



The Royal Society of New South Wales Bulletin and Proceedings 325

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May 2009

Future Events 2009

Lectures in Sydney are held in Lecture Room 1, Darlington Centre, University of Sydney at 7 pm on the first Wednesday of the month with drinks available from 6 pm.

Wednesday 3 June 2009 7pm

New Environmentally Friendly Approaches to Cooling Buildings

Prof Geoff Smith

Professor of Physics

University of Technology, Sydney

Southern Highlands Branch

Meetings are held on the third Thursday of each month in the Drama Theatre at Frensham School, Mittagong (enter off Waverley Parade), at 6.30pm.

next talk

Thursday June 18, at 6.30pm

In psychiatric terms deviant sexual behaviour derives from conditions known as the Paraphilias

Dr Stephen Hember Allnutt

see p4

Deadline for items for the next Bulletin ~

Monday June 15

Bulletin Editor, Bruce Welch

Membership Renewals

Most members have paid their renewals by now. Many more people have paid by electronic transfer without a hitch. If you are about to pay please do so soon as this will save us the expense of sending you a reminder notice in June.

We very much appreciate your support.

Marian Haire
Hon. Treasurer

Lecture 3 June 2009, Darlington Centre at 7pm

New environmentally friendly approaches to cooling buildings

Professor Geoff Smith

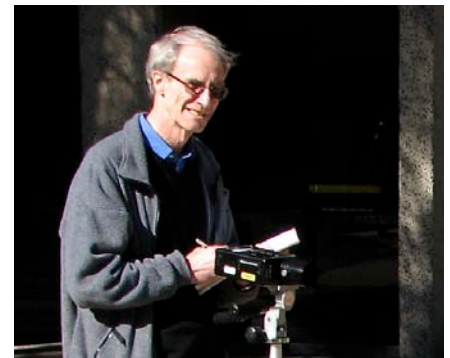
Department of Physics and Advanced Materials

University of Technology, Sydney

The potential for energy savings in the cooling of buildings is very large and of growing importance as living standards rise, as global warming impacts, and as the "heat island" effect gets worse with increased urbanisation. There are two aspects: (i) passive systems which minimise heat gains, and (ii) active systems and strategies which minimise or eliminate the need for electrically powered cooling. This talk will examine novel materials and systems which play a role in both active and passive reductions in the demand for electrically powered cooling. It will also include results with special paints and nanostructured coatings developed at UTS.

Amplification of night sky radiative cooling using nanostructures and heat mirrors will be outlined, in which material spectral properties and system design in combination optimally exploit the spectral and directional properties of incoming atmospheric thermal radiation. Useful cooling powers under clear skies at temperatures down to ~15°C below ambient are feasible in well engineered systems, while simple low cost systems can achieve useful cooling powers in the range 5°C to 10°C below ambient. There are a many ways such capabilities can be put to use.

Geoff Smith is Professor Emeritus in Applied Physics at the University of Technology, Sydney Australia. He has worked on the science and applications of nanomaterials for over 30 years. His group, in partnership with local and international industry, has pioneered developments in the fields of solar energy, energy efficient windows and paints, radiative cooling, natural lighting and LED lighting. Products and several patents have followed. Key contributions to nano-photonics, thin film optics and polymer optics feature in



his work with over 180 reviewed papers and several book chapters. He is chair of the Australian Standards committee on roof glazing and skylights, helped formulate Australia's recent energy efficient building codes, and has chaired an annual International Conference in the USA (SPIE -Nanostructured Thin Films) since 2006. Geoff has a number of overseas and local awards in the renewables and energy field including an honorary doctorate from the University of Uppsala in Sweden in 2003. He is a Fellow of the AIP and of the Institute of Energy.

Patrons

Her Excellency Ms Quentin Bryce AC

Governor-General of the Commonwealth of Australia

Her Excellency Professor Marie Bashir AC CVO Governor of NSW

Pollock Memorial Lecture

Over 350 people packed the Eastern Avenue Auditorium at the University of Sydney on Thursday 30 April to hear Professor Brian Schmidt discuss 'The universe from beginning to end'. Professor Schmidt provided us with insights into Dark Matter and Dark Energy, the principal combatants in our Universe, and described the intriguing ways in which such elusive concepts are observed and recorded.

This lecture is held in conjunction with the School of Physics at the University and we thank them for doing most of the organisation.

John Hardie



Professor Schmidt delivering the 2009 Pollock Memorial Lecture

Images courtesy of the University of Sydney

Meeting of Two Cultures Ceremony

In response to an invitation from the Mayor of the Sutherland Shire, Councillor Lorraine Kelly, Robyn Stutchbury, accompanied by Dr Noel Tait and historian Dr Peter Tyler, represented the Royal Society at the Meeting of Two Cultures Ceremony on the 239th anniversary of the landing of Lieutenant James Cook RN.

A commemorative tablet was erected at Kurnell to mark the point of landing of Cook by the Philosophical Society of Australasia in 1821. It is inscribed: "Under the Auspices of British Science, these Shores were Discovered by James Cook and Joseph Banks, the Columbus and Mycaenas of their time. This spot once saw them ardent in the pursuit of knowledge. Now, to their memory, this tablet is inscribed in the first year of the Philosophical Society of Australasia".



School children and the many visitors took a delight in the raising of the British Flag by members of the Royal Australian Navy dressed appropriately for the occasion and the performances by professional Aboriginal dancers from northern NSW.

Robyn Stutchbury



Professor Schmidt (left) accepting a speaker's medal from the President



A portion of the large audience for the Pollock Lecture

From the President

The Society's Collection

Work has now recommenced on examining the portion of the Society's collection held in a warehouse in south-western Sydney. The recently retired Mitchell Librarian, Elizabeth Ellis, recently elected a Member of the Society, our historian Dr Peter Tyler, Vice-President Robyn Stutchbury and I have embarked on regular visits to the site to sort through the collection, dispose of surplus or redundant material, and record and label boxes as required. The first half-day visit was held on Friday 27 March and the next is scheduled for this Wednesday 20 May. There are 8 pallets of boxes altogether so it will probably take at least another 6 visits to work through all the material.

Already we have found material of such significance that it really belongs with our archive collection in the Mitchell Library. There are also volumes dating from before the founding of the Society's initial incarnation (The Philosophical Society of Australasia, founded in 1821). Of some interest was a treatise on "The Blowfly" some 14 cm thick which we brought back to the office to be housed with the other items in our small library there.

Office

I'm very pleased that our new Office Manager, Liz de Rome, has been able to start work so quickly. She has fallen on her feet and is in the process of recruiting a replacement for Val Gregory, who continues for the moment in a reduced role until her replacement can begin. Many thanks also to our two volunteers, Harry and Noel, who have helped make sure the Bulletin gets out to all members.

Recent events

The Pollock Memorial Lecture, held on Thursday 30 April, was once again an outstanding success, and I would particularly like to thank the School of Physics at the University of Sydney, and its Head, Professor Anne Green, for the efforts they put into making the event such a success. This joint meeting attracted an audience estimated to be over 350 to the Eastern Avenue Auditorium of the University to hear Professor Brian Schmidt from ANU talk on The Universe from Beginning to End.

I attended the National Academies Forum held at the State Library of NSW on Friday 3 April on behalf of the Society. At the meeting the well known author Ronald Wright spoke on Darwin's Ape and the Progress Trap. He was introduced by Professor Kurt Lambeck, President of the Australian Academy of Science. This was the first event advertised through the Society on behalf of the Academy.

On Tuesday 21 April I attended a reception at Government House on behalf of the Society as a guest of the Governor to mark the 83rd birthday of HM The Queen.

The following Tuesday I attended a launch by Her Excellency of the film Yajillara, a story of Aboriginal achievement in a remote northern township, as a guest of the George Institute for International Health.

On Thursday 9 April I met with the Executive Dean of Science at Macquarie University, Professor Stephen Thurgate. We agreed that there were three areas of activity which the Society and the University could jointly progress:

- Use of Science House as a venue for holding content creation sessions for the Department of Education and Training's Connected Classrooms initiative.
- Conducting joint seminars with Macquarie on relevant scientific issues
- Resume holding Summer Schools for school students, perhaps using an updated model from our previous successful efforts at Macquarie.

The Society's Council at its last meeting agreed to pursue these projects, which all require effort on our part but equally would receive considerable support from the university.

John Hardie

RSNSW Bulletin and Proceedings 325



New Members

One new member was announced at the May meeting of the Society.

Peter Curtis - Full member

We welcome him into the Society.

Australian Institute of Physics NSW Branch

4th General Meeting 2009



Tuesday 23 June 2009 @ 6:30pm
'The Magnetic Universe Revealed
through Radio Polarimetry'
Dr Bryan Gaensler
University of Sydney

5th General Meeting 2009

Tuesday 28 July 2009 @ 6:30pm
'Physics for Medicine and Astronomy'
Dr Zdenka Kuncic
University of Sydney

Location of talks: Slade Lecture Theatre,
School of Physics, University of Sydney.
Refreshments are available from
6:00pm. Entrance to all events is free.

Dinner to follow at Buon Gusto
Restaurant, Abercrombie St.
Please contact Dr Fred Osman on 0418
444 477 to book.

RACI News

Weekly E-News
(including forthcoming events)
of The Royal Australian Chemical
Institute Inc. NSW Branch are obtainable
on their web site at <http://www.chem.unsw.edu.au/raci/News.html>



Southern Highlands Branch

Next meeting: Thursday 18 June 2009

Drama Theatre, Frensham School, Mittagong at 6.30 pm

In psychiatric terms deviant sexual behaviour derives from conditions known as the Paraphilias

Dr Stephen Allnutt, Clinical Director, NSW Community Forensic Mental Health Services

The presentation will provide an overview of the nature of Paraphilias

Dr Allnutt trained in psychiatry at McMaster University in Canada and in forensic psychiatry in Ottawa Canada. He has held a number of positions including Deputy Director of Mason Clinic (Auckland, NZ), Clinical Director of Long Bay Hospital (Sydney, Australia). He is currently Clinical Director of the NSW Community Forensic Mental Health Services. He has a ministerial appointment with the Sentinel Events-Homicide Subcommittee. He is the recipient of awards from the American Journal of Forensic Services and a NSW Premiers Gold Award for work with the NSW Court Liaison Service. He is conjoint Senior Lecturer at the UNSW. Dr Allnutt is a well received speaker and has presented and published papers both locally and internationally on forensic topics. He has scientific interest in the bizarre, the deviant and the dangerous.



Report of March Meeting *Managing bushfire risk in a changing world* by Professor Ross Bradstock

The Branch held its March meeting at 6.30 pm on Thursday 19th March in the Drama Theatre, Frensham School, Mittagong.

Professor Ross Bradstock, Director of the Centre for Environmental Risk Management of Bushfires at the University of Wollongong School of Biological Sciences spoke on Managing Bushfire Risk in a Changing World. He was introduced by the President, John Hardie.

Community interest in the topic was obvious with 101 people crammed into the Hall. They included 10 members from the local fire brigade and bush fire volunteers. Professor Bradstock spoke about how changes to human populations, landscapes and climate change are having a direct impact on fire and the associated risks to people and to biodiversity.

Modern bushfire management requires the assessment, measurement and mitigation of risks. Professor Bradstock concentrated on the management of risk by discussing the following questions:

1. How do we assess and quantify the risks?
2. How do we deal with them at large spatial and temporal scales?



3. How do we compare the effectiveness of different management activities?
4. How do we weigh up the trade-offs inherent in managing for multiple objectives and values?
5. Will the same set of management options yield the same results in different ecosystems?
6. How will climate change and change in human populations affect risk mitigation?
7. What policy and planning approaches will best address the problem, given an expanding knowledge base?
8. Maybe more money and resources should be made available?
9. Complacency was also mentioned and critical awareness.

A vote of thanks was proposed by Hub Regtop.

Hub Regtop.

Southern Highlands Branch Committee for 2009/10

At its AGM held on 16 April at Mittagong, the following were elected to the Branch Committee for 2009/10:

- Chair: Clive Wilmot
Vice-Chair: Hub Regtop
Secretary: Anne Wood
Treasurer: Mike Jonas
Committee: Ted Smith

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Contact your office bearers

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Clive Wilmot Vice President	02 4886 4199	Robyn Stutchbury Vice President	02 9427 6747
Bruce Welch Hon. Secretary (General)	02 9569 9928	Prof Jak Kelly Hon. Secretary (Editorial)	02 9419 6877
Marian Haire Hon Treasurer	02 8467 3575	Alan Buttenshaw	02 9569 0236
Jim Franklin	02 9514 2195	A/Prof Bill Sewell	02 9295 8434
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