



Australian Research Council

ARNAM

Australian Research Network
for Advanced Materials

2006 Annual Report

Administering Institution: The Australian National University

Executive Summary

The ARC Australian Research Network for Advanced Materials (ARNAM) has established itself as a major collaborative focus for the materials community in Australia. Its workshops and initiatives, particularly those oriented towards the needs of early career researchers (ECRs) and research students, have gained considerable momentum and recognition in the community over the past year. There are now well over 500 members from every institution actively involved with materials research from across the country. The four materials themes in materials for IT and communications applications, structural and functional materials, advanced manufacturing and sustainability are coordinated by four active nodes. Within these classifications, the interests of a very broad spectrum of materials research activities are catered for by the network, as indicated in this report by way of the wide range of materials research areas that received support from the network in 2006.

ARNAM has a governance structure and working committees that develop initiatives and deliver programs for the benefit of ARNAM members. Programs in 2006 included: a highly successful annual workshop covering all materials areas; funding of collaborative research visits by and specific events for ECRs and research students; funding of lecture tours by international materials experts; funding support for ECRs and students to attend prime materials conferences held in Australia; funding for specialist interdisciplinary materials workshops organized by members; initiatives to link materials researchers with industry; and web-based information and communication services to support the network and its members. Several highlights are listed below.

- The annual event, [ARNAM2006](#), held in Brisbane at the University of Queensland, was a spectacular success. It focused on interdisciplinary presentations from ECRs and research students (115 oral and poster papers), with seven key overviews given by international and Australian materials experts. It brought together for the first time in Australia materials researchers covering the entire spectrum of materials research. Young researchers were heavily involved in the organization of the workshop and there were major best paper prizes for ECR and student presentations. The young researchers were unanimous in telling us that this was the best research workshop that they had attended in Australia and the only one focused on their research. They are eagerly looking forward to the ARNAM2007 annual event.
- A special workshop was held at the University of Sydney for ECRs to assist them in applying for research grants, especially from the range of ARC programs. A focus was on potential collaboration across institutions and between ECRs. This event was attended by around 70 participants during the course of the day and was deemed so successful that ARNAM is planning to hold more than one such event in 2007 in key capital cities.
- The ECR/student collaborative research support scheme of ARNAM is now arguably our most important funding program, based on enormous interest in the scheme and also the depth of breath of collaborative outcomes that have resulted. 30 collaborative research visits were funded in 2006, with successful applicants coming from 11 separate organizations across the country. Collaborative visits to 11 countries were supported as well as several national collaborations.

- After a slow start in 2005, the specialist research workshop events program gained momentum in 2006, with funding approved for four events. In addition, although not part of an official ARNAM funding scheme, the network supported funding requests from eight more established conferences to assist a cohort of ECR and student attendees. This type of request was supported strongly by our ECR/student committee and the ARNAM executive has now approved a specific program with funding to officially support such requests.
- During 2006, the network established strong links with Future Materials (FM), a national network that supports interactions of the research community with industry. ARNAM funding to FM provides promotion of ARNAM member institution research to over 4000 materials industries on the FM database, as well as showcasing of ARNAM research in the FM newsletter. It is hoped that such links will lead to increased interactions with industry and to new high quality ARC Linkage proposals in the future.
- ARNAM's website continues to be developed apace and has become an important resource for materials researchers across the country. Key features include: a comprehensive listing of materials events, nationally and internationally; on-line application forms for membership, network-funded programs and abstract submission for events; links to other networks and research organisations; a detailed membership list with research expertise and searchable profiles, including key publications of every member; and an extensive (interactive) list of capabilities and facilities available within member institutions.
- In 2006, ARNAM was proactive in lobbying for the 2008 International Conference on Electronic Materials to come to Australia. This is a multidisciplinary materials meeting that attracts over 2000 participants and Australia would not have won the bid without being able to demonstrate the support of the Australian materials community through ARNAM.

ARNAM has revamped its governance structure somewhat over the past 6 months based on experience to date and in the interest on efficiency and timeliness of decisions. The Management Board now meets once a year to discuss and approve policy, overall programs and budget, whereas the Executive Committee meets roughly 6 times a year to endorse funding requests, approve budget adjustments and decide upon new initiatives and annual event details. The ARNAM researchers have performed extremely well in research funding as well as in the number and quality of materials publications over the past year. Although accurate numbers are difficult, member publication lists suggest over 2000 journal publications in 2006, of which around 40% appear to involve some cross-institutional collaboration.

Professor Jim Williams
Convenor

List of Contents

1. Introduction.....	5
2. Goals and Objectives	6
3. Network Progress and Initiatives	7
4. Website - http://www.materials.com.au	11
5. Membership Categories and Groups	13
6. Governance and Committees	14
7. Contribution to National Benefit.....	18
8. Future Directions and Concluding Remarks.....	19
9. Financial Statement	20

Appendices

1. Recipients of Funding in 2005	22
2. Register of Groups	25
3. Register of Participants	35
4. Register of Facilities	64
5. ARNAM 2006 Abstracts	77
6. ARNAM 2007 Annual Workshop Website Details	130
7. Report from Grant Recipients	142
8. ARNAM 2007 Flyer	180
9. Future Materials News – article ARNAM 2006	181
10. Future Materials News – March 2007	183
11. Future Materials Industry Contact email	191
12. Network Flyer	193
13. ECR Workshop December 2006 Program	194
14. ECR Workshop December 2006 Website details.....	195

1. Introduction

The ARNAM network has been effectively in operation for a little over 2 years now. ARNAM has a growing membership that is now over 500, has established a governance structure and committees that are working well and has developed initiatives and programs that our feedback suggests are of substantial benefit to ARNAM members who now largely constitute the research community in Australia. Funded programs now include: a highly successful annual workshop (focused on early career researchers and students) covering all materials areas; funding of research collaborations by and specific events for ECRs and research students; funding of international materials experts to tour the country; support for ECRs and students to attend prime materials conferences held in Australia; support for specialist interdisciplinary materials workshops organized by members; initiatives to link materials researchers with industry; and (interactive) web-based information and communication services to support the network and its members. ARNAM has generated a high level of interaction and enthusiasm across the materials community in Australia based on attendance at events, the large number of funding requests and the numbers of high quality researchers nominating for ARNAM committees. Apart from support of events, ARNAM focuses many of its funding programs on supporting ECRs and research students since more experienced researchers have more of the traditional funding avenues open to them for travel and collaboration. This direction has been strongly supported by the membership.

This report outlines the objectives and achievements of the network over the past year. The network aims and objectives are outlined in section 2 and in section 3 we report on key initiatives and progress towards achieving the four broad aims of ARNAM. Section 4 outlines the information resources available on ARNAM's website, including the interactive research profiles and facilities databases. Membership information is given in section 5 and ARNAM governance and committee structures are outlined in section 6. The national benefit of the network is summarized in section 7 and some future directions highlighted in section 8. The financial statement is in Section 9. In addition, we provide extensive additional data, including examples of website information, databases, membership lists, the abstract booklet for the annual event in 2006 and funded programs in appendices at the back of the report.

2. Goals and Objectives

The Australian Research Network for Advanced Materials (ARNAM) links together materials scientists and engineers from diverse disciplines under the one banner to substantially enhance the impact and outcomes of materials research.

The Network's research profile is based around the production, processing, characterization, theory and properties of advanced materials, covering bulk, near-surface and thin films. The manufacturing industry and end-user focus of the research covers the following areas:

1. Materials drivers for high tech IT, communications and sensor applications
2. Innovative structural and functional materials for diverse applications
3. Materials solutions for advanced manufacturing
4. Materials for a sustainable Australia

ARNAM aims to foster materials research interactions not only to enrich the research in the four chosen areas but to open up entirely new cross-disciplinary opportunities under the heading of emerging materials technologies.

ARNAM, through its multidisciplinary workshops and focus on materials issues at the boundaries of traditional disciplines, encourages the building of non-traditional research teams and collaborations.

ARNAM has a particular focus on initiatives to support ECRs and research students. This will be achieved through its web-site, communication channels, focus on substantially improving the awareness of and access to materials research expertise, facilities and interdisciplinary opportunities across the country and internationally, as well as funding support for collaborative research.

ARNAM aims to link with Future Materials and other industry bodies in engaging the materials research community with industry both to assist them with materials problem solving and to maximize technology transfer and commercialization opportunities emanating from the country's innovative materials research.

A key aim of ARNAM is to build upon such existing international research links by using the breadth and depth of ARNAM's research programs and capabilities to enhance and expand the scope of international research collaborations and also to establish formal agreements with appropriate materials networks and bodies in other countries and regions.

3. Network Progress and Initiatives

In this section, we report against the network's four main aims, outline initiatives related to each aim and indicate progress to date.

3.1 Aim 1: To enhance research collaboration, interchange of research results and ideas.

Initiatives:

- Disseminate materials R & D news and information amongst as many researchers as possible via attracting a wide membership that are accessible through posting on ARNAM's website and ARNAM's cross disciplinary committees.
- Hold a large interdisciplinary materials workshop annually as a focus event around the annual general meeting.
- Provide seed funding for specialist topical and interdisciplinary workshops and conferences.
- Develop tangible links and programs with other research networks.
- Take a lead role in bringing the community together for cooperative grant applications.
- Develop links with international research networks and organisations.
- Develop a web-based newsletter and communication channels to report and promote materials research across the country.
- Endeavour through out international links, to bring a major IUMRS sponsored international conference to Australia.

Progress:

- Wide advertising and ease of on-line registration of ARNAM membership has led to a rapidly growing membership, with over 500 national members to date (see Appendix 3).
- Our website has become an essential resource for our membership for materials news and information, with the expertise and facilities databases particularly important for stimulating collaborative research and access to facilities across the country (see section 4 and Appendices 2 and 4).
- The 2006 annual event was a major national interdisciplinary materials workshop which was held in Brisbane in June 2006 (ARNAM2006). This workshop focused on presentations by early career researchers and research students across the whole materials spectrum. Experienced researchers from overseas and nationally presented several keynote overviews of materials research. ARNAM heavily subsidized the travel and accommodation of all ECR and student presenters at the workshop (see ARNAM 2007 details in Appendix 6).
- ARNAM has funded four specialist, interdisciplinary workshops that have brought together researchers from across the country, with a very high representation from ECRs and research students. The focus was on presentations by ECRs and research students, with tutorial-type presentations by established researchers. Applications for support of events are made on-line from the web site and an events committee reviews applications and recommends support to the ARNAM executive committee.
- ARNAM also introduced a new category of funding to support ECRs and students to attend already established materials conferences and workshops in Australia. ARNAM funded seven such conferences/workshops (Details in Appendix 1).
- ARNAM has been proactive in bringing the materials community together to provide submissions to NCRIS and assist the newly-appointed facilitators to put together proposals in the areas of materials characterization and fabrication.

- A very successful ECR workshop held in December at Sydney University to provide instruction to assist ECRs in applying for ARC grants schemes. An overwhelming number of registrations were received, with in excess of over 70 participants over the course of the day from Sydney, Brisbane, Wollongong and Melbourne, which was triple of what initially had been expected based on expressions of interest. Approximately half of the attendees were ECRs, a quarter were students with the balance of experienced researchers and other interested parties. The results of a brief survey of attendees were overwhelmingly positive and encouraging – when asked how strongly they would recommend attendance of such a workshop to their peers the response was on average 85% towards an absolutely positive recommendation. There were several expressions of disappointment particularly from members in Melbourne who were unable to attend, and a request was made for the workshop to be run again in the southern states. An ECR in Melbourne has already volunteered to organize a similar workshop in the near future. ARNAM was grateful for the direct participation of the ARC in this workshop. (For details of the program please see Appendix 13)
- ARNAM has attempted to link to and coordinate activities with other research networks, particularly other ARC networks. Examples are: sharing IT support and information on websites, as well as the coordination of ARNAM2006 with an international nanoscience and technology conference organized by the ARC Nanotechnology Network. ARNAM and ARCNN have jointly supported several ECR/student collaborative visits, workshops and conferences.
- ARNAM has taken steps to formalize links with several international networks, such as the IUMRS (International Union of Materials Research Societies) and World Materials Network. Other links are with EU research networks and the Global Nanotechnology Network, where ARNAM members represented Australia at meetings of these networks. ARNAM also has key members of these international networks on its International Advisory Board.
- In 2006, ARNAM was proactive in lobbying for the 2008 International Conference on Electronic Materials (ICEM-08) to come to Australia. This is a multidisciplinary materials meeting that attracts over 2000 participants and Australia would not have won the bid without being able to demonstrate the support of the Australian materials community through ARNAM.
- Through its communications committee, ARNAM has recruited a science writer to take examples of materials research and develop articles for the network members and the general public. In collaboration with Future Materials articles about the researchers in the network and their research is regularly distributed both within ARNAM membership and the 2200+ industry subscribers to the Future Materials newsletters. This is received very well, and in the short time the newsletter has been distributed there have been a small number of enquiries from industry about research which is being conducted.
- We note that member publication lists for 2006 indicate over 2000 publications in total, with up to 40% involving multi-institutional authorship.

3.2 Aim 2: To enhance access to expertise, facilities and cooperation, particularly in areas of materials research at the boundaries of traditional disciplines.

Initiatives:

- Web-based information services of available materials expertise and facilities.
- Provision of support for collaborations and/or research visits.
- Sponsoring of distinguished speakers.

- Encourage interdisciplinary events.

Progress:

- ARNAM has developed expertise and facilities databases connected to an interactive web site that allows members to search and identify specific expertise and facilities that are available across the country.
- ARNAM has funded 21 student researchers and 9 ECRs to undertake collaborative visits to other institutions to access expertise and facilities not available locally. The ECR/student committee reviews and recommends support for ECR/student collaborative visits and the ARNAM executive committee does the same for programs involving more experienced researchers (Details in Appendix 1. Reports from grant recipients are in Appendix 7).
- All of the 11 workshops and conferences to date have been interdisciplinary, as are the ARNAM2006 and 2007 workshops. Without ARNAM support, this diverse participation at interdisciplinary events would not have occurred (See Appendix 1).
- ARNAM has indicated to the NCRIS materials characterization and materials fabrication areas that the network will encourage requests for travel/accommodation support to access NCRIS facilities, particularly those from ECRs and research students.

3.3 Aim 3: To enhance research training and career opportunities for students/early career researchers (ECRs), and to help them to connect with the materials community, nationally and internationally.

Initiatives:

- Web-based information services of available materials resources.
- Provision of support for collaboration and/or research support.
- Encouraging collaboration amongst ECRs and fostering joint grant applications.
- Holding an annual ECR workshop.
- Setting up of working committees for ECR and student matters.
- Sponsoring of distinguished speakers to present at ECR/student meetings.

Progress:

- Much of the information on the web site is geared towards ECRs and research students (see section 4 below). For example, the databases previously mentioned are a resource that is particularly valuable for seeking out expertise and facilities amongst ARNAM members. In addition, application forms for collaborative research support of ECRs/students and other travel/visiting scientist support are easy to access from the web site.
- ARNAM's ECR/students committee has worked exceptionally well. They undertake a number of tasks (see terms of reference in section 6). Initially the committee was under the mentorship of an experienced researcher (Professor Michelle Simmons, Federation Fellow) and has been extremely active in developing a number of initiatives for ECRs/students including various funding schemes for collaboration, visiting scientist support, recommending strong involvement of ECRs/students in workshop organization and targeted support for ECRs/students at such workshops. All initiatives have been accepted by the ARNAM Management Board. As indicated in Appendix 1 there have been more than 40 ECRs/student collaborative visits supported to date and all 16 specialist workshops have received support that has gone almost exclusively to ECR/student travel and accommodation. A new committee will be elected in 2007.

- A meeting with the specific purpose to get feedback from the ECRs and students was held at the end of the ARNAM 2006 workshop. Overall these member were pleased with the direction of the network. Out of this meeting came the idea of holding workshops for ECRs on acquiring ARC funding, which was successfully held at the University of Sydney in December 2006. The program is in Appendix 13.

3.4 Aim 4: To connect with industry both directly and through links with industry associations and networks.

Initiatives:

- Develop a close working relationship with the industry-based network Future Materials as a primary means of connecting to Australian industry.
- Link with the prime professional society in the materials space as a means of promoting the research capabilities of the network more widely.
- Establish a database of research capabilities that can be promoted to industry.
- Connect with the broader community through appropriate communication of materials research together with its applications and end uses.

Progress:

- ARNAM has taken a much greater role in its cooperation with Future Materials (FM). The FM news contains a greater emphasis on research conducted within the network, and is distributed through both networks, receiving good feedback. The newsletter also has a recent initiative of highlighting ECR research successes which we hope will attract industry support for collaboration and grants. A large portion of the FM capabilities database has been integrated with the ARNAM facilities database, and this is one of the most popular aspects of the ARNAM websites. There has also been greater contact with industry through FM having forwarded enquiries directly from industry regarding research through the ARNAM network to make direct contact with researchers, see Appendix 11 for an example of this.
- Materials Australia (MA), the peak materials professional association has agreed to links with ARNAM. MA has actively promoted ARNAM to members and advertised the materials research capabilities in their magazine, including articles by ARNAM's science writer. MA has sponsored the ARNAM2006 workshop and their CEO is on the ARNAM communication committee.
- The ARNAM capability databases have been promoted to industry not only through FM and MA but through other industry associations such as AEEMA and AIG.
- The ARNAM sponsored Nova (Academy of Science) web site on Advanced Materials which is now online and is an important way of promoting materials to the general community.
- Through our collaboration is FM, ARNAM is also establishing an online resource to be listed publicly for industry to register issues and problems which could be resolved through research, where researcher may also contribute, address or pursue the problems proposed.

4. Website - <http://www.materials.com.au>

The ARNAM website has proven to be a very popular and useful tool. During the second year of using the new website our membership has nearly doubled again, increasing around 300 members to around 550.

The website features searchable databases for information on the following:

- Profiles of each Member including contact details, research, activities and a photo (around 550 records)
- Organisation/Departments represented by the members (around 95 records)
- Facilities lists for each Organisation/Department (around 750 records)
- Events concerning materials science being held nationally and internationally (around 175 records)

All of the information in the databases is linked and related. For example, each member profile has a link to the page for the all the information about organisation/department that they are from, listing all the other members from the same department and the facilities available there.

In the near future ARNAM intends to improve this interactivity further by creating an administration section for each member, so they can edit their online member profile at any time.

Access

The ARNAM website also rates very highly on many Google searches, with more than 60% of our visitors coming to our site from Google. In some instances it is the only resource available on the internet for certain researcher and facility details.

More than 25% of visitors come directly to the site from an email link or having directly types in the URL, therefore must already be members or have found the site through some direct promotion. The remaining around 15% of visitors come from other search engines or links from other sites.

Hits

The ARNAM website has nearly doubled its number of hits since this time last year. Over the reporting year it received on average per day 208 pages viewed by 66 different visitors. These figure have been steadily increasing by an impressive 17% per quarter.

Date range	Visitors	Page views
1/01/06 - 31/03/06	38	153
1/04/06 - 30/06/06	52	206
1/07/06 - 30/09/06	70	209
1/10/06 - 31/12/06	66	176
1/01/07 - 31/03/06	74	241

Nearly 77% of our visitors have never visited the site before, the remaining 23% are returning visitors.

Our peak number of hits was the day when we sent out notification of the new workshop at which time we received nearly 500 visitors and 2700 page views in a 2½ day period.

Popular pages

The most popular pages on the site (excluding the home page) have changed since last year.

Most of the changes have occurred with pages which either did not exist or have become more highly developed, eg Events, Facilities, Jobs pages, becoming very popular.

Page	Visitors	Page views
Events (2005: rank 4)	1975	3173
Profiles (2005: rank 1)	1923	6753
Facilities (2005: rank 11)	1770	2889
Funding (2005: rank 2)	1331	2369
Joining (2005: rank 3)	951	1533
Jobs (2005: n/a)	758	1020
Travel (2005: rank 6)	748	975
Groups List (2005: rank 5)	699	1647
Visiting Scientists (2005: rank 9)	637	883

We were surprised to discover that our events listing experienced so much popularity. This page has been developed significantly during the year, and may be one of the largest lists of its kind on the internet.

International demographics

There is a surprising amount of interest in the ARNAM website from outside Australia.

More than 50% of visitors are viewing the site from a country other than Australia, as compared with around 40% last year.

Country	% of visitors	
	2005	2006
Australia	59.21%	48.47%
United States	9.92%	11.28%
India	3.36%	4.21%
United Kingdom	3.23%	3.91%
Germany	1.60%	2.61%
China	1.90%	1.97%
Canada	1.80%	1.93%
Singapore	1.13%	1.63%
France	1.80%	1.59%
Japan	1.10%	1.57%

There have been visitors from nearly the whole internet world: 147 different countries. 16% (compared to 12% last year) of visitors are viewing the site in a language other than English and the site has been translated into 54 different languages (compared to 23 last year). The following table contains information about what portion of visitor come from which countries for the top 10 countries. The ranking of these effectively has not changed.

Note all of the above statistical figures have been provided by using Google analytics and are actually slightly less than they should be as they exclude any access from RSPHysSE servers so the figures are not artificially inflated by administrative access to pages.

5. Membership Categories and Groups

A detailed membership list is given in Appendix 3, indicating that ARNAM now has over 500 members from across the country. This section provides information on the distribution of that membership. Note that our definition of an ECR is that the submission of PhD was within the past 5 years.

Distribution of membership

Experienced Researcher (ER)	39.4%
Early Career Researcher (ECR)	21.0%
Student	38.6%

Representation by Organisation

Organisation	Type	Departments	Members	ERs	ECRs	Stdnt	Affil
ANU	university	16	90	45	17	27	0
CQU	university	1	1	1	0	0	0
CSIRO	university	3	8	4	3	1	0
Curtin	university	3	8	6	0	2	0
Deakin	university	1	34	5	9	19	0
Flinders	university	1	20	2	1	17	0
Griffith	university	1	2	0	1	1	0
LaTrobe	university	1	3	1	2	0	0
Macquarie	university	1	1	0	1	0	0
Monash	university	3	29	10	7	12	0
QUT	university	2	5	3	0	2	0
RMIT	university	1	8	1	1	6	0
Swinburne	university	1	4	2	1	1	0
UAdelaide	university	3	4	2	1	1	0
UCanberra	university	1	1	0	1	0	0
UMelb	university	4	29	6	8	15	0
UNewcastle	university	2	10	6	3	1	0
UNSW	university	8	73	28	15	30	0
UQ	university	7	39	15	8	16	0
USouthAust	university	4	17	7	2	8	1
USyd	university	9	55	21	12	22	0
UTS	university	3	9	4	2	3	0
UWA	university	3	26	9	4	12	0
UWollongong	university	3	18	10	6	2	0
DSTO	statutory	1	1	1	0	0	0
ANSTO	statutory	1	15	11	3	1	0
Advanced Nano Ltd	commercial	1	1	1	0	0	0
Comalco Ltd	commercial	1	1	1	0	0	0
Materials Australia Ltd	commercial	1	1	0	0	0	0
Nixus Ltd	commercial	1	1	0	0	0	0
ResMed Ltd	commercial	1	1	1	0	0	0
		89	515	203	108	199	1

DEST lists 35 Universities & Other Self-accrediting Institutions which do any scientific research, and of these 24 (68.5%) now participate in the ARNAM network. All members of the “Group of 8” universities participate, and these members generally represent 67% of the network.

6. Governance and Committees

Introduction

ARNAM has revamped its governance structure somewhat over the past 6 months based on experience to date and in the interest of efficiency and timeliness of decisions.

ARNAM's governance is built around a representative Management Committee, which, under the chairmanship of Dr Greg Tegart, now meets only once a year, to discuss and approve policy, overall programs and budget. This Committee sets the guidelines for ARNAM operations, committee structure and overall budget approval. All the committees report to the Management Committee.

The Executive Committee, consisting of the Node Managers constitutes the effective day-to-day working committee that approves grants and funding within the guidelines approved by the Management Committee. It meets roughly a minimum of six times a year with extra meetings called if necessary.

ARNAM has 3 working groups that review funding proposals, events and communications and other initiatives and make recommendations to the Executive Committee for approval. An International Advisory Committee has been established to provide a sounding board for ARNAM's performance, plans and initiatives. This Committee will meet by conference call once yearly after the Management Committee meeting and is particularly important for linking with industry and other networks both nationally and internationally.

ARNAM has four broad research areas (and communities) that are managed by Node Managers that form the Executive of ARNAM. The nodes ensure that the interest of their sub-communities are catered for, particularly in terms of events and workshops.

Network Convenor

Professor Jim Williams, Australian National University

Node Managers:

Professor Jim Williams, ANU

responsible for

Materials drivers for high tech IT, communications and sensor applications

Professor David Young, UNSW

responsible for

Innovative structural and functional materials for diverse applications

Professor Liangchi Zhang, USyd

responsible for

Materials solutions for advanced manufacturing

Dr George Collins, ANSTO

responsible for

Materials for a sustainable Australia

Network Manager
Mrs Belinda Barbour, ANU

Network Administrator and Website Manager
Ms Elena Nobleza, ARNAM

6.1 Management Committee Membership

Chair: Dr Greg Tegart

Professor Jim Williams

Professor Liangchi Zhang

Professor David Young

Dr George Collins

Elected Members:

Membership Representative: Professor John Dell, University of WA

ECR/Student Representative: Dr Chris Hutchinson, Monash University

Student Representative: Dr Jamie Quinton, Flinders University (to be replaced in 2007)

Mr Angus Robinson, Chief Executive, Australian Electrical and Electronic
Manufacturers Association

Mr William Wachsman - Executive Officer, Future Materials Australia

6.2 International Advisory Committee Membership

Chair: Dr Greg Tegart

Convenor: Professor Jim Williams

Current Members:

Professor BVR Chowdari,
President MRS - Singapore

Professor David Cockayne
Oxford University

Dr Nicholas Hartley
European Commission

Dr Merrilea Mayo
Director, GUIRR
National Academy of Sciences, USA

Dr Alan Taub
Research Director
General Motors Research and Development, USA

6.3 Executive Committee Membership

Professor Jim Williams, ANU

Professor Liangchi Zhang, USyd

Professor David Young, UNSW

Dr George Collins, ANSTO

6.4 Working Committees

As part of the networking strategies and programs, the ARC Australian Research Network for Advanced Materials has set up the following interdisciplinary working committees.

The Terms of Reference were developed and accepted by the ARNAM Management Committee.

6.4.1 ECR/Student Committee Membership - 2006

Professor Michelle Simmons - Mentor
Director of the Atomic Fabrication Facility and Federation Fellow
The University of New South Wales

Dr Julie Cairney (ECR)
The University of Sydney

Dr Chris Hutchinson (ECR)
Monash University,

Mr Aravind Dasari (Student)
The University of Sydney

Mr David Oliver (Student)
Australian National University

Terms of Reference

This subcommittee's role will be to identify issues and initiatives that are important to students and early career researchers (ECR) thereby enhancing their research experience and career prospects.

It's charter is to establish initiatives targeted towards students and ECRs such as organizing scientific meetings, workshops and events, mentoring programs, recommending travel bursaries, setting up ECR-specific web information, encouraging collaboration and fostering joint grant applications. The committee will be expected to recommend budget break-up across initiatives in future years.

A new Committee will be elected in 2007.

6.4.2 Events Committee Membership

Chair: Dr Jian Feng Nie,
Monash University

Associate Professor Mark Hoffman
University of New South Wales

Dr Jin Zou
University of Queensland

Dr Jody Bradby
The Australian National University

Terms of Reference

This subcommittee will be responsible for setting up processes for soliciting ideas and event applications, reviewing applications, recommending appropriate Network events including conferences, workshops, industry days, sponsored colloquia etc.

6.4.3 Communications/Outreach Committee Membership

Chair: Professor Jim Williams

The Australian National University

Dr Nagarajan Valanoor - ECR Representative

University of NSW

Dr Tania Vodenitcharova - Membership representative

University of Sydney

Ms Maruta Rodan

CEO of Materials Australia

Mr David Salt

The Australian National University

Ms Elena Nobleza

ARNAM

Terms of Reference

The role of the Communications/Outreach Sub-Committee is to develop methods of communication to connect with its members. The Committee will also discuss and develop appropriate outreach activities for the network and communicate them (with budget) to the Executive and Management Committees for further discussion and selection of key initiatives to be supported.

7. Contribution to National Benefit

The national/community benefits and outreach programs are the following:

- ARNAM has focused on advanced materials as a major national research priority area under 'Frontier Technologies for Building and Transforming Australian Industries' and hence, with its interdisciplinary emphasis and strong national and international collaboration, boost Australia's materials research impact as an enabling science and technology for supporting and stimulating Australian manufacturing industry. The ARNAM program on 'materials for a sustainable Australia' will also contribute to a further national priority: 'An environmentally Sustainable Australia'.
- ARNAM will have a particular focus on supporting research students and ECRs so that they are exposed to a broad range of complementary approaches to materials research from diverse disciplines, as well as enabling access to a range of experimental facilities across the country. This will enrich their research experience, open up improved employment prospects or better equip them for the manufacturing workforce.
- ARNAM will provide a one-stop shop for industry to access materials information and research, as well as providing updates on new materials technologies, by linking with organizations like Future Materials.
- ARNAM will take steps to promote the benefits of its research to the community by encouraging its member organizations and individual members to engage in public debate and take part in public lectures. In addition, the network and some of its member organizations will continue to engage with Questacon and the Academy of Science Nova website to both promote materials research and its applications and to connect with the community and school students to excite them about materials and their impact on society.
- ARNAM also envisages a role in communicating and promoting the outcomes of materials research to the government and the community by working up appropriate case studies that articulate the industry/community benefits of Australian materials research, and publishing them for example in the Future Materials newsletter.
- More generally, ARNAM will communicate the full spectrum of its activities in materials in a number of ways: through its website information content; by public lectures and direct engagement with the community and school students; by linking with industry bodies to better communicate with a wider group of industries; by providing support for writing up 'good news' materials stories for the popular press; by encouraging its members to publish in high impact journals, promote Australian materials researchers as suitable invited speakers at international meetings; propose outstanding Australian Materials researchers for key international awards; and by linking with international networks to use their communication channels to promote Australian research.

8. Future Directions and Concluding Remarks

ARNAM has made considerable progress towards achieving its key aims. Major successes include our interactive website, our support of interdisciplinary workshops and events, both for the whole materials membership and for specialist subfields, our programs and funding to support collaboration and networking amongst ECRs and research students, winning the right to hold a major international materials meeting in Australia, and our linkages with industry bodies. Over the next year, we will increase our momentum in these areas of initial achievement, as well as moving forward in other areas.

- ARNAM will endeavour to play a leading role in bringing the community together to plan for major national materials research initiatives such as NCRIS coordination, grant submissions for Centres of Excellence and CRCs.
- Enhance our interactions with industry and industry bodies to open up possibilities for joint research and applications for ARC Linkage projects.
- Continue to increase our membership by actively pursuing advanced materials researchers from around the country in a comprehensive way through a variety of means such as promotions, mutual memberships with other networks and direct contact with departments and institutes.
- Plan a successful large international interdisciplinary materials conference
- Further collaborate with industry by continuing to provide news and updates on research and researchers, and also continuing and improving our means to accommodate the desire to connect between industry and researchers through a variety of means.