

# PROGRAM

Wednesday 21<sup>st</sup> July 2010

10:30

Opening Remarks – South 3, Building 47, IST

10:45

Plenary Speaker 1: **Tanya Monro** - Optical fibres: Nanostructures enabling new properties and applications

Session 1: Properties (Irradiation) – South 3, Building 47

Session 2: Nanofibres – *Teleconference theatre*

11:30

**Barbara Fairchild**  
The amorphous carbon/diamond interface in ion implanted diamond  
(University of Melbourne)

**Usman Ali**  
Highly twisted continuous nanofibre yarns from an electrospinning process  
(Deakin University)

11:50

**Supakit Charuvanichborikarn**  
Photoluminescence study of implantation-induced defects in silicone and their interaction with boron  
(ANU)

**Jian Fang**  
Evolution of fibre morphology in magnet-enhanced electrospinning  
(Deakin University)

12:10

**Christopher Kalnins**  
Radiation dosimetry using optically stimulated luminescence in fluoride phosphate glasses  
(Uni Adelaide)

**Jing Wang**  
Electrospun thermo-responsive hydrogel NFs of OPePOSS crosslinked PNIPAM  
(Deakin University)

12:30

**Michelle Strack**  
High frequency micro-mechanical cantilevers from single-crystal diamond  
(University of Melbourne)

**Avinash Baji**  
Effect of fiber size on ferroelectric phase content of electrospun polyvinylidene difluoride fibers  
(University of Sydney)

12:50

Lunch

Session 3: Properties (Soft Matter) – South 3, Building 47

Session 4: Nanomaterials – *Teleconference theatre*

13:40

**Tony Aitchison**  
Dispersible carbon nanotube fillers for enhancing polymer processability  
(Flinders University)

**Cheng Fang**  
Preparation of porous silver by electrochemical etching  
(Flinders University)

14:00

**Yanbo Wang**  
Grain-size induced reverse phase transformation of nanocrystalline Ti alloy  
(University of Sydney)

**Tariq Mehmood**  
Effect of Multiwall carbon nanotube filler on electrical resistivity of fabric  
(Deakin University)

14:20

**Nisa Salim**  
Self-assembled nanostructured complexes and blends via hydrogen bonding interactions  
(Deakin University)

**Ben Flavel**  
Chemically immobilised carbon nanotubes on silicon: Stable surfaces for aqueous electrochemistry  
(Flinders University)

14:40	<b>Yang Cao</b> Shear strain and grain refinement in duplex stainless steel processed by high-pressure torsion (University of Sydney)	<b>Liyuan Zhang</b> Production, characterization and application of cellulose nanofibre from softwood pulp by soft mechanical decomposition (Deakin University)
15:00	<b>Lachlan Hyde</b> High refractive index polymers by plasma polymerisation (UNISA)	<b>Nishar Hameed</b> Block copolymer based nanomaterials: Nanostructured thermosets using reactive block copolymer (Deakin University)
15:20	<b>Anthony Sexton</b> Experimental and numerical characterisation of the mechanical behaviour and failure of advanced composite materials (ANU)	<b>Jinghua Fang</b> Fabrication and optics properties of gold “donuts”-like structure (University of Melbourne)
15:40	<b>Yang Yu</b> Gold and magnetic nanoporous microparticles with unique 3-D morphologies derived from Diatomaceous Earth (DE) for catalysis/ drug delivery applications (Ian Wark Res. Inst.)	<b>Salar Niknafs</b> A study of microstructural development of low carbon steel during the solidification at high rates (Uni Woll)
16:00	Afternoon tea break	
16:30	Short presentation 1: Properties ( <i>Details at end of program</i> ) – <i>SILC Building</i>	
17:00	Poster viewing – <i>SILC Building</i>	
17:30	Short presentation 2: Properties ( <i>Details at end of program</i> ) – <i>SILC Building</i>	
18:00	Poster viewing – <i>SILC Building</i>	
19:00-21:00	Barbeque	

# PROGRAM

Thursday 22<sup>th</sup> July 2010

08:30 Plenary Presentation 2: **Julian Gale** – Understanding the growth of materials through computer simulation: From nucleation to nanoparticles – *South 3, Building 47, IST*

09:15 Plenary Presentation 3: **Justin Gooding** - Silicon-base mesoporous photonic crystals: Towards smart biomaterials that can sense and deliver therapeutics – *South 3, Building 47, IST*

10:00

Morning tea break (30 mins)

## Session 5: Theory – *South 3, Building 47*

10:30 **Richard Lee**  
Modelling of carbon nanotubes with distinct bond lengths  
(University of Wollongong)

**Samanta Lichter**  
Hermetic encapsulation of the bionic eye  
(University of Melbourne)

10:50 **Ramiz Boulos**  
Molecular modelling of p-phospholated calix[5]arenes as drug carriers  
(UWA)

**Peng-Yuan Wang**  
Preparation of polydimethylsiloxane (PDMS) stiffness gradients for mesenchymal stem cell culture  
(National Taiwan University)

11:10 **Fainida Rahmat**  
Carbon nanotube oscillators for applications as nanothermometers  
(UOW)

**Lauren Clements**  
PEO-like plasma polymer gradients for the investigation of mesenchymal stem cell responses  
(Flinders University)

11:30 **Yue Chan**  
Benzene in MOFs as molecular gyroscopes and turnstile  
(UOW)

**Emily Anglin**  
Cell microarrays: 'Cell-sorting' bio-chips for determining genetic damage of human lymphocytes  
(Flinders University)

11:50 **Sivakumar Dhar Malingam**  
Surface strain analysis of home forming of metal-composites hybrid structures  
(ANU)

**Mehdi Mazar Atabaki**  
Sol-gel bioactive coating for improvement of biocompatible human body implant  
(University Technology Malaysia)

12:10 **Charles Moy**  
Application of nanoindentation and inverse method  
(University of Sydney)

**Venkata Kambala**  
Synthesis and application of nanoscale calcium oxide particles for remediation of sodic soils in Australia  
(UNISA)

12:30 **Fargol Hasani**  
Modeling of nanostructured dye sensitized solar cell  
(UOW)

**Dominic Alexander**  
Catalytic partial oxidation of methane to synthesis gas in perovskite hollow fibre membrane micro-reactor  
(University of Queensland)

12:50

Lunch

Session 7: Properties (Surface Analysis) – South 3, Building 47

Session 8: Electronic materials and Nanobiotech– Teleconference theatre

13:40	<b>Ruth Zoehrer</b> New applications in bone research: Integrated imaging surface analyses of human bone	(Flinders University)	<b>Jonathon Mitchell</b> Surface transport mechanism for hydrogenation and passivation	(ANU)
14:00	<b>Taryn Guinan</b> Surface analysis of human lens capsules by MALDI-TOF-Imaging-MS	(Flinders University)	<b>Meifang Lai</b> Reactive Ion Etching (RIE) of porous silicon patterned directly using photolithographic processes	(UWA)
14:20	<b>Ashley Slattery</b> Improved method for atomic force microscopy cantilever calibration	(Flinders University)	<b>Roman Dronov</b> Porous alumina-based interferometric reflectance transducers	(Flinders University)
14:40	<b>Maryam Naebe</b> Ageing effect of plasma treatment on the surface of wool	(Deakin University)	<b>Md. Saiful Islam</b> 3-D modelling of a boron nitride nanotube cantilever biosensor	(Deakin University)
15:00	<b>Anders Barlow</b> The effect of SF <sub>6</sub> plasma density variations on nanotube fluorination	(Flinders University)	<b>Kerrilee Allan</b> Investigation of ethylpyrrolidone methacrylate/methyl methacrylate copolymer as a dynamic coating for capillary electrophoretic separation of DNA	(Flinders university)
15:20	<b>Chris Ridings</b> Investigating the surface structure of foam films	(Flinders University)	<b>Shyamsundar Muthuramalingam</b> Surface Plasmon Resonance studies of membrane-protein interactions using a gold micro-array	(Flinders University)
15:40	<b>Robert Acres</b> Analysis of surfaces with metastable ion induced electron spectroscopy and neutral impact collision ion scattering spectroscopy	(Flinders University)	<b>Jung-Hyun Kang</b> Characterization of GaAs nanowires grown on Si substrates coated with thin buffer layers by metal-organic chemical vapor deposition	(ANU)
16:00	Afternoon tea break			
16:30	Short presentation 3: (Details at end of program) – SILC Building			
17:00	Poster viewing – SILC Building			
17:30	Short presentation 4: (Details at end of program) – SILC Building			
18:00	Poster viewing – SILC Building			
19:00-10:00 +	Conference Dinner and Pub-crawl			

# PROGRAM

Friday 23<sup>th</sup> July 2010

08:30 Plenary Presentation 4: **Joseph Shapter** - Surface modifications with carbon nanotubes – What might be possible?  
– *South 3, Building 47, IST*

09:15 Plenary Presentation 5: **George Collins** - Linking Materials Research to Manufacturing – *South 3 Building 47, IST*

10:00 Morning tea (30 mins)

## Session 9: Functional Materials– *South 3, Building 47*

## Session 10: Drug Delivery and Nanoparticles– *Teleconference theatre*

10:30	<b>Yanyan Liu</b> Microscratching of ultra high molecular weight polyethylene using silicon cubic corner tips (UNSW)	<b>Sharon Sagnella</b> Self-assembled nanostructured drug delivery systems (CSIRO – Molecular and Health Tech)
10:50	<b>Bingshan Li</b> Hemp ultrafine powders as a novel antimicrobial material (Deakin University)	<b>Ganesh Mahidhara</b> A novel nanoformulation for oral drug delivery of anti-cancer biomacromolecules (Deakin University)
11:10	<b>Roshan Vasani</b> The thermoresponsive behaviour of poly(N-isopropylacrylamide) grafted within porous silicon templates (Flinders University)	<b>Ben Edwards</b> pH controlled release of drugs using enterically coated nano-particles (UWA)
11:30	<b>Rhiannon Creasey</b> Supramolecular assembly of arabinogalactan-like proteins (Flinders University)	<b>Moom Sinn Aw</b> Nanofabrication: Self-assembling alumina nanotubes as substrates for “doped” micelles in drug delivery (Ian Wark Res. Inst.)
11:50	<b>Marzieh Parhizkar</b> Enhancement of photostability of photochromic fabrics from sol-gel hybrid silica coatings (Deakin University)	<b>Christopher Justin Maynard</b> Functional analysis of the M2 influenza virus protein ion-channel (Flinders University)
12:10	<b>Clement Roux</b> Fluoropolymer brushes grafted to carbon surfaces (University of Canterbury)	<b>Renee Goreham</b> A novel method for engineering density gradients of gold nanoparticles with controlled profile (UNISA)
12:30	<b>Mykanth Mada</b> Cross-linked PVA – SWCNT cast films – fabrication and mechano-electric evaluation (UNSW)	<b>Spomenka Simovic</b> Emulsion-nanoparticle hybrid capsules for improved oral and dermal delivery (Ian Wark Res. Inst.)

12:50

Lunch

13:40	<b>Ulf Garbe</b> The new neutron radiography/topography/imaging station at DINGO at OPAL (ANSTO)	<b>Rahi Ravji Varsani</b> Characterisation of carbon nanomaterials formed by the catalytic cracking of methane (UWA)
14:00	<b>Song Ni</b> Effects of severe plastic deformation on the structure and mechanical behaviour of a nanocrystalline Ni-Fe alloy (University of Sydney)	<b>Andrew Vogt</b> Retro-synthesis of graphene – A simple and upscalable approach (Flinders University)
14:20	<b>Kun Yan</b> Characterization of phase transformations of the nuclear material Zr-2.5Nb (ANSTO)	<b>Chengpeng Li</b> Graphene oxide and its derivatives synthesis (Deakin University)
14:40	<b>David Sprouster</b> Amorphous phase formation in cobalt nanoparticles (ANU)	<b>Mark Bissett</b> Electrochemical Impedance Spectroscopy of chemically modified single-walled carbon nanotube arrays (Flinders University)
15:00	<b>Saurabh Kabra</b> High temperature in situ neutron diffraction study of phase transformations in TiAl-Mo intermetallics (ANSTO)	<b>Adam Blanch</b> Optimising dispersions of single-walled carbon nanotubes in aqueous solution (Flinders University)
15:20	<b>Zhigang Wu</b> Martensitic and magnetic transformation behaviours in Fe-doped Ni <sub>50</sub> Mn <sub>38</sub> -xIn <sub>12</sub> Fe <sub>x</sub> ferromagnetic shape memory alloys (UWA)	<b>Cameron Shearer</b> Self-assembled single walled carbon nanotube density gradients (Flinders University)
15:40	<b>Klaus-Dieter Liss</b> Thermo mechanical processing in a synchrotron beam (ANSTO)	<b>Monessa Nambiar</b> Peptide modified SWNTS for metal ion detection (Flinders University)

Closing of Conference (16:00)

