



# The biennial Australian Colloid and Interface Symposium and the 10th Australia-Japan Colloid and Interface Science Symposium

Stamford Grand, Glenelg, Adelaide, South Australia

1-5 February 2009

## Program

PL - Plenary KN - Keynote OC - Oral Communication PP - Poster  
Presentation

## Program at a Glance

### Sunday 1 February 2009

10:00 - 16:00	<b>AUSTRALIA-JAPAN SYMPOSIUM EXCURSION</b>
15:00 - 17:00	<b>REGISTRATION (ACIS and A-J)</b>
17:00 - 19:00	<b>WELCOME MIXER (ACIS and A-J)</b>

### Monday 2 February 2009

<b>Time</b>			
8:30	<b>Welcome and opening remarks</b>		
8:40	<b>PL001 RACI Colloid Division Plenary Lecture: Prof Martien Cohen Stuart</b> <i>Networking Polymers and the Forces they Generate</i> <b>Chair: Peter Scales</b>		
9:30	<b>PL002 Alexander Lecture: Prof Franz Grieser</b> <i>How ultrasound and bubbles interact to give rise to "exotic" chemical reactions</i> <b>Sponsored by The University of Sydney Chair: Peter Scales</b>		
10:30	<b>TEA/COFFEE BREAK</b>		
	<b>Ballroom 3</b>	<b>Ballroom 4</b>	<b>Ballroom 5</b>
	<b>THEME 1: Minerals and Material Processing</b>	<b>THEME 2: Life Science Applications</b>	<b>AUSTRALIA-JAPAN SYMPOSIUM</b>
	<i>Session Chair: George Franks</i>	<i>Session Chair: Frank Caruso</i>	<i>Session Chair: Ian Gentle</i>
11:00	<b>KN001 Jennifer Lewis</b>	<b>KN002 Kristi Anseth</b>	<b>KN003 Kohei Uosaki</b>
11:40	OC001 Linnea Andersson	OC004 Benjamin Thierry	OC007 Sally McArthur
12:00	OC002 Diana Tran	OC005 Laurence Meagher	OC008 Atsushi Muramatsu
12:20	OC003 Kazimierz Malysa	OC006 Adam Feiler	OC009 Elena Ivanova
12:40	<b>LUNCH</b>		

	Ballroom 3	Ballroom 4	Ballroom 5
	<b>THEME 1: Minerals and Material Processing</b>	<b>THEME 2: Life Science Applications</b>	<b>AUSTRALIA-JAPAN SYMPOSIUM</b>
	<i>Session Chair: Gayle Morris</i>	<i>Session Chair: Laurence Meagher</i>	<i>Session Chair: Kazue Kurihara</i>
13:40	<b>KN 004 James Finch</b>	<b>KN005 Jay Groves</b>	<b>KN006 Justin Gooding</b>
14:20	OC010 Marlene Cran	OC013 Timothy Barnes	OC016 Yoshio Okahata
14:40	OC011 Audrey Beaussart	OC014 Angus Johnston	OC017 Lisbeth Grondahl
15:00	OC012 Agnieszka Mierczynska-Vasilev	OC015 Ronald Clarke	OC018 Sumio Ozeki
15:20	TEA/COFFEE BREAK		
	<i>Session Chair: Jonas Addai-Mensah</i>	<i>Session Chair: Angus Johnston</i>	<i>Session Chair: Yoshio Okahata</i>
15:50	OC019 Miao Chen	OC024 Christopher Bowman	OC029 Kazue Kurihara
16:10	OC020 Thanh Tam Chau	OC025 Bronwyn Battersby	OC030 Roger Horn
16:30	OC021 Chandra Angle	OC026 Ingo Koeper	OC031 Ko Higashitani
16:50	OC022 George Franks	OC027 Clive Prestidge	OC032 Tom Healy
17:10	OC023 Jason Du	OC028 Peter Kingshott	OC033 Jun Oshitani
17:30	Talks end		
18:00-20:00	<b>POSTER SESSION #1: Colley, Hindmarsh and Moseley (PP001-PP035)</b>		
1930-late	<b>A-J DINNER (by invitation)</b>		

### Tuesday 3 February 2009

Time	Ballroom 3	Ballroom 4	Ballroom 5
	<b>THEME 3: Spectroscopy and Scattering</b>	<b>THEME 4: Nanofabrication and Microfluidics</b>	<b>AUSTRALIA-JAPAN SYMPOSIUM (Cont)</b>
	<i>Session Chair: Mark Tobin</i>	<i>Session Chair: Paul Mulvaney</i>	<i>Session Chair: Russell Crawford</i>
8:30	<b>KN007 TBC</b>	<b>KN008 Michelle Simmons</b>	<b>KN009 Max Lu</b>
9:10	OC034 Sarah Harmer	OC037 Leslie Yeo	OC040 Naoki Toshima
9:30	OC035 Jim McQuillan	OC038 Chiara Neto	OC041 Peter Scales
9:50	OC036 Robert Corkery	OC039 Jiufu Lim	OC042 Lok Kumar Shrestha
10:10	TEA/COFFEE BREAK		
	<i>Session Chair: Jim McQuillan</i>	<i>Session Chair: Michelle Simmons</i>	<i>Session Chair: Sumio Ozeki</i>
10:40	OC043 David Beattie	OC048 John Ralston	OC053 Toyoki Kunitake
11:00	OC044 Dave Warren	OC049 Mihail Popescu	OC054 Patrick Hartley
11:20	OC045 John White	OC050 Shaun Hendy	OC055 Shigeru Deguchi
11:40	OC046 Kathryn McGrath	OC051 Rosen Sedev	OC056 Cathy McNamee
12:00	OC047 Liliana de Campo	OC052 Geoff Willmott	OC057 Nobuo Kimizuka

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12:20	LUNCH		
<b>Time</b>	<b>Ballroom 3</b>	<b>Ballroom 4</b>	<b>Ballroom 5</b>
	<b>THEME 3: Spectroscopy and Scattering</b>	<b>THEME 4: Nanofabrication and Microfluidics</b>	<b>AUSTRALIA-JAPAN SYMPOSIUM (Cont)</b>
	<i>Session Chair: David Beattie</i>	<i>Session Chair: John Ralston</i>	<i>Session Chair: Thomas Healy</i>
13:20	<b>KN010 Nitash Balsara</b>	<b>KN011 Patrick Tabelaing</b>	OC062 Kaoru Tsujii
13:40			OC063 Ivan Vakarelski
14:00	OC058 Elliott Gilbert	OC060 Pramith Priyananda	OC064 Hirofumi Kanoh
14:20	OC059 Connie Liu	OC061 Craig Priest	OC065 Greg Warr
14:40	TEA/COFFEE BREAK		
15:00	BEACH TIME		
18:00-20:00	POSTER SESSION #2: Colley, Hindmarsh and Moseley (PP036-PP065)		

#### Wednesday 4 February 2009

<b>Time</b>	<b>Ballroom 3</b>	<b>Ballroom 4 &amp; 5</b>
	<b>THEME 5: Soft Matter Self Assembly</b>	<b>Theme 6: Frontiers of Colloid &amp; Interface Science</b>
	<i>Session Chair: Patrick Hartley</i>	<i>Session Chair: Peter Scales</i>
8:50	<b>KN012 Marcus Textor</b>	<b>KN013 Lennart Bergström</b>
9:30	OC066 Peter Kingshott	OC069 Paul Mulvaney
9:50	OC067 Durga Acharya	OC070 Nirmesh Jain
10:10	OC068 Ben Boyd	OC071 Drew Evans
10:30	TEA/COFFEE BREAK	
	<i>Session Chair: Rob Atkin</i>	<i>Session Chair: Chiara Neto</i>
11:00	OC072 William Hamilton	OC077 James Beattie
11:20	OC073 Catherine Whitby	OC078 Vincent Craig
11:40	OC074 Qin Li	OC079 Lee San Puah
12:00	OC075 Patrick Fairclough	OC080 Yansen Lauw
12:20	OC076 Brigitte Stadler	OC081 Jairo Garnica-Rodriguez
12:40	LUNCH	
	<i>Session Chair: Grant Webber</i>	<i>Session Chair: Joe Shapter</i>
13:40	OC082 Stephen Hyde	OC086 Meifang Zhou
14:00	OC083 Jacob Kirkensgaard	<b>OC087</b> TBC
14:20	OC084 Tam Greaves	OC088 Madhavan Jagannathan
14:40	OC085 Rob Atkin	OC089 Adrian Trinchì
15:00	TEA/COFFEE BREAK	

Time	Ballroom 3	Ballroom 4 & 5
	<b>THEME 5: Soft Matter Self Assembly</b>	<b>Theme 6: Frontiers of Colloid &amp; Interface Science</b>
	<i>Session Chair: Erica Wanless</i>	<i>Session Chair: James Beattie</i>
15:30	<b>KN014 Rein Ulijn</b>	OC092 Michal Borkovec
15:50		<b>OC093</b> TBC
16:10	OC090 Danielle Kennedy	OC094 Mihail Popescu
16:30	OC091 Tony Aitchison	OC095 Alison Funston
17:00	RACI Colloid and Surface Science Annual General Meeting	
19:30	CONFERENCE DINNER AND POSTER PRIZE PRESENTATIONS	

**Thursday 5 February 2009**

Time	Ballroom 3	Ballroom 4 & 5
	<b>THEME 7: Surface Forces and Nanotribology</b>	<b>Theme 6: Frontiers of Colloid and Interface Science (continued)</b>
	<i>Session Chair: Ray Dagastine</i>	<i>Session Chair: Greg Warr</i>
9:00	<b>KN015 Clemens Bechinger</b>	<b>KN016 Hiroshi Yokoyama</b>
9:40	OC096 Marta Krasowska	OC098 Tim Wooster
10:00	OC097 Adam Feiler	OC099 Mani Paneru
10:20	TEA/COFFEE BREAK	
	<i>Session Chair: Vince Craig</i>	<i>Session Chair: James Friend</i>
10:50	<b>KN017 Masashi Mizukami</b>	OC103 Yagya Bhatt
11:10		OC104 Leslie Yeo
11:30	OC100 Shannon Notley	OC105 Guangming Liu
11:50	OC101 Jason Stokes	OC106 Mikel Duke
12:10	OC102 Renate Fetzer	OC107 Erica Wanless
12:30	LUNCH	
	<i>Session Chair: Marta Krasowska</i>	<i>Session Chair:</i>
13:30	OC108 Ray Dagastine	OC112 Alison Funston
13:50	OC109 Elmar Bonaccorso	OC113 Iliana Sedeva
14:10	OC110 Christine Henry	OC114 Ru-Jong Jeng
14:30	OC111 Luke Parkinson	OC115 Hemayet Uddin
14:50	TEA/COFFEE BREAK	
	<i>Session Chair: Shannon Notley</i>	<i>Session Chair: Leslie Yeo</i>
15:20	OC116 Rogerio Manica	OC118 Leonora Velleman
15:40	OC117 Ian Larson	OC119 Bruce Law
16:05	CLOSING REMARKS	
16:15	ACIS CONFERENCE CLOSES	

# ACIS 2009 Full Program

## Sunday 1 February 2009

- |                |  |
|----------------|--|
| 10.00am-4.00pm | Australia Japan Symposium Excursion              |
| 3.00-5.00pm    | Registration Open, <i>Stamford Grand Glenelg</i> |
| 7.00-9.00pm    | Welcome Reception, <i>The Beachouse</i>          |

8.30am

*Ballroom 3/4*

Welcome and opening remarks

*Ballroom 3/4*

Plenary Presentations

PL001 8.40

### RACI Colloid Division Plenary Lecture

#### Networking Polymers and the forces they generate

Martien A. Cohen Stuart<sup>1</sup>, J. van der Gucht<sup>1</sup>, J. Sprakel<sup>1</sup>, P. Skrzeczewska<sup>1</sup>, E. Spruijt<sup>1</sup>, M. Lemmers<sup>1</sup>

<sup>1</sup>Wageningen University, Netherlands

*Sponsored by the Royal Australian Chemical Institute, Colloid and Surface Science Division.*



Prof Martien Cohen Stuart graduated from Groningen State University with a degree in polymer chemistry and a minor in physical chemistry. In 1975, he joined Wageningen University, doing a PhD in colloid science under supervision of Gerard Fleer and Bert Bijsterbosch, investigating adsorption of flexible polymers at solid/liquid interfaces. He obtained his degree in 1980 and then was appointed assistant professor in the physical chemistr & coloid science group. Following a sabattical/post doctoral year in the group of Pierre Gilles de Gennes in Paris, where he worked on wetting and spreading experiments, he became associate professor in Wageningen and in 1996 he succeeded Hans Lyklema in the Chair of Physical Chemistry and Colloid Science at Wageningen University. In 2007 he was awarded the Ostwald Medal of the German Kolloid Gesellschaft in recognition of his seminal work on polymers in colloidal systems and self-assembly. His interests cover a wide spectrum, from statics and dynamics of macromolecules, interfaces, wetting, phase behaviour, self-assembly, networks and gels, emulsions and coalescence, and the physics of macromolecules in living cells. He is editor of the European Physical Journal E (Soft Matter), and member of the Royal Dutch Academy of Sciences (KNAW).

PL002 9.30

### A.E. Alexander Lecture

*Sponsored by The University of Sydney*

#### How ultrasound and bubbles interact to give rise to “exotic” chemical reactions

Franz Grieser<sup>1</sup>, <sup>1</sup>ARC Particulate Fluids Processing Centre, School of Chemistry, University of Melbourne, Australia



Franz Grieser is a Professor of Chemistry in the School of Chemistry at the University of Melbourne. He is a Deputy Director of the ARC Special Research Centre, Particulate Fluids Processing Centre and the Program Leader of its Liquid-Liquid Systems research activities. He is the Associate Dean (Research and Industry) in the Faculty of Science and is Chair of the Research and Industry Committee. Franz completed his undergraduate (BSc(Hons), 1973) and postgraduate studies (PhD, 1977) at the University of Melbourne. He undertook postdoctoral studies at the University of Notre Dame, Indiana, and the Hahn-Meitner Institute in Berlin. He was a QEII Fellow prior to taking up a lectureship at the University of Melbourne in 1984. He maintains an extensive collaborative network with major research groups locally and internationally and has published over 200 research articles. His major research interests cover a wide range of topics in surface and colloid chemistry. In recent years he has developed several research programs examining the use of ultrasound to initiate chemical reactions in aqueous systems.

*The A.E. Alexander Lecture was established in 1978 as a result of an appeal by the University of Sydney and the RACI Division of Colloid and Surface Chemistry to commemorate Professor Albert “Alex” Alexander FAA FRACI, who was Professor of Physical Chemistry at the University of Sydney from 1957-1970. The Alexander Lecturer is an eminent scientist who has contributed particularly to Colloid and Surface Science in Australia.*

10.30am Morning Tea

11.00am

**Ballroom 3** THEME 1: Minerals and Material Processing

**KN001** 11.00 **Novel Inks for Direct-Write Assembly of Functional Materials**

Jennifer Lewis<sup>1</sup>, <sup>1</sup>*University of Illinois, United States*

**Sponsored by AMSRI (Australian Mineral Science Research Institute)**

**OC001** 11.40 **The Quest for a Versatile Process Route for Macroporous Ceramics - Exploring Expandable Spheres**

Linnéa Andersson<sup>1</sup>, Mark A. Knackstedt<sup>2</sup>, Lennart Bergström<sup>1</sup>, <sup>1</sup>*Department of Physical, Inorganic and Structural Chemistry, Materials Chemistry Research Group, Stockholm University, Sweden*, <sup>2</sup>*Department of Applied Mathematics, Research School of Physical Sciences and Engineering, Australian National University, Australia*

**OC002** 12.00 **Particle-Stabilised Foams**

Diana Tran<sup>1</sup>, Catherine Whitby<sup>1</sup>, Daniel Fornasiero<sup>1</sup>, John Ralston<sup>1</sup>, <sup>1</sup>*University of South Australia, Ian Wark Research Institute, Australia*

**OC003** 12.20 **Influence of Surface Charge and Hydrophobicity on Stability of Thin Liquid Film during Bubble Collision with TiO<sub>2</sub> Surface**

Marta Krasowska<sup>1</sup>, Anna Niecikowska<sup>2</sup>, John Ralston<sup>1</sup>, Kazimierz Malysa<sup>2</sup>, <sup>1</sup>*Ian Wark Research Institute, University of South Australia, Australia*, <sup>2</sup>*Institute of Catalysis and Surface Chemistry Polish Academy of Sciences, Poland*

**Ballroom 4** THEME 2: Life Science Applications

**KN002** 11.00 **Dynamic Surfaces that Modulate Cell Interactions**

April Kloxin<sup>1</sup>, Julie Benton<sup>1</sup>, Kristi Anseth<sup>1,2</sup>, <sup>1</sup>*University of Colorado, United States*, <sup>2</sup>*Howard Hughes Medical Institute, United States*

**Sponsored by CRC for Polymers - Ian Dagley**

**OC004** 11.40 **Integration of Plasmonic Nanoparticles into Hybrid Multifunctional Colloidal Nanostructures**

Benjamin Thierry<sup>1</sup>, Jane Phui Mun Ng<sup>1</sup>, <sup>1</sup>*Ian Wark Research Institute, Australia*

**OC005** 12.00 **Surface Initiated Polymer Coatings for the Control of Cell-Surface Interactions**

Laurence Meagher<sup>1</sup>, Helmut Thissen<sup>1</sup>, Paul Pasic<sup>1</sup>, Richard A. Evans<sup>1</sup>, Suzie Pereira<sup>1</sup>, Graham Johnson<sup>2</sup>, Gail McFarland<sup>2</sup>, Kelly Tsang<sup>1</sup>, Thomas Gengenbach<sup>1</sup>, Keith McLean<sup>1</sup>, <sup>1</sup>*CSIRO Molecular and Health Technologies, Australia*, <sup>2</sup>*CSIRO Molecular and Health Technologies, Australia*

**OC006** 12.20 **Biolubrication of Mucin studied with Quartz Crystal Microbalance (QCM-D) and AFM Friction Force Microscopy**

Adam Feiler<sup>1</sup>, Anna Sahlholm<sup>2</sup>, Tomas Sandberg<sup>2</sup>, Karin Caldwell<sup>2</sup>, <sup>1</sup>*YKI, Institute for Surface Chemistry, Sweden*, <sup>2</sup>*Uppsala University, Sweden*

**Ballroom 5** Australia-Japan Symposium

**KN003** 11.00 **Interfacial Molecular Structure at Solid/Liquid Interfaces by SFG Spectroscopy**

Kohei Uosaki<sup>1</sup>, Hidenori Noguchi<sup>1</sup>, Satoshi Nihonyanagi<sup>1</sup>, Rie Yamamoto<sup>1</sup>, Hiroshi Minowa<sup>1</sup>, Jian Ping Gong<sup>1</sup>, Yoshihito Osada<sup>1</sup>, <sup>1</sup>*Hokkaido University, Japan*

**OC007** 11.40 **Surface Modification of Microfluidics for Protein Assays and Separation**  
Malinda Salim<sup>1</sup>, Gautam Mishra<sup>2</sup>, Simon Forster<sup>2</sup>, Greg Fowler<sup>2</sup>, Ana Pereira<sup>1</sup>, Phillip Wright<sup>1</sup>, Sally McArthur<sup>3</sup>, <sup>1</sup>*The University of Sheffield, Department of Chemical and Process Engineering, United Kingdom*, <sup>2</sup>*The University of Sheffield, Department of Engineering Materials, United Kingdom*, <sup>3</sup>*Swinburne University of Technology, Faculty of Engineering and Industrial Sciences, Australia*

**OC008** 12.00 **Monodispersed ITO Nanoparticles Precisely Controlled in Size and Shape**  
Atsushi Muramatsu<sup>1</sup>, Takafumi Sasaki<sup>1</sup>, Yosuke Endo<sup>1</sup>, Kiyoshi Kanie<sup>1</sup>, <sup>1</sup>*Tohoku University, Japan*

**OC009** 12.20 **Bacterial Interactions with Nano-Smooth Surfaces**  
Elena Ivanova<sup>1</sup>, Russell Crawford<sup>1</sup>, <sup>1</sup>*Swinburne University of Technology, Australia*

12.40pm            Lunch

1.40pm

**Ballroom 3**            **THEME 1: Minerals and Material Processing**

**KN004** 13.40 **Frothers and Flotation**  
James Finch<sup>1</sup>, <sup>1</sup>*McGill University, Canada*

**Sponsored by Victoria University**

**OC010** 14.20 **Effect of Dispersant Functional Groups on the Interaction with Mineral Oxide Particles**  
Marlene Cran<sup>1</sup>, Gayle Morris<sup>1</sup>, Leanne Brichter<sup>2</sup>, <sup>1</sup>*Institute for Sustainability and Innovation, Victoria University, Australia*, <sup>2</sup>*Ian Wark Research Institute, University of South Australia, Australia*

**OC011** 14.40 **Investigation of Dextrin Adsorbed on Hydrophobic Mineral Surfaces**  
Audrey Beaussart<sup>1</sup>, Agnieszka Mierczynska-Vasilev<sup>1</sup>, David Beattie<sup>1</sup>, <sup>1</sup>*Ian Wark Research Institute, UniSA, Australia*

**OC012** 15.00 **In Situ Atomic Force Microscopy of Carboxymethyl Cellulose Adsorption on Talc and Chalcopyrite: Correlation Between Adsorbed Layer Properties and Flotation Performance.**  
Agnieszka Mierczynska-Vasilev<sup>1</sup>, David Beattie<sup>1</sup>, <sup>1</sup>*Ian Wark Research Institute University of South Australia, Australia*

**Ballroom 4**            **THEME 2: Life Science Applications**

**KN005** 13.40 **Programming lateral interactions in quasi two-dimensional lipid bilayer membranes**  
Jay Groves<sup>1</sup>, <sup>1</sup>*HHMI, UC Berkeley, United States*

**Sponsored by The Innovation Group and Phillips Ormonde Fitzpatrick**

**OC013** 14.20 **Nanostructured Porous Silicon: A Novel Delivery System for Poorly Soluble Drugs**  
Tim Barnes<sup>1</sup>, Frank Peddie<sup>2</sup>, Clive Prestidge<sup>1</sup>, <sup>1</sup>*Ian Wark Research Institute, University of South Australia, Australia*, <sup>2</sup>*Sansom Institute, University of South Australia, Australia*

**OC014** 14.40 **Targeted Drug Delivery Using Bioinspired Nanoengineered Capsules**  
Angus Johnston<sup>1</sup>, Lillian Lee<sup>1</sup>, Christina Cortez<sup>1</sup>, Frank Caruso<sup>1</sup>, <sup>1</sup>*The University of Melbourne, Australia*

**OC015** 15.00 **Dimers are forever: The importance of the membrane in ion pump function**  
Ronald Clarke<sup>1</sup>, <sup>1</sup>*University of Sydney, Australia*

## **Ballroom 5** Australia-Japan Symposium

**KN006**13.40 **Nanoparticles and Photocatalysis: Enabling technologies for Plugging into the Sun**

J. Justin Gooding<sup>1</sup>, <sup>1</sup>*The University of Queensland, Australia*

**OC016**14.20 **Simultaneous Anomalous Reflection and Quartz-Crystal Microbalance Measurements of Biomolecule Bindings on a Gold Surface**

Yoshio Okahata<sup>1</sup>, Takayoshi Kawasaki<sup>1</sup>, <sup>1</sup>*Tokyo Institute of Technology, Japan*

**OC017**14.40 **Adsorption of Well-Defined Fluorine-Containing Polymers onto PTFE**

Lisbeth Grondahl<sup>1</sup>, Shuko Suzuki<sup>1,2</sup>, Michael Whittaker<sup>1</sup>, Michael Monteiro<sup>1</sup>, Edeline Wentrup-Byrne<sup>2</sup>, <sup>1</sup>*The University of Queensland, Australia*, <sup>2</sup>*Queensland University of Technology, Australia*

**OC018**15.00 **Magnetic Field Control of Structures and Functions of Colloidal Assemblies**

Sumio Ozeki<sup>1</sup>, Koichi Hashikawa<sup>1</sup>, Suguru Yamaguchi<sup>1</sup>, Kana Kubota<sup>1</sup>, Govindachetty Saravanan<sup>1</sup>, Atom Hamasaki<sup>1</sup>, <sup>1</sup>*Shinshu University, Japan*

3.20pm Afternoon Tea

3.50pm

## **Ballroom 3** THEME 1: Minerals and Material Processing

**OC019**15.50 **Sulphide Mineral Surfaces in the Presence and Absence of Microorganisms Studied by Imaging Electrochemistry**

Miao Chen<sup>1</sup>, Jing Zhao<sup>1</sup>, Jjinfeng Liu<sup>1</sup>, Bart Follink<sup>1</sup>, <sup>1</sup>*CSIRO Minerals, Australia*

**OC020**16.10 **Wetting Characterisation in Porous Media**

Thanh Tam Chau<sup>1</sup>, Leanne K. Smith<sup>1</sup>, Fuping P. Hao<sup>1</sup>, Peter T.L. Koh<sup>1</sup>, <sup>1</sup>*CSIRO Minerals, Australia*

**OC021**16.30 **Effects of Clay-Organics in Structure and Rheology of Mature Fine Oilsands Tailings**

Chandra W. Angle<sup>1</sup>, Hassan A. Hamza<sup>2</sup>, <sup>1</sup>*Natural Resources Canada, Canada*, <sup>2</sup>*Natural Resources Canada, Canada*

**OC022**16.50 **Smart Polymers for Improved Mineral Processing**

George Franks<sup>1</sup>, <sup>1</sup>*University of Melbourne, Australia*

**OC023**17.10 **Control of Aggregate Structure, Settling and Dewatering in Mineral Tailings Processing**

Jianhua (Jason) Du<sup>1</sup>, Roger Smart<sup>1</sup>, Rada Pushkarova<sup>2</sup>, <sup>1</sup>*Applied Centre for Structural and Synchrotron Studies, UniSA, Australia*, <sup>2</sup>*Ian Wark Research Institute, UniSA, Australia*

## **Ballroom 4** THEME 2: Life Science Applications

**OC024**15.50 **Polymerization-Based Signal Amplification for Detection of Molecular Recognition**

Christopher Bowman<sup>1</sup>, Ryan Hansen<sup>1</sup>, Leah Johnson<sup>1</sup>, Heather Avens<sup>1</sup>, Raveesh Shenoy<sup>1</sup>, <sup>1</sup>*University of Colorado, United States*

**OC025**16.10 **Particle-Based Biosensors for Cancer and Infectious Disease Detection**

Bronwyn Battersby<sup>1</sup>, Darby Kozak<sup>1</sup>, Annie Chen<sup>1</sup>, Matt Trau<sup>1</sup>, <sup>1</sup>*The University of Queensland, Australia*

**OC026**16.30 **Tethered Bilayer Lipid Membranes as Versatile Model Membrane Systems**

Ingo Köper<sup>1</sup>, <sup>1</sup>*Max Planck Institute for Polymer Research, Germany*

**OC027** 16.50 **Hybrid Microcapsules Engineered from Submicron Lipid Droplets and Silica Nanoparticles – Applications in Pharmaceutical Delivery**  
Spomenka Simovic<sup>1</sup>, Clive Prestidge<sup>1</sup>, <sup>1</sup>*Ian Wark Research Institute, Australia*

**OC028** 17.10 **Binary Colloidal Crystals as Templates for Simply Generation of Highly Ordered Chemical Patterns used for Controlled Location of Proteins**  
Gurvinder Singh<sup>1</sup>, Saju Pillai<sup>1</sup>, Vijay Gothri<sup>1</sup>, Morten Foss<sup>1</sup>, Peter Kingshott<sup>1</sup>, <sup>1</sup>*Aarhus University, Denmark*

## **Ballroom 5**      **Australia-Japan Symposium**

**OC029** 15.50 **New Surface Forces Apparatus Using Two-beam Interferometry**  
Kazue Kurihara<sup>1</sup>, Hiroshi Kawai<sup>1</sup>, Hiroshi Sakuma<sup>1</sup>, Masashi Mizukami<sup>1</sup>, Takashi Abe<sup>1</sup>, Yasuhiro Fukao<sup>1</sup>, Haruo Tajima<sup>1</sup>, <sup>1</sup>*IMRAM, Tohoku University, Japan*

**OC030** 16.10 **Factors Affecting the Stability of Surfactant-Free Liquid Films**  
Vassili Yaminsky<sup>1</sup>, Satomi Ohnishi<sup>1</sup>, Roger Horn<sup>1</sup>, <sup>1</sup>*Ian Wark Research Institute, University of South Australia, Australia*

**OC031** 16.30 **Cations on Silica Surface Act as “Abrasive Molecules”?**  
Ivan Vakarelski<sup>1</sup>, Naofumi Teramoto<sup>1</sup>, Cathy McNamee<sup>1</sup>, Ko Higashitani<sup>1</sup>, <sup>1</sup>*Kyoto University, Japan*

**OC032** 16.50 **The Electrokinetic Properties of Colloidal Magnetic Iron Oxides**  
Thomas Healy<sup>1</sup>, Ian Metcalfe<sup>1</sup>, Andrew Homola<sup>1</sup>, <sup>1</sup>*Particulate Fluids Processing Centre, Australia*

**OC033** 17.10 **Surfactant-assisted Formation of Whisker and Rod-shaped Nano-particles of Hydroxyapatite (HAp)**  
Jun Oshitani<sup>1</sup>, Nobuhide Kataoka<sup>1</sup>, Mikio Yoshida<sup>1</sup>, Kuniaki Gotoh<sup>1</sup>, <sup>1</sup>*Okayama University, Japan*

## **6.00-8.00pm Poster Session**

## Tuesday 3 February 2009

8.30am

### Ballroom 3

#### THEME 3: Spectroscopy and Scattering

KN007 8.30

**OC034 9.10 The Effect of Crystal Habit on the Surface Speciation and Reactivity of Pyrite Fracture Surfaces**

William Skinner<sup>1</sup>, Wayne Nesbitt<sup>2</sup>, Sarah Harmer<sup>1</sup>, <sup>1</sup>Ian Wark Research Institute, University of South Australia, Australia, <sup>2</sup>University of Western Ontario, Canada

**OC035 9.30 Adsorption/desorption kinetics from ATR-IR spectra of oxalate on anatase TiO<sub>2</sub> particle films – an alternative route to adsorption equilibrium constants?**

Jim McQuillan<sup>1</sup>, Aidan Young<sup>1</sup>, <sup>1</sup>University of Otago, New Zealand

**OC036 9.50 On the Structure of Foams: Structure factor of foams and synchrotron scattering from nanofoams**

Robert Corkery<sup>1</sup>, Keiichi Miyasaka<sup>2</sup>, Andrew Kraynik<sup>3</sup>, <sup>1</sup>YKI, Institute for Surface Chemistry, Sweden, <sup>2</sup>Ahrrenius Laboratory, Stockholm University, Sweden, <sup>3</sup>Sandia National Laboratories, United States

### Ballroom 4

#### THEME 4: Nanofabrication and Microfluidics

**KN008 8.30 Scanning probes: from imaging to fabrication**

Michelle Simmons<sup>1</sup>, <sup>1</sup>University of New South Wales, Australia

*Sponsored by The Ian Wark Research Institute*

**OC037 9.10 Vibration-Induced Microfluidic Colloidal Island Self-Assembly and Erasure**

Leslie Yeo<sup>1</sup>, Haiyan Li<sup>1</sup>, James Friend<sup>1</sup>, <sup>1</sup>Monash University, Australia

**OC038 9.30 Surface Patterning and Structuring through Self-Assembly of Nanowires**

Kyle Joseph<sup>1</sup>, Chiara Neto<sup>1</sup>, <sup>1</sup>University of Sydney, Australia

**OC039 9.50 Torque Generation via Boundary Shaping in an Electrodynamical Brownian rotor**

Jiufu Lim<sup>1</sup>, John Sader<sup>1</sup>, Paul Mulvaney<sup>1</sup>, <sup>1</sup>University of Melbourne, Australia

### Ballroom 5

#### Australia-Japan Symposium (continued)

**KN009 8.30 Making silicon water friendly: an approach to producing stable oxide free silicon for biophotonic and bioelectrochemical applications**

Max Lu<sup>1</sup>, Kris Kilian<sup>1</sup>, Till Boecking<sup>1</sup>, Simone Ciampi<sup>1</sup>, Guillaume Le Saux<sup>1</sup>, Jarred Shein<sup>1</sup>, Leo Lai<sup>1</sup>, Michael James<sup>2</sup>, Jason Harper<sup>1</sup>, <sup>1</sup>The School of Chemistry, The University of New South Wales, Australia, <sup>2</sup>The Bragg Institute, Australian Nuclear Science and Technology Organisation, Australia

*Sponsored by Swinburne University*

**OC040 9.10 Nafion®-Protected Pt Monometallic and Au-Pt Bimetallic Nanoparticles for Fuel Cells**

Naoki Toshima<sup>1</sup>, Hideo Naohara<sup>2</sup>, Takahiro Yoshimoto<sup>1</sup>, <sup>1</sup>Tokyo University of Science, Yamaguchi, Japan, <sup>2</sup>Toyota Motor Corporation, Japan

**OC041 9.30 The Yielding of Concentrated Coagulated Particulate Suspensions**

Jonathan Foong<sup>1</sup>, Peter Scales<sup>1</sup>, <sup>1</sup>The University of Melbourne, Australia, <sup>2</sup>The University of Melbourne, Australia

**OC042** 9.50 **Structure of Nonionic Surfactant Micelles in Organic Solvents: A SAXS Study**  
Lok Kumar Shrestha<sup>1</sup>, Takaaki Sato<sup>2</sup>, Otto Glatter<sup>3</sup>, Kenji Aramaki<sup>1</sup>, <sup>1</sup>*Yokohama National University, Japan*, <sup>2</sup>*Shinshu University, Japan*, <sup>3</sup>*Universität Graz, Austria*

10.10am Morning Tea

10.40am

**Ballroom 3** THEME 3: Spectroscopy and Scattering

**OC043** 10.40 **In Situ ATR-FTIR Studies of SO<sub>4</sub> Adsorption on Goethite in the Presence of Copper Ions**

David Beattie<sup>1</sup>, Julie Chapelet<sup>1</sup>, Markus Grafe<sup>2</sup>, Bill Skinner<sup>1</sup>, Euan Smith<sup>3</sup>, <sup>1</sup>*Ian Wark Research Institute, University of South Australia, Australia*, <sup>2</sup>*Faculty of Agriculture, Food & Natural Resources, University of Sydney, Australia*, <sup>3</sup>*Centre for Environmental Risk Assessment and Remediation, University of South Australia, Australia*

**OC044** 11.00 **A combined in-situ ATR-IR/surface photovoltage spectroscopy study of TiO<sub>2</sub> thin films in an aqueous environment.**

Dave Warren<sup>1</sup>, Jim McQuillan<sup>1</sup>, Yoram Shapira<sup>2</sup>, <sup>1</sup>*University of Otago, New Zealand*, <sup>2</sup>*Tel Aviv University, Israel*

**OC045** 11.20 **The Structure of Isolated Monomolecular Films of Proteins at the Air-water interface** **John W. White and Jack M Lin**

John White<sup>1</sup>, Jinminh Lin<sup>1</sup>, <sup>1</sup>*Australian national University, Australia*

**OC046** 11.40 **Probing monolayer/subphase interactions and real time crystallisation using synchrotron radiation**

Conrad Lendrum<sup>1,2</sup>, Bridget Ingham<sup>2</sup>, Michael Toney<sup>3</sup>, Kathryn McGrath<sup>1</sup>, <sup>1</sup>*MacDiarmid Institute for Advanced Materials and Nanotechnology, School of Chemical and Physical Sciences, Victoria University of Wellington, New Zealand*, <sup>2</sup>*Industrial Research Limited, New Zealand*, <sup>3</sup>*Stanford Synchrotron Radiation Laboratory, SLAC, United States*

**OC047** 12.00 **Self-assembly of Star-Shaped Polyphiles Investigated by SAXS and SANS**

Liliana de Campo<sup>1</sup>, Minoo Moghaddam<sup>2</sup>, Christophe Oguey<sup>3</sup>, Jacob Kirkensgaard<sup>4</sup>, Kell Mortensen<sup>4</sup>, Trond Varslot<sup>1</sup>, Stephen Hyde<sup>1</sup>, <sup>1</sup>*ANU, Australia*, <sup>2</sup>*CSIRO, Australia*, <sup>3</sup>*Universite Cergy-Pontoise, France*, <sup>4</sup>*Copenhagen University, Denmark*

**Ballroom 4** THEME 4: Nanofabrication and Microfluidics

**OC048** 10.40 **Interfacial Structure and the Dynamic Wetting of Solid Surfaces with Ionic Liquids**

John Ralston<sup>1</sup>, Mani Paneru<sup>1</sup>, Vera Lockett<sup>1</sup>, Rossen Sedev<sup>1</sup>, Craig Priest<sup>1</sup>, Markus Mezger<sup>2</sup>, Harald Reichert<sup>3</sup>, <sup>1</sup>*Ian Wark Research Institute, Australia*, <sup>2</sup>*Lawrence Berkeley National Laboratory, United States*, <sup>3</sup>*Max Planck Institute for Metallforschung, Germany*

**OC049** 11.00 **Capillary Driven Flows: Effects Due to Velocity Dependent Contact Angles and Chemically Patterned Walls**

Mihail Popescu<sup>1</sup>, John Ralston<sup>1</sup>, Rossen Sedev<sup>1</sup>, Monica Marinescu<sup>1</sup>, <sup>1</sup>*Ian Wark Research Institute, Australia*

**OC050** 11.20 **Capillary Absorption of Metal Nanodroplets by Carbon Nanotubes**

Shaun Hendy<sup>1,2</sup>, Dmitri Schebarchov<sup>2</sup>, <sup>1</sup>*Industrial Research Ltd, New Zealand*, <sup>2</sup>*MacDiarmid Institute for Advanced Materials and Nanotechnology, Victoria University of Wellington, New Zealand*

**OC051** 11.40 **Capillary Models for Porous Media and Packs of Particles**

Rossen Sedev<sup>1</sup>, Artem Borysenko<sup>1</sup>, Xun Bian<sup>1</sup>, Jan Metje<sup>1</sup>, John Ralston<sup>1</sup>, <sup>1</sup>*Ian Wark Research Institute, University of South Australia, Australia*

**OC052** 12.00 **Anisotropic Slip at Janus Particle Surfaces**

Geoff Willmott<sup>1</sup>, <sup>1</sup>*Industrial Research Limited, New Zealand*

## **Ballroom 5** Australia-Japan Symposium (continued)

**OC053** 10.40 **How to design a novel proton-conducting nanomembrane**  
Toyoki Kunitake<sup>1</sup>, Yoshitaka Aoki<sup>2</sup>, <sup>1</sup>RIKEN, Japan, <sup>2</sup>Hokkaido University, Japan

**OC054** 11.00 **MRI Contrast Agents based on Dispersed Cubic Phase Particles**  
Patrick Hartley<sup>1</sup>, <sup>1</sup>CSIRO Molecular & Health Technologies, Australia

**OC055** 11.20 **Pressure-dependent structural change of 2D colloid crystal in supercritical ethanol**  
Shigeru Deguchi<sup>1</sup>, Sada-atsu Mukai<sup>1,2</sup>, Takehito Koyama<sup>1</sup>, Sayuki Ohta<sup>1,3</sup>, Makio Iwahashi<sup>3</sup>, Kaoru Tsujii<sup>4</sup>, Koki Horikoshi<sup>1</sup>, <sup>1</sup>Japan Agency for Marine-Earth Science and Technology, Japan, <sup>2</sup>Kyushu University, Japan, <sup>3</sup>Kitasato University, Japan, <sup>4</sup>Hokkaido University, Japan

**OC056** 11.40 **The interaction between the hydrophilic side of phosphatidylcholine monolayers at an air-water interface and a silica probe**  
Cathy McNamee<sup>1</sup>, Michael Kapp<sup>2</sup>, Karlheinz Graf<sup>2</sup>, <sup>1</sup>Shinshu University, Japan, <sup>2</sup>Max Planck Institute for Polymer Research, Germany

**OC057** 12.00 **Supramolecular nanoparticles self-assembled from nucleotides and lanthanide ions in water and their adaptive encapsulation characteristics.**  
Ryuhei Nishiyabu<sup>1</sup>, Nobuo Kimizuka<sup>1</sup>, <sup>1</sup>Kyushu University, Japan

12.20pm Lunch

1.20pm

## **Ballroom 3** THEME 3: Spectroscopy and Scattering

**KN010** 13.20 **Fuel cell membranes that become wetter as the surrounding air gets hotter**  
Moon-Jeong Park<sup>1</sup>, Nitash Balsara<sup>1</sup>, <sup>1</sup>University of California, United States, <sup>2</sup>Lawrence Berkeley National Laboratory, United States

*Sponsored by Australian Nuclear Science and Technology Organisation*

**OC058** 14.00 **Quokka is Hopping Mad – Latest Results from the Small-Angle Neutron Scattering Instrument at ANSTO**  
Elliot Gilbert<sup>1</sup>, William Hamilton<sup>1</sup>, <sup>1</sup>ANSTO, Australia

**OC059** 14.20 **Structure of Magnetically Aligned Ferrofluid Emulsions from Small Angle Neutron Scattering**  
Connie Liu<sup>1</sup>, Gregory Warr<sup>1</sup>, Nirmesh Jain<sup>1</sup>, William Hamilton<sup>2</sup>, Brian Hawkett<sup>1</sup>, <sup>1</sup>Key Centre for Polymers and Colloids, School of Chemistry, Australia, <sup>2</sup>Bragg Institute, Australian Nuclear Science and Technology Organisation, Australia

## **Ballroom 4** THEME 4: Nanofabrication and Microfluidics

**KN011** 13.20 **Slip, droplets, complex fluids and other small things investigated with microfluidic technology**  
Patrick Tabeling<sup>1</sup>, <sup>1</sup>ESPCI, France

*Sponsored by The Wark Research Institute*

**OC060** 14.00 **Nitrogen Bubble Nucleation and Transport at Oil-Water Interfaces**  
Pramith Priyananda<sup>1</sup>, Gregory Warr<sup>1</sup>, Brian Hawkett<sup>1</sup>, <sup>1</sup>Key Centre for Polymers and Colloids, School of Chemistry F11, Australia

- OC061** 14.20 **Microfluidic Solvent Extraction for Mineral Processing**  
Jingfang Zhou<sup>1</sup>, Craig Priest<sup>1</sup>, John Ralston<sup>1</sup>, Rossen Sedev<sup>1</sup>, Kazuma Mawatari<sup>2</sup>,  
Takehiko Kitamori<sup>2,3</sup>, <sup>1</sup>*University of South Australia, Australia*, <sup>2</sup>*Kanagawa Academy of  
Science and Technology, Japan*, <sup>3</sup>*The University of Tokyo, Japan*

**Ballroom 5**      **Australia-Japan Symposium (continued)**

- OC062** 13.20 **Spontaneous Formation of Super Water-Repellent Fractal Structures on Wax Surfaces**  
Kaoru Tsujii<sup>1</sup>, <sup>1</sup>*Nanotechnology Research Center, Research Institute for Electronic  
Science, Hokkaido University (Retired), Japan*

- OC063** 13.40 **Microwires Network Assembly by Capillary Bridging Lithography**  
Ivan U. Vakarelski<sup>1,2</sup>, Takashi Nonoguchi<sup>1</sup>, Derek Y.C. Chan<sup>3</sup>, Hiroyuki Shinto<sup>1</sup>, Ko  
Higashitani<sup>1</sup>, <sup>1</sup>*Department of Chemical Engineering, Kyoto University, Japan*, <sup>2</sup>*Institute  
of Chemical and Engineering Sciences, Singapore*, <sup>3</sup>*Particulate Fluids Processing  
Centre, University of Melbourne, Austria*

- OC064** 14.00 **Cooperative Clathrate Formations of Metal Organic Frameworks by Expansive Modulation**  
Hirofumi Kanoh<sup>1</sup>, <sup>1</sup>*Chiba University, Japan*

- OC065** 14.20 **Polymerised Vesicles versus Lamellar Fragments from Amphiphilic Diblock Oligomers**  
Annabelle Blom<sup>1</sup>, Jennifer O'Donnell<sup>1</sup>, Gregory Warr<sup>1</sup>, Brian Hawkett<sup>1</sup>, <sup>1</sup>*Key Centre for  
Polymers and Colloids, School of Chemistry F11, Australia*

2.40pm              Afternoon Tea

6.00-8.00pm      Poster Session

**Wednesday 4 February 2009**

8.50am

**Ballroom 3**      **THEME 5: Soft Matter Self Assembly**

- KN012** 8.50 **Self-assembly of particles and functional polymers and their application in biointerface science**  
Marcus Textor<sup>1</sup>, <sup>1</sup>*ETH Zurich, Department of Materials, Switzerland*

**Sponsored by CSIRO**

- OC066** 9.30 **Highly Ordered Mixed Protein Patterns from Assembly of Binary Colloidal Dispersions Coated with Different Proteins**  
Gurvinder Singh<sup>1</sup>, Saju Pillai<sup>1</sup>, Ayyoob Arpanaei<sup>1</sup>, Peter Kingshott<sup>1</sup>, <sup>1</sup>*Aarhus University,  
Denmark*

- OC067** 9.50 **Cubic Phase Nanoparticles: Preparation and Structural Investigations.**  
Durga Acharya<sup>1</sup>, Dori Pegalajar Jurado<sup>1</sup>, Ben Muir<sup>1</sup>, Anastasios Polyzos<sup>1</sup>, Patrick  
Hartley<sup>1</sup>, <sup>1</sup>*CSIRO Molecular and Health Technologies, Australia*

**OC068** 10.10 **Control of Drug Release In Vitro and In Vivo using Self Assembled Liquid Crystalline Mesophase Materials**  
Wye-Khay Fong<sup>1</sup>, Kathy Lee<sup>1</sup>, Tracey Hanley<sup>2</sup>, Ben Boyd<sup>1</sup>, <sup>1</sup>Monash Institute of Pharmaceutical Sciences, Australia, <sup>2</sup>Bragg Institute, ANSTO, Australia

**Ballroom 4/5**      **THEME 6: Frontiers of Colloid and Interface Science**

**KN013** 8.50 **Biomimetic Synthesis and Nanoparticle Assembly: Towards Versatile Routes for Nanostructured Films**  
Lennart Bergström<sup>1</sup>, <sup>1</sup>Stockholm University, Sweden

**Sponsored By Rheological Consulting Services (RCS)**

**OC069** 9.30 **Surface Plasmon Spectroscopy of Single Gold Nanocrystals**  
Paul Mulvaney<sup>1</sup>, <sup>1</sup>University of Melbourne, Australia

**OC070** 9.50 **Superparamagnetic Nanoparticles in the Hyperthermia Treatment of Cancer and Other Medical Applications**  
Nirmesh Jain<sup>1</sup>, Brian Hawke<sup>1</sup>, Yanjun Wang<sup>1</sup>, Binh Pham<sup>1</sup>, Michael Luke<sup>1</sup>, Gregory Warr<sup>1</sup>, Stephen Jones<sup>2</sup>, <sup>1</sup>The Key Centre for Polymers and Colloids, School of Chemistry, The University of Sydney, Australia, <sup>2</sup>Sirtex Medical Limited, Unit F6 Parkview, 16 Mars Road, Australia

**OC071** 10.10 **Non-aqueous Liquid Toners: Observation of Particle Charge via Electrophoretic Movement**  
Drew Evans<sup>1</sup>, <sup>1</sup>Research Laboratories of Australia, Australia

10.30am      Morning Tea

11.00am

**Ballroom 3**      **THEME 5: Soft Matter Self Assembly**

**OC072** 11.00 **Small Angle Scattering Study of Self Assembly in Mixed Lipid Systems**  
Divya Singh<sup>1</sup>, Lionel Porcar<sup>3,2</sup>, Gina Polimeni<sup>2</sup>, Paul Butler<sup>2</sup>, Ursula Perez-Salas<sup>4,2</sup>, Gary Lynn<sup>5</sup>, William Hamilton<sup>6,5</sup>, <sup>1</sup>The Johns Hopkins University, United States, <sup>2</sup>NIST Center for Neutron Research, United States, <sup>3</sup>Institute Laue Langevin, France, <sup>4</sup>Argonne National Laboratory, United States, <sup>5</sup>Oak Ridge National Laboratory, United States, <sup>6</sup>Bragg Institute, ANSTO, Australia

**OC073** 11.20 **Structure of Emulsions Stabilised by Mixtures of Particles of Different Wettability**  
Catherine Whitby<sup>1</sup>, Daniel Fornasiero<sup>1</sup>, John Ralston<sup>1</sup>, <sup>1</sup>Ian Wark Research Institute, University of South Australia, Australia

**OC074** 11.40 **Hierarchical Macroporous Structures Formed by a Facile Colloidal Templating Strategy**  
Qin Li<sup>1,2</sup>, Likui Wang<sup>3</sup>, X.S. Zhao<sup>3</sup>, <sup>1</sup>Max Planck Institute for Polymer Research, Germany, <sup>2</sup>Curtin University of Technology, Australia, <sup>3</sup>National University of Singapore, Singapore

**OC075** 12.00 **The Effects of Polydispersity on the Self Assembly of Block Copolymers.**  
Patrick Fairclough<sup>1</sup>, Christine Fernyhough<sup>1</sup>, Chris Howell<sup>1</sup>, Mark Matsen<sup>2</sup>, Tom Beardsley<sup>2</sup>, Sébastien Perrier<sup>3</sup>, Vincent Admiral<sup>3</sup>, Jim Nobbs<sup>4</sup>, <sup>1</sup>University of Sheffield, United Kingdom, <sup>2</sup>University of Reading, United Kingdom, <sup>3</sup>University of Sydney, Australia, <sup>4</sup>University of Leeds, United Kingdom

**OC076** 12.20 **Capsosomes: Liposomes as Sub-Compartments in Polymer Capsules**  
Brigitte Stadler<sup>1</sup>, Rona Chandrawati<sup>1</sup>, Frank Caruso<sup>1</sup>, <sup>1</sup>*University of Melbourne, Australia*

**Ballroom 4/5**      **THEME 6: Frontiers of Colloid and Interface Science**

**OC077** 11.00 **Water at Hydrophobic Interfaces Explained by a New Flucuation Force**  
James Beattie<sup>1</sup>, Angus Gray-Weale<sup>1</sup>, <sup>1</sup>*University of Sydney, Australia*

**OC078** 11.20 **Bubbles and Salt and Ion-specificity**  
Vincent Craig<sup>1</sup>, Christine Henry<sup>1</sup>, <sup>1</sup>*Australian National University, Australia*

**OC079** 11.40 **The Influence of Surface Charge on Static and Dynamic Wetting**  
LeeSan Pua<sup>1</sup>, Rossen Sedev<sup>1</sup>, Daniel Fornasiero<sup>1</sup>, John Ralston<sup>1</sup>, <sup>1</sup>*Ian Wark Research Institute, Australia*

**OC080** 12.00 **Interfacial layering of ionic liquids at charged interfaces from a self-consistent mean-field perspective.**  
Yansen Lauw<sup>1,2</sup>, Bart Follink<sup>1</sup>, Mike Horne<sup>1</sup>, Theo Rodopoulos<sup>1</sup>, Frans Leermakers<sup>3</sup>, <sup>1</sup>*CSIRO Minerals, Australia*, <sup>2</sup>*ANSTO, Australia*, <sup>3</sup>*Wageningen University, Netherlands*

**OC081** 12.20 **Superhydrophobic Surfaces Based on Metal and Alloys**  
Jairo Garnica Rodriguez<sup>1</sup>, Rossen Sedev<sup>1</sup>, Nikolay Dimitrov<sup>2</sup>, John Ralston<sup>1</sup>, <sup>1</sup>*Ian Wark Research Institute – UniSA, Australia*, <sup>2</sup>*Binghamton University – SUNY, United States*

**12.40pm**              **Lunch**

**1.40pm**

**Ballroom 3**              **THEME 5: Soft Matter Self Assembly**

**OC082** 13.40 **New polyfunctional molecules: liquid crystallinity in star polyphiles**  
Stephen Hyde<sup>1</sup>, Liliana De Campo<sup>1</sup>, Christophe Oguey<sup>2</sup>, <sup>1</sup>*Australian National University, Australia*, <sup>2</sup>*University of Cergy-Pontoise, France*

**OC083** 14.00 **Coarse-grained simulations of polyphilic molecules**  
Jacob Kirkensgaard<sup>1</sup>, Stephen Hyde<sup>2</sup>, <sup>1</sup>*Copenhagen University, Denmark*, <sup>2</sup>*Australian National University, Australia*

**OC084** 14.20 **Characterisation of the CMC of Amphiphiles in Protic Ionic Liquids**  
Tamar Greaves<sup>1</sup>, Asoka Weerawardena<sup>1</sup>, Irena Krodkiewska<sup>1</sup>, Calum Drummond<sup>1,2</sup>, <sup>1</sup>*CSIRO Molecular and Health Technologies, Australia*, <sup>2</sup>*CSIRO Materials Science and Engineering, Australia*

**OC085** 14.40 **AFM and STM Studies on the surface interaction of [BMP]TFSA and [EMIm]TFSA ionic liquids with Au(111)**  
Rob Atkin<sup>1</sup>, Robert Hayes<sup>1</sup>, Sherif Zein El Abedin<sup>2</sup>, Frank Endres<sup>2</sup>, <sup>1</sup>*University of Newcastle, Australia*, <sup>2</sup>*Clausthal University of Technology, Germany*

**Ballroom 4/5**      **THEME 6: Frontiers of Colloid and Interface Science**

**OC086** 13.40 **Sonochemical Synthesis of Lysozyme Microspheres**  
Meifang Zhou<sup>1</sup>, Mathilde Evrard<sup>2</sup>, Thomas Seak Hou Leong<sup>1</sup>, Francesca Cavalieri<sup>3</sup>, Sandra Kentish<sup>1</sup>, Muthupandian Ashokkumar<sup>1</sup>, Franz Grieser<sup>1</sup>, <sup>1</sup>*Particulate Fluids Processing Centre, School of Chemistry, The University of Melbourne, Australia*, <sup>2</sup>*Département enie des procédés et informatique, Ecole Nationale des Ingénieurs en Arts Chimiques et Technologiques, France*, <sup>3</sup>*Dipartimento di Scienze e Tecnologia Chimiche, Università di Roma Tor Vergata, Italy*

**OC087** 14.00

**OC088** 14.20 **Sonophotocatalytic degradation of Orange G using Titanium dioxide**  
Madhavan Jagannathan<sup>1</sup>, Franz Grieser<sup>1</sup>, Ashokkumar Muthupandian<sup>1</sup>, <sup>1</sup>*Particulate Fluids Processing Centre, School of Chemistry, University of Melbourne, Australia*

**OC089** 14.40 **Self Assembled Monolayers of Functionalised Amphiphilic PAMAM Dendrimers for pH and Metal-Ion Sensing**  
Adrian Trinchi<sup>1</sup>, Tim Muster<sup>1</sup>, <sup>1</sup>*CSIRO Materials Science and Engineering, Australia*

3.00pm                      **Afternoon Tea**

3.30pm

**Ballroom 3**                      **THEME 5: Soft Matter Self Assembly**

**KN014** 15.30 **Enzymatically Ordering the Nanoworld**  
Rein Ulijn<sup>1</sup>, <sup>1</sup>*University of Strathclyde, United Kingdom*

**Sponsored by CSIRO**

**OC090** 16.10 **Large Ion Aggregates in Protic Ionic Liquids observed by ESI-MS**  
Danielle Kennedy<sup>1</sup>, Calum Drummond<sup>2</sup>, <sup>1</sup>*CSIRO Molecular and Health Technologies, Australia*, <sup>2</sup>*CSIRO Materials Science and Engineering, Australia*

**OC091** 16.30 **Using Self-Assembled Copolymer Thin Films to Control the Orientation of Carbon Nanotubes**  
Tony Aitchison<sup>1</sup>, Milena Ginic Markovic<sup>1</sup>, Stephen Clarke<sup>1</sup>, <sup>1</sup>*Flinders University, Australia*

**Ballroom 4/5**                      **THEME 6: Frontiers of Colloid and Interface Science**

**OC092** 15.30 **Colloidal Aggregation and Interaction Forces Induced by Adsorbed Dendrimers**  
Ionel Popa<sup>1</sup>, Ramon Pericet-Camara<sup>2</sup>, Georg Papastavrou<sup>1</sup>, Ger Koper<sup>3</sup>, Michal Borkovec<sup>1</sup>, <sup>1</sup>*University of Geneva, Switzerland*, <sup>2</sup>*University of Granada, Spain*, <sup>3</sup>*University of Delft, Netherlands*

**OC093** 15.50

**OC094** 16.10 **Phoretic Motion via Self-Generated Solute Gradients: (i) Confinement Effects and (ii) Shape Dependence for Axisymmetrical Objects**  
Mihail Popescu<sup>1</sup>, Siegfried Dietrich<sup>2</sup>, Gleb Oshanin<sup>3</sup>, John Ralston<sup>1</sup>, <sup>1</sup>Ian Wark  
*Research Institute, Australia*, <sup>2</sup>*Max-Planck-Institut for Metal Research, Germany*,  
<sup>3</sup>*LPTMC, Universite Paris 6, France*

**OC095** 16.30 **Electronic Tuning of the Surface Plasmon Resonances of Single Gold Nanorods**  
Carolina Novo<sup>1</sup>, Alison Funston<sup>1</sup>, <sup>1</sup>*School of Chemistry, The University of Melbourne, Australia*

5.00pm RACI Colloid & Surface Science Annual General Meeting,  
*Ballroom 5*

7.30pm Conference Dinner & Poster Prize Presentations, *Ballroom*

## Thursday 5 February 2009

9.00am

*Ballroom 3* **THEME 7: Surface Forces and Nanotribology**

**KN015** 9.00 **Critical Casimir Forces in Colloidal Systems**  
Clemens Bechinger<sup>1</sup>, <sup>1</sup>*2. Physikalisches Institut, Germany*

**OC096** 9.40 **Measurements of the Forces Between Bubble and Particle with AFM – Effect of Surface Charge and Hydrophobicity**  
Marta Krasowska<sup>1</sup>, Raymond Dagastine<sup>2</sup>, Daniel Fornasiero<sup>1</sup>, John Ralston<sup>1</sup>, <sup>1</sup>Ian Wark  
*Research Institute, University of South Australia, Australia*, <sup>2</sup>*Particulate Fluids Processing Centre, University of Melbourne, Australia*

**OC097** 10.00 **Superlubricity using Repulsive Van der Waals Forces**  
Adam Feiler<sup>1</sup>, Lennart Bergstrom<sup>3</sup>, Mark Rutland<sup>2</sup>, <sup>1</sup>YKI, Institute for Surface Chemistry, Sweden, <sup>2</sup>KTH, Royal Institute of Technology, Sweden, <sup>3</sup>Stockholm University, Sweden

*Ballroom 4/5* **THEME 6: Frontiers of Colloid & Interface Science**  
(continued)

**KN016** 9.00 **Liquid Crystal Colloids and Emulsions: A Structured Reactive Soft Matter**  
Hiroshi Yokoyama<sup>1,2</sup>, Jun-ichi Fukuda<sup>1,2</sup>, Camilla Voeltz<sup>2</sup>, Yoji Maeda<sup>2</sup>, Makoto Yada<sup>2</sup>,  
Makoto Yoneya<sup>1,2</sup>, Yuka Tabe<sup>2,3</sup>, <sup>1</sup>*National Institute of Advanced Industrial Science and Technology, Japan*, <sup>2</sup>*Liquid Crystal NanoSystem Project, ERATO/SORST, JST, Japan*,  
<sup>3</sup>*Waseda University, Japan*

**OC098** 9.40 **Pushing the Limits of Emulsification – Creating Edible Nanoemulsions that are Inherently Stable to Ostwald Ripening**  
Tim J. Wooster<sup>1</sup>, Matt Golding<sup>1</sup>, Helen French<sup>1</sup>, Peerasak Sanguansri<sup>1</sup>, <sup>1</sup>*Food Science Australia, Australia*

**OC099** 10.00 **Electrowetting of Ionic Liquid in Solid/Liquid/Liquid Systems**  
Mani Paneru<sup>1</sup>, Rossen Sedev<sup>1</sup>, John Ralston<sup>1</sup>, <sup>1</sup>*IWRI, Australia*

10.20am Morning Tea

10.50am

**Ballroom 3**      **THEME 7: Surface Forces and Nanotribology**

**KN017 10.50** **Molecular Analysis of Liquid Adsorption at the Solid/Liquid Interfaces: Surface Forces Measurement and Surface Selective Spectroscopy**  
Masashi Mizukami<sup>1</sup>, Kazue Kurihara<sup>1</sup>, <sup>1</sup>*Tohoku University, Japan*

**OC100 11.30** **Phase Transitions and Solvency studied using surface forces measurements: adsorbed polymer layers**  
Shannon Notley<sup>1</sup>, <sup>1</sup>*Applied Mathematics, School of Physical Sciences and Engineering, Australian National University, Australia*

**OC101 11.50** **Influence of Adsorbed Film Viscoelasticity on the Superior Lubrication Properties of Saliva**  
Lubica Macakova<sup>1,2</sup>, Gleb Yakubov<sup>1</sup>, Damiano Rossetti<sup>1</sup>, Mark Plunkett<sup>2</sup>, Jason Stokes<sup>1</sup>, <sup>1</sup>*Unilever Corporate Research, United Kingdom*, <sup>2</sup>*YKI, Institute for Surface Chemistry AB, Sweden*

**OC102 12.10** **Contact Angle Relaxation in Dewetting Processes**  
Renate Fetzer<sup>1</sup>, John Ralston<sup>1</sup>, <sup>1</sup>*University of South Australia, Australia*

**Ballroom 4/5**      **THEME 6: Frontiers of Colloid & Interface Science**

**OC103 10.50** **Comparative Study of the Benefits of Lignite Addition to the Flocculation of Different Types of Sludges**  
Y.R. Bhatt<sup>1</sup>, A. Salvador<sup>1</sup>, K.B. Thapa<sup>1</sup>, Y. Qi<sup>1</sup>, A.F.A. Hoadley<sup>1</sup>, <sup>1</sup>*Monash University, Australia*

**OC104 11.10** **Acoustically-Driven Interfacial Destabilisation and Atomisation in a Microfluidic Device**  
Leslie Yeo<sup>1</sup>, Aisha Qi<sup>1</sup>, James Friend<sup>1</sup>, <sup>1</sup>*Monash University, Australia*

**OC105 11.30** **Cleaning of Protein Coated Surfaces Using Nanobubbles: An Investigation Using a Quartz Crystal Microbalance**  
Guangming Liu<sup>1</sup>, Vincent S. J. Craig<sup>1</sup>, <sup>1</sup>*Department of Applied Mathematics, Research School of Physical Sciences and Engineering, The Australian National University, Australia*

**OC106 11.50** **Utilising Positron Annihilation Lifetime Spectroscopy to Reveal the Functional Molecular Sieving Framework of Amorphous Silica**  
Mikel Duke<sup>1</sup>, Steven Pas<sup>2,3</sup>, Anita Hill<sup>3</sup>, Jerry Lin<sup>4</sup>, Joao C. Diniz da Costa<sup>5</sup>, <sup>1</sup>*Institute for Sustainability and Innovation, Victoria University, Australia*, <sup>2</sup>*ARC Centre of Excellence for Electromaterials Science, Department of Materials Engineering, Monash University, Australia*, <sup>3</sup>*CSIRO Materials Science and Engineering, Australia*, <sup>4</sup>*Department of Chemical Engineering, Arizona State University, United States*, <sup>5</sup>*FIMLab – Films and Inorganic Membrane Laboratory, Division of Chemical Engineering, The University of Queensland, Australia*

**OC107 12.10** **Adsorption of Submicrometer-sized Cationic Sterically-Stabilised Polystyrene Latex at the Air-Water Interface: Foam Behavior and Contact Angle Determination by Ellipsometry**  
Erica Wanless<sup>1</sup>, Timothy Hunter<sup>1,3</sup>, Graeme Jameson<sup>1</sup>, Damien Dupin<sup>2</sup>, Steven Armes<sup>2</sup>, <sup>1</sup>*University of Newcastle, Australia*, <sup>2</sup>*University of Sheffield, United Kingdom*, <sup>3</sup>*University of Leeds, United Kingdom*

12.30pm      **Lunch**

1.30pm

**Ballroom 3**      **THEME 7: Surface Forces and Nanotribology**

- OC108** 13.30 **Dynamic Forces between Bubbles in Foams using Atomic Force Microscopy**  
Raymond Dagastine<sup>1</sup>, Ofer Manor<sup>1</sup>, Ivan Vakarelski<sup>1</sup>, Geoffery Stevens<sup>1</sup>, Franz Grieser<sup>1</sup>, Derek Chan<sup>1</sup>, <sup>1</sup>*Particulate Fluids Processing Centre, the University of Melbourne, Australia*
- OC109** 13.50 **Evaporation Models for Microdrops of Water on Hydrophobic and Hydrophilic Surfaces tested by AFM-Cantilever Measurements**  
Elmar Bonaccorso<sup>1</sup>, Dmytro S. Golovko<sup>1</sup>, Hans-Jürgen Butt<sup>1</sup>, <sup>1</sup>*Max Planck Institute for Polymer Research, Germany*
- OC110** 14.10 **Ion-specific Bubble Coalescence Inhibition: Nonaqueous Solvents**  
Christine Henry<sup>1</sup>, Vince Craig<sup>1</sup>, <sup>1</sup>*Department of Applied Maths, ANU, Australia*
- OC111** 14.30 **The Interaction Between a Very Small Rising Bubble and a Hydrophilic Titania Surface: Experiment**  
Luke Parkinson<sup>1</sup>, John Ralston<sup>1</sup>, Rogerio Manica<sup>3</sup>, Derek Chan<sup>2</sup>, <sup>1</sup>*University of South Australia, Australia*, <sup>2</sup>*The University of Melbourne, Australia*, <sup>3</sup>*Institute of High Performance Computing, Singapore*, <sup>4</sup>*National University of Singapore, Singapore*

**Ballroom 4/5**      **THEME 6: Frontiers of Colloid & Interface Science**

- OC112** 13.30 **Plasmon Interactions of Closely-Spaced Au Nanoparticles**  
Alison Funston<sup>1</sup>, Carolina Novo<sup>1</sup>, <sup>1</sup>*School of Chemistry, The University of Melbourne, Australia*
- OC113** 13.50 **Carboxymethyl Cellulose Adsorption on a Model Hydrophobic Surface Studied with QCM-D: Effect of Ionic Strength and pH on Conformation and Surface Wettability**  
Iliana Sedeva<sup>1</sup>, Daniel Fornasiero<sup>1</sup>, John Ralston<sup>1</sup>, David Beattie<sup>1</sup>, <sup>1</sup>*Ian Wark Research Institute, University of South Australia, Australia*
- OC114** 14.10 **Superhydrophobic Polymer Films Based on Malonamide Dendrons with Peripheral Long Alkyl Chains**  
Ru-Jong Jeng<sup>1</sup>, Wei-Ho Ting<sup>1</sup>, Shenghong A Dai<sup>1</sup>, Chao-Chin Chen<sup>1</sup>, <sup>1</sup>*National Chung Hsing University, Taiwan*
- OC115** 14.30 **Dynamic Interactions forces between particles and droplets in response to perturbations of surfactant adsorption**  
Hemayet Uddin<sup>1,2</sup>, Geoffrey Stevens<sup>2</sup>, Derek Chan<sup>3</sup>, Franz Grieser<sup>2</sup>, Raymond Dagastine<sup>1,2</sup>, <sup>1</sup>*Particulate Fluids Processing Centre & Department of Chemical and Biomolecular Engineering, The University of Melbourne, Australia*, <sup>2</sup>*Particulate Fluids Processing Centre & School of Chemistry, The University of Melbourne, Australia*, <sup>3</sup>*Particulate Fluids Processing Centre & Department of Mathematics and Statistics, The University of Melbourne, Australia*

2.50pm

Afternoon Tea

3.20pm

**Ballroom 3**      **THEME 7: Surface Forces and Nanotribology**

**OC116** 15.20 **The Interaction Between a Very Small Rising Bubble and a Hydrophilic Titania Surface: Theory**

Rogério Manica<sup>1</sup>, Luke Parkinson<sup>2</sup>, Evert Klaseboer<sup>1</sup>, John Ralston<sup>2</sup>, Derek Chan<sup>3</sup>,  
<sup>1</sup>*Institute of High Performance Computing, Singapore*, <sup>2</sup>*Ian Wark Research Institute, University of South Australia, Australia*, <sup>3</sup>*Particulate Fluids Processing Centre, The University of Melbourne, Australia*

**OC117** 15.40 **It's Easy To Understand Particle Dispersion In Air – Isn't It?**

Ingrid Heinicke<sup>1</sup>, Ian Larson<sup>1</sup>, <sup>1</sup>*Monash Institute of Pharmaceutical Sciences, Australia*

**Ballroom 4/5**      **THEME 6: Frontiers of Colloid & Interface Science**

**OC118** 15.20 **Controlled Thiol Deposition on Hybrid Gold-Polycarbonate Membranes**

Leonora Velleman<sup>1</sup>, Dusan Losic<sup>2</sup>, Joe Shapter<sup>1</sup>, <sup>1</sup>*Flinders University, School of Chemistry, Physics and Earth Sciences, Australia*, <sup>2</sup>*University of South Australia, Ian Wark Research Institute, Australia*

**OC119** 15.40 **Adsorption and Dipole Surface Orientational Order at Liquid Surfaces**

Bruce Law<sup>1</sup>, Jae-Hie Cho<sup>1</sup>, John Carpenter<sup>1</sup>, Dan Smith<sup>1</sup>, <sup>1</sup>*Kansas State University, United States*

4.05pm      Closing Remarks, **Ballroom 4/5**

