APMC10

ICONN2012 2012 International Conference on Nanoscience and Nanotechnology

ACMM22 22nd Australian Conference on Microscopy and Microanalysis

PERTH CONVENTION AND EXHIBITION CENTRE

CONFERENCE PROCEEDINGS

HOST ORGANISATIONS:

AMMS

Australian Nanotechnology Network

IFSM

CAPSM

The University of Western Australia

WELCOME

Welcome to the APMC-10, ICONN 2012 & ACMM-22

On behalf of the Organising Committee it is our pleasure to welcome you to the 10th Asia-Pacific Microscopy Conference (APMC-10), the International Conference on Nanoscience and Nanotechnology (ICONN 2012) and the 22nd Australian Conference on Microscopy and Microanalysis (ACMM-22) to be held in Perth, Western Australia, 5–9 February 2012.

Our 2012 Meeting has three core elements, as detailed on our website **www.APMC-10.org**. Each can be attended as a discrete event. These elements have been designed to provide delegates with the maximum benefit from travelling to the world's most (geographically) isolated capital city.

Over 1,000 registrants, from more than 30 nations, have registered and will provide a unique science and technology forum. Around 300 registrants are students, thanks to the generous bursaries provided by the Australian Nanotechnology Network, the Australian Microscopy and Microanalysis Society and the International Federation of Societies for Microscopy. The Scientific Exhibition has also been well subscribed and ~100 booths are displaying the latest microscopy and nanoscience infrastructure.

The traditional scientific programs of each Conference will be run in nine parallel, with some joint sessions, with over 850 papers in total. Delegates may attend any they choose through the single registration process. The Exhibition and social events are shared, to enable our communities to network extensively.

The Event is being conducted under the auspices of the Council of Asia-Pacific Societies for Microscopy (CAPSM), The Australian Nanotechnology Network (ANN), the Australian Microscopy and Microanalysis Society Inc (AMMS) and the International Federation of Societies for Microscopy (IFSM). These organisations and a range of sponsors have allowed us to develop the largest combined microscopy and nanotechnology event in Australia.

We look forward to meeting you through the Conference.

The Conference is dedicated to the memory of Professor David Cockayne FRS.

Brendan Griffin & Lorenzo Faraone
Co-Chairs
APMC-10, ICONN 2012 & ACMM-22

Nanotechnology is one of the fastest growing areas of research and technology. The ANN is dedicated to substantially enhancing Australia's research outcomes in this important field by promoting effective collaborations, exposing researchers to alternative and complementary approaches from other fields, encouraging forums for postgraduate students and early career researchers, developing industry links, increasing nanotechnology infrastructure, enhancing awareness of existing infrastructure, and promoting international links. ICONN 2012 is the major forum designed to achieve these goals.

Professor Chennupati Jagadish
Australian Nanotechnology Network (ANN)

Editors: Brendan Griffin, Lorenzo Faraone, Mariusz Martyniuk
ISBN: 978-1-74052-245-8

ICONN 2012

6.5	6.6	6.7	6.8	6.9
Nanotechnologies in Energy & the Environment **Nanowire and Solar Cells - 2**	**Bio-Nanotechnology & Nano-Medicine** **Nanoparticles in Biology - 2**	**Nano-Photonics & Nano-Electromechanics** **Photonics - 1**	**Nano-Manufacturing, Safety & Standards** **Exposure**	**Nanomaterials (including Nanoparticles)** **Mixed Materials**
Andrey Rogach	Istvan Toth	Richard Blaikie	Megan Osmond-McLeod	Ann Roberts
MEETING ROOM 5	MEETING ROOM 6	MEETING ROOM 7	MEETING ROOM 8	RIVERSIDE THEATRE
Hybrid structures of semiconductor nanocrystals in photovoltaics and hydrogen generation Andrey Rogach (Invited) (City University Of Hong Kong)	Dendritic delivery systems for peptide vaccines Istvan Toth (Invited) (The University of Queensland)	Nanoscale Lithographic Imaging using Surface Plasmons and other Resonant Reflection Phenomena Richard Blaikie (Invited) (University of Otago)	The durability of carbon nanotubes, and their potential to cause inflammation MJ Osmond-McLeod (Invited) (CSIRO), CA Poland, F Murphy, L Waddington, H Morris, SC Hawkins, S Clark, R Aitken, MJ McCall, K Donaldson	Electrochemistry Assisted Laser Ablation in Liquid : Applica-tions in Synthesis of Polyoxometalate Nanostructures C.W. Yang (Sun Yat-Sen University), P. Liu
				Synthesis of MgxZn1-xO nano-powder by urea based Chemical Combustion method Kalagadda Venkateswara Rao (Jawaharlal Nehru Technological University, Hyderabad), Vanga Rajender, Y Aparna, M Chandra shekar
A new strategy for constructing nanostructured electrodes for highly efficient flexible dye-sensitized solar cells: from pre-treatable building blocks to films Fuzhi Huang (Monash University), Dahong Chen, Rachel Caruso, Yi-Bing Cheng	Insight into Serum Protein Interaction with Functionalized Magnetite Nanoparticles in Biological Media Hilmi Wingo (The University of New South Wales), May Lim, Volga Bulmus, Lucia Gutierrez, Robert Woodward	Nano-antenna arrays based on intersecting and interacting gold nanorods Michael Cortie (University of Technology Sydney), Nicholas Stokes, Richard Wuhrer, Andrew McDonagh	Herringbones, stacked-cups or bamboo, ...towards a standard nomenclature for sp2 carbon nanoforms Irene Suarez-Martinez (Curtin University of Technology), N Grobert, C P Ewels	Mixture of fuel approach for the solution combustion synthesis of nanocrystalline bismuth ferrite K Eswara Prasad (Jawaharlal Nehru Technological University, Hyderabad) V Sasha Sai Kumar, K Venkateswara Rao
TiO2 Nanostructure Synthesized by Sol-Gel for Dye Sensitized Solar Cells (DSSC) Ari Ramalan (Physics Department Sebelas Maret University (UNS)), Harjana Harjana, Lailal Salsi	Reduction of Titanium Dioxide Nanoparticle Cytotoxicity via Polymer Grafting Roslyn Tedja (ARC Center Of Excellence for Functional Nanomaterials, University of New South Wales), Alexander H Soeriyadi, Michael J Whittaker, Christopher Marquis, May Lim, Cyrille Boyer, Thomas P Davis	Processing the CNTs' interaction in Web using an Electrostatic Field Based Process C.D. Tran (University of Southern Queensland), T. Tran-Cong, K. La-Cao & D. Ho-Minh	Risk Assessment for Nanotechnology - Exposure and systemic distribution Michael Roberts (Invited) (University of South Australia & Queensland), Jeff Gnce, Tom Robertson, Qian Zhang, Jiping Wang, H Jin, Xiaowen Liang, Tarl Prow, David Liu, Xin Lin	Synthesis of small Mg3Al-layered double hydroxide (sLDH) nanoparticles Zhiping Xu (The University of Queensland), Haiyan Dong, Harendra Parekh, Shaikur Rahman
A Novel TiO2 Material for High-Efficiency Dye-Sensitized Solar Cells Xia Wu (UQ), Max Lu, Lianzhou Wang	Effects of Serum Protein Adsorption on the Uptake and Biological Impact of Titanium Dioxide Nanoparticles on Human Lung Cell Lines in vitro Roslyn Tedja (ARC Center of Excellence For Functional Nanomaterials, University Of New South Wales), May Lim, Rose Amal, Christopher Marquis	Optical Properties of a Monolayer Array of Latex Spheres on a Flat Metal Surface Jian Zi (Fudan University), Lei Shi, Xiaohan Liu		Study of titania modified porous alumina membranes for protein transport and separation Manessha Nambiar (Flinders University), Peter Evans, Gerry Triani, Joe Shapter, Dusan Losic
Approach to Improved Dye Sensitised Solar Cell By Using Plasma Technology Gayathri Devi Ratmohan (Deakin University) Xiuquan Dai, Takuya Tsuzuki	Robust Fabrication of Chemical Micropatterns for Tumor Spheroid Preparation and Study of Nanoparticles Intratumoral- Transport Tianqing Liu (Ian Wark Research Institute, University of South Australia), Lorena Diéguez, Benjamin Thierry	Analytical Solution of the Fundamental Waveguide Mode of 1D Transmission Grating for TM Polarization Anishur Rahman (School of AME UniSA), Krasimir Vasilev, Peter Majewski	Nanometrology for accurate nanoscale measurements Jan Herrmann (National Measurement Institute), Bakir Babic, Heather J Catchpoole, Victoria A Coleman, Chris Freund, A. K. Jamking, Malcolm Lawn, Maitreyee Roy, John Miles	Selective catalyst reduction of NO_x by NH_3 at low temperature window in presence/absence of O_2 over several of S wt% V_2O_5/TiO_2 Hoang Anh Le (Korea Institute of Science and Technology) Jung Jongsoo, Chin Sungmin