to quantify and do not provide Councillors with tangible evidence that membership subscriptions are justified. They are therefore excluded. There is a strong incentive to keep administrative costs down.

The latest figures for this index are reproduced below.

Year	1994	1995	1996	1997	1998	1999	2000	2001
AINSE KPI	2.67	2.75	3.86	3.35	3.53	3.05	3.23	3.39
KPI (without RIEF)	2.08	2.17	2.29	1.83	1.99	2.10	2.23	2.78
5 year average	2.96	2.91	3.15	3.16	3.24	3.32	3.41	3.31

(Note: The 5 year average for each university is used for determining its membership subscription and relates to the preceding 5 years.)

An acceptable benefit subscription ratio is 3.00 : 1.

The benefit subscription ratio should not be less than 2.00 : 1.

University Codes

Code University

ACU	Australian Catholic University
ADE	University of Adelaide
AKL	University of Auckland
ANS	ANSTO
ANU	Australian National University
BAL	University of Ballarat
CBR	University of Canberra
CQU	Central Queensland University
CSU	Charles Sturt University
CUR	Curtin University of Technology
DEA	Deakin University
ECU	Edith Cowan University
FLI	Flinders University
GRI	Griffith University
JAM	James Cook University
LAT	La Trobe University
MAC	Macquarie University
MEL	University of Melbourne
MON	Monash University

Code University

MUR	Murdoch University
NCT	University of Newcastle
NSW	University of New South Wales
NTU	Northern Territory University
QLD	University of Queensland
QUT	Queensland University of Technology
RMI	RMIT University
SCU	Southern Cross University
USQ	University of Southern Queensland
SWI	Swinburne University of Technology
SYD	University of Sydney
TAS	University of Tasmania
UNE	University of New England
USA	University of South Australia
UTS	University of Technology Sydney
UWA	University of Western Australia
UWS	University of Western Sydney
VIC	Victoria University
WOL	University of Wollongong

Specialist Committees

ACC	Accelerator Science
AMS	Accelerator Mass Spectrometry
BIO	Radiopharmaceuticals and Neutron Irradiation
ENG	Engineering, Materials and Nuclear Technology
ENV	Environmental Science and Becquerel
NS	Neutron Scattering
PLA	Plasma Fusion
RAD	Radiation including ARL and Auckland

