April 9th 2009

NSW RACI wishes all it’s members at very Happy and Easter Break

Ensuring Australia’s SciTech Future Symposium

Are you a scientific academic, researcher, commentator or communicator? If so, you are invited to register your interest in attending the special event, SPARK – Ensuring Australia’s SciTech Future Symposium, presented by UTS and the Powerhouse Museum.

SPARK – Ensuring Australia’s SciTech Future 22 April 9.30am – 4.00pm (registration from 9.00am; lunch provided) at the Powerhouse Museum, Ultimo

A new approach to science and technology education in Australia is paramount to ensuring Australia’s SciTech future. SPARK is a science and technology education symposium about action; the one-day ’think-tank’ will provide all participants with an opportunity to contribute to the future of science and technology education in Australia.

Special guests include Dr Laura Grant, physicist and international science communicator. Dr Grant and others will highlight the lessons learned by others tackling similar problems as well as provide insights into the minds of our future scientists, mathematicians and engineers. To register your interest and secure your priority invitation to this pivotal event please send an email with the work ’SPARK’ in the subject line to events@uts.edu.au by Wednesday 15 April – a formal invitation to attend the symposium will then be sent to you.
Fluorotechnics – From Fungi to the Financial Review...

How to convert scientific discovery into commercial success

presented by

Associate Professor Peter Karuso
Department of Chemistry & Biomolecular Sciences, Macquarie University

Fluorotechnics is a prime example of how Macquarie University is at the forefront of innovative approaches to commercialise University-based multidisciplinary research (Chemistry, Microbiology, Proteomics) and collaboration with industry. Fluorotechnics was established through the isolation of a unique compound found in fungus that is able to fluoresce in the presence of proteins. This property has given rise to a range of commercially successful applications. This seminar will outline the discovery of fluorophores from fungi and reveal the chemistry behind Fluorotechnics’ products and how academic science can be translated into industrial chemistry applications.

Date: Thursday 14 May 2009
Venue: Club City Central (Sydney RSL Club), 565 – 567 George Street, Sydney
Level 3 Function Room

Program:
6.15 – 6.30  Registration
6.30 – 7.30  Guest Speaker - A/Prof Peter Karuso
7.30        Dinner
9.00        Close

RSVP by Friday 8 May 2009
Edwina Hine
Ph. (02)9663 4960, Fax (02) 9385 6141
E-mail: racinsw@chem.unsw.edu.au

Registration includes 3 course meal and all drinks

RACI Members $50 (Fees include GST)
Non Members $65
Student Concession $30

Registration Form/Tax Invoice – Complete and return by email or fax
RACI ABN 69 030 287 244

Contact Name:____________________  Tel or e-mail _________________________________

Names of People Attending:
1. ________________________________  3. ________________________________
2. ________________________________  4. ________________________________

Please find enclosed credit card details or cheque (payable to RACI New South Wales) for
$_____________________

[ ] Cheque  [ ] Amex  [ ] MasterCard  [ ] Visa  [ ] Credit Card
Cardholders Name:____________________  Signature:

Expiry Date:_______ /________
CONTAMINATED SITE ASSESSMENT, REMEDIATION AND MANAGEMENT: SHORT COURSES FOR ENVIRONMENTAL PROFESSIONALS – MODULE B

ABOUT SHORT COURSES
The Faculty of Science is presenting this series of short courses for professionals in the area of contaminated site assessment, remediation and management (CSARM).
This initiative has the support of the Department of Environmental Sciences, the NSW Department of Environment and Climate Change (DECC) and industry consultants. This program will enable participants to update their specific area of expertise, to extend their knowledge base and to network with colleagues in industry and government.

SHORT COURSE OUTCOME S
Updated understanding of:
> Legislative framework, CLMA Act 2008
> Guidelines & Applications
> Designing sampling strategies
> Contaminant fate and transport
> Human & ecological toxicology
> ERA s for decision making
> Effective report writing
> Remediation approaches

MODULE B – Planning Effective Site Assessment
Date: Thursday 28th May – Saturday May 30th 2009

TARGET AUDIENCE
> Environmental professionals
> Contaminated site consultants
> Project managers
> Environmental officers from all levels of government
> Environmental engineers
> Science and engineering graduates interested in entering this field

Participants will learn the principles of effective site assessments, interpreting the results and reporting and evaluating uncertainties.

PROGRAM
Day 1 - 8.30am – 5.00pm
> Purposes of site assessment
> Reporting responsibilities
> Principles of field design and sampling
Day 2 - 8.30am – 5.00pm
> Site visit to demonstrate site design issues
> Evaluation of field results
Day 3 - 8.30am – 3.00pm
> Case studies
> Future issues of site management
> Changes under the CLMA Act 2008
> Practice of site assessment
> Sampling issues
> Dealing with uncertainties & constraints
> Interpretation and use of site assessments

TO REGISTER ONLINE GO TO:
www.science.uts.edu.au

FURTHER INFORMATION
And to be put on our mailing list contact marea.martlew@uts.edu.au
+61 2 9514 1766

FORMAT
Each module runs for 3 days and includes online preliminary work, lectures, laboratory sessions/site visits and case study analyses. You are free to choose the modules you feel will be of most benefit. Certificates of Attendance will be awarded for each module. A follow-up work segment is offered for participants wishing to receive a Certificate of Completion for the module. Completion of modules may count towards a tertiary qualification or industry accreditation.

PREREQUISITES
This series is designed for the professional development of scientists, engineers and managers working in field of contaminated sites or those who have an interest in working in this field.

PRESENTERS
include UTS academics, DE CC and CSIRO officers, industry practitioners, experts in environmental law.

VENUE
UTS Faculty of Science
Building 4, Harris Street, Ultimo

COST
Module B: $1450 (incl of GST )
Early Bird, Group and UTS Alumni
Discounts available

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Updated understanding of:
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> ERA s for decision making
> Effective report writing
> Remediation approaches

MODULE C – Contaminants of Concern
Date: Thursday 2nd July – Saturday 4th July 2009

TARGET AUDIENCE
Environmental professionals
> Environmental officers from all levels of government
> Contaminated site consultants
> Project managers
> Environmental engineers
> Science and engineering graduates interested in entering this field

Participants will learn why it is essential to characterise chemical contaminants in both soils and waters. Approaches to identifying and dealing with chemicals of environmental concern at contaminated sites, will be covered in the context of the new CLMA Act 2008.

PROGRAM
Day 1
> Introduction to contaminant groups
> Chemical properties of contaminant groups
> Site visit to demonstrate material collection issues

Day 2
> Instrumentation in laboratory and field
> A analysis of material from site collection
> Investigation of groundwater contamination

Day 3
> Standard methods
> QA/QC considerations
> Future directions and methodologies

TO REGISTER ONLINE GO TO:
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FURTHER INFORMATION
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FORMAT
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PREREQUISITES
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FUTURE MODULES
Other modules to be presented later on in 2009:
> D: Contaminants Cause Harm 13th – 15th August
> E: Risk-based Site Assessment 24th – 26th September
> F: Remediation Principles and Effective Site Reporting 12th – 14th November

PRESENTERS
include UTS academics, DE CC and CSIRO officers, industry practitioners, experts in environmental law.

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Website of the Week

**NSW Crystal Growing Competition**

Nominations for RACI Awards are now open

Like last year we will feature a detailed description of one award each week during the nominations period. This week we feature **Masson Memorial Scholarship Prize**

**Masson Memorial Scholarship Prize**

The Scholarship Prize, which has been established as a memorial to the late Sir David Orme Masson, Founder of the RACI, is open to any financial Member of the RACI or to any registered financial student of the RACI, who has attained the academic qualification of BSc or its equivalent, and who is eligible to proceed for a further year's study of Chemistry at BSc Honours level, either at a university or other approved institution in Australia. The Scholarship Prize will, therefore, be open to financial candidates wishing to proceed to BSc Honours or the fourth year of a BSc Honours course or the first postgraduate year following 4-year courses such as BAppScience, BSc (Industrial Chemistry), BSc (Chemical Engineering) or BE (Chemical Engineering) or their equivalent, at their own or any other approved institution. Their intended study is to be in the field of Chemistry.

The Scholarship Prize of $500 includes the interest from a Trust Fund but it is subsidised by contributions from the RACI. Payments will be made in two equal instalments, subject to satisfactory progress. The first payment will be made on announcement of the winner, with the final payment being made on satisfactory completion of the Honours year. In addition, a Memorial Medal, together with a copy of Len Weickhardt's book, "Masson of Melbourne - The life and times of David Orme Masson", will be presented at the satisfactory completion of the term of the Scholarship Prize.

The Scholar will be selected on his or her academic attainments, but if the achievements of two or more applicants are equal, other circumstances will be considered. Under the Trust Deed the Scholarship Prize can be awarded to one person only in each year. Applicants are invited, therefore, to state any circumstances which will assist the Board to award the Scholarship Prize to the applicant whom it will benefit most.

The selection of the successful applicant, which will be made by the Board of the RACI, will be final and conclusive. The Scholarship Prize will not be awarded if, in the opinion of the Board of the RACI, no applicant is worthy of it.

Applications (4 copies) should be forwarded to the National Office, 1/21 Vale Street, North Melbourne, Victoria 3051, by the closing date and the following particulars included:

1. Name in full, address, email, date and place of birth.
2. Particulars of preliminary education.
3. Academic qualifications and where obtained, full list of subjects passed and standard attained, prizes, honours or other awards. The detailed statement MUST be certified as accurate by a responsible officer of the Institute at which they were obtained.
4. Any special circumstances, and description of other activities which appear relevant.
5. Courses of study proposed and university, college or institute at which it is desired to study.
6. Reports (4 copies) from two referees personally acquainted with the applicant's academic experience and present standing.

Applications close 30 April.

**UNIVERSITY OF SYDNEY SUSTAINABILITY SYMPOSIUM**

The University of Sydney Institute for Sustainable Solutions is holding a Public Forum, Tuesday 14 April from 5.45 – 7.00pm at the General Lecture Theatre, Main Quadrangle, "Yes, We Can: Catalysing Hope for a Sustainable Future" and an International 3 day Symposium from 15 – 17 April 2009, "Catalysis: A major Key to Sustainability". For more information please visit the website: [www.science.usyd.edu.au/catalysis_symposium](http://www.science.usyd.edu.au/catalysis_symposium)
**Important Dates in Chemistry’s History March April 9-16**

9
b. 1930 F. Albert Cotton researcher in inorganic and structural chemistry.
• Ignacio Tinoco, Jr., proposed simple method for estimating secondary structure of ribonucleic acid (RNA) from sequence of nucleotides, 1971.

10
b. 1863 Paul Louis Toussaint Héroult discovered the electrolytic aluminium process in 1886, the same year that Charles Martin Hall discovered the same process for isolating aluminum, which is called the Hall-Héroult process; invented. the electric arc furnace for steel in 1900. which replaced some giant smelters for the production of a variety of steels.

b. 1887 Bernardo Alberto Houssay, Nobel Prize in Physiology or Medicine 1947 for his discovery of the part played by the hormone of the anterior pituitary lobe in the metabolism of sugar with Gerty T. Cori and Carl F. Cori for their research on the hormone of the anterior lobe and its role in the metabolism of sugar; discovered how glycogen is catalytically converted.

b. 1900 Arnold O. Beckman developed the pH meter; founded Beckman Instruments, 1934.

b. 1917 Robert B. Woodward, researcher in stereoselective organic synthesis; Woodward-Hoffman rules; Nobel Prize (1965) for his outstanding achievements in the art of organic synthesis.
• Patent Office established (Constitution, Art. 8, Sec 1) 1790: First patent on Potash and Pearl Ash to Samuel Hopkins.
• Emil Fischer discovered glucose, 1891.
• A. M. Collins synthesized polychloroprene, 1930.

11
b. 1804 Otto Erdmann, professor of chemical technology, U. Leipzig; redetermined atomic weights of elements with R. F. Marchand.

b. 1899 Percy L. Julian cosynthesized physostigmine, 1935; founded Julian Laboratories, 1953; prepared intermediates for commercial production of steroid hormones; first black chemist member of National Academy of Sciences.

b. 1938 Reatha Clark King, professor of chemistry and administrator.
• Humphry Davy discovered nitrous oxide, laughing gas, 1799.
• Robert B. Woodward & W. von Eggers Doering synthesized quinine, 1943.

12
b. 1773 Thomas Thompson, invented the instrument known as Allan's saccharometer; identified a zeolite mineral named thomsonite; promoted Dalton's atomic theory & Prout's hypothesis in his journal Annals of Philosophy and his book System of Chemistry.

b. 1872 Georges Urbain codiscovered lutetium (Lu, 71), 1907, with K. Auer von Welsbach; discovered the law of optimum phosphorescence of binary systems; researcher in isomorphism; chemical-composer.

b. 1884 Otto F. Meyerhof, researcher on muscle metabolism; discovered the law of optimum phosphorescence of binary systems; researcher in isomorphism; chemical-composer.

b. 1927 Alan MacDiarmid, researcher on the synthesis of conductive polymers; Nobel Prize in Chemistry (2000) with Alan J. Heeger and Hideki Shirakawa for the discovery and development of conductive polymers.
• NASA's Nimbus III weather satellite made first civilian use of nuclear batteries, 1969.

13
b. 1760 Thomas Beddoes, studied medical treatment of disease by the therapeutic inhalation of different "factitious airs" or gases and vapors; established Pneumatic Institution for Inhalation Gas Therapy, 1798.
• Tobern Bergman confirmed Muiller von Reichenstein's results that the substance isolated from a bismuth ore was a new element tellurium (Te, 52), 1784.
• The paper on the discovery of crown ethers and their complexes, “Cyclic polyethers and their complexes with metal salts” by C. P. Pedersen was received on this day, 1967; Published in J. Am. Chem. Soc., 1967, 89, 7017.

14
b. 1927 Alan MacDiarmid, researcher on the synthesis of conductive polymers; Nobel Prize in Chemistry (2000) with Alan J. Heeger and Hideki Shirakawa for the discovery and development of conductive polymers.
• NASA's Nimbus III weather satellite made first civilian use of nuclear batteries, 1969.

15
b. 1710 William Cullen, first to notice that heat is produced during compression of a gas.

b. 1896 Nikolai N. Semenov, researcher in chemical kinetics; Nobel Prize in Chemistry (1956) with Cyril N. Hinshelwood for their researches into the mechanism of chemical reactions.
• Ernest Solvay received his first patent entitled "Industrial Production of Sodium Carbonate by Means of Marine Salt, Ammonia, & Carbon Dioxide", 1881.

• Albert Ghiorso announced the discovery of rutherfordium (Rf, 104) by Ghiorso, et al., at University of California, Berkeley, 1969.

16
b. 1728 Joseph Black developed concept of latent heat & laid foundation for modern quantitative analysis.

b. 1838 Ernest Solvay, developed Solvay process for making commercial soda cheaply.

b. 1850 Sidney G. Thomas solved the problem of separating phosphorus from iron in the Bessemer Converter.

b. 1921 Marie M. Daly, first black woman to earn a PhD in chemistry, 1948 (Columbia University).
• Albert Hofmann accidentally discovered the hallucinogenic effects of lysergic acid diethylamide (LSD), 1943.
• Humphry Davy performed first physiological experiment on nitrous oxide by inhaling it, 1799.

Ref: Monthly Historical Events in Chemistry by Leopold May, The Catholic University of America
[http://faculty.cua.edu/may/Chemistrycalendar.htm](http://faculty.cua.edu/may/Chemistrycalendar.htm)