



Australasian Colloid and Interface Symposium

Crowne Plaza Terrigal · NSW · Australia
4-7 February 2024 · www.acis2024.org



PROGRAM

SUNDAY 4 FEBRUARY 2024

1.15pm-1.25pm

Coach Departure

Pick up point: Please arrive between 13.15 pm – 13.30 pm at the designated meeting point – Sedan & Limousine located at Terminal 2, Keith Smith Avenue, Sydney Domestic Airport (CCH Bay 1 At West End Of T2 Bldg Outside Carousel 6 prior original bays. Bay 2, in front of Bay 1 behind ORIGINAL ANGLED CCH BAYS).

Terminal 2, Sydney Domestic Airport. Coach provider is Murrays Coaches. Prior bookings essential.

4.00pm -6.30pm

Registration at Crowne Plaza Terrigal

Collect your name badge and satchel, then enjoy some time enjoying the surroundings of Terrigal.

6.30pm – 9.30pm

Welcome Reception – Seaside Market Stalls

Join your colleagues for a relaxed evening, enjoying some great local food and beverages.

Welcome reception is included in a full registration.

MONDAY 5 FEBRUARY 2024

PLENARY SESSION

9.00am – 9.10am

Welcome by Chair, Professor Erica Wanless & Dr Frank Sainsbury

9.10am – 10.15am

AE Alexander Lecture

Chair: Greg Warr

CALUM'S ROAD – TRAVERSING COLLOID AND SURFACE SCIENCE LANDSCAPES FULL OF DISCOVERY, INTRIGUE AND VALUE

Professor Calum Drummond, AO, RMIT University

Sponsored by:



10.15am - 10.40am

Morning Refreshments & Trade Exhibition

CONCURRENT SESSION 1

Time	Biological and Soft Interfaces	Colloid Frontiers: Fundamental & Applications	Colloids and Interfaces in Mineral Processing
	M1.1 Henry Kendall 1&2 Chair: Anton Le Brun	M1.2 Wamberal Chair: Rico Tabor	M1.3 Avoca / Terrigal Chair: Anh Nguyen
10.45am - 11.15am	M1.1.1 TEXTURE, TRIBOLOGY & TOUCH <i>Keynote Speaker</i> Lisa Skedung <i>RISE Research Institutes of Sweden</i> Sponsored by: 	M1.2.1 SHINING A LIGHT IN THE BLACK BOX OF APTAMER SCREENING USING BARCODED LIBRARIES <i>Keynote Speaker</i> Valeria Tohver Milam <i>Georgia Institute of Technology</i> Sponsored by: 	M1.3.1 SURFACE FORCES OF POLYMERS, MINERALS, EMULSIONS AND BUBBLES IN AQUEOUS AND OIL ENVIRONMENTS <i>Keynote Speaker</i> Hongbo Zeng <i>University of Alberta</i> Sponsored by: 
11.15am -11.35am	M1.1.2 LABEL-FREE OPTICAL TECHNIQUES TO STUDY THE SPATIALLY INHOMOGENEOUS RHEOLOGY OF BIOMOLECULAR CONDENSATES Daniele Vigolo <i>The University of Sydney</i>	M1.2.2 MODELLING SHELF LIFE AND AGGREGATION IN UHT PROCESSING OF MILK USING AN EQUILIBRIUM MINERAL SPECIATION MODEL Graeme Gillies <i>Fonterra Research And Development Centre</i>	M1.3.2 ADVANCED SURFACE CHARACTERISATION OF MINERALS – RECENT ADVANCES AND FUTURE OUTLOOK Susana Brito e Abreu <i>The Julius Kruttschnitt Mineral Research Centre</i>
11.35am -11.55am	M1.1.3 AMYLOID FORMATION AND NEUROTOXICITY IN COVID-19 Nicholas Reynolds <i>La Trobe University</i>	M1.2.3 LIPIDIC SELF-ASSEMBLY IN PROTIC IONIC LIQUIDS: THE BALANCE OF FORCES THAT CAUSE UNEXPECTED PHASE TRANSITIONS <i>Invited Speaker</i> Livia Salvati Manni <i>The University of Sydney</i>	M1.3.3 UNDERSTANDING MINERAL SURFACE HYDROPHOBICITY - A CONTACT ANGLE AND AFM STUDY Anran Niu <i>The Julius Kruttschnitt Mineral Research Centre</i>

CONCURRENT SESSION 1 - continued

11.55am - 12.05pm	<p>M1.1.4 UNDERSTANDING MOLECULAR INTERACTIONS AT THE HAIR SURFACE - A COSMETIC PERSPECTIVE Serena Cozzolino <i>KTH Royal Institute of Technology</i></p>	<p>M1.2.4 UNLOCKING THE PHYSICAL BEHAVIOR OF SKIM MILK CONCENTRATE: FLOW BEHAVIOR AND PHASE TRANSITIONS Cynthia Andriani <i>The University of Auckland</i></p>	<p>M1.3.4 INVESTIGATION OF THE ROLE OF BUBBLE CLUSTERS AT THE FROTH PHASE VIA X RAY RHEOGRAPHY Imtiaz Shah <i>University of New South Wales</i></p>
12.05pm – 12.25pm	<p>M1.1.5 BIOINTERFACIAL CHEMISTRY AND THE DEVELOPMENT OF THUNDERSTORM-TRIGGERED ASTHMA Stuart Prescott <i>University of New South Wales</i></p>	<p>M1.2.5 PROPERTIES OF POLYMER MICROGEL-COLLOIDS AND PASTES FROM LIGHT SCATTERING AND SUPERRESOLUTION MICROSCOPY Frank Scheffold <i>University of Fribourg</i></p>	<p>M1.3.5 INVESTIGATING PARTICLE ENTRAINMENT MECHANISM IN THE WAKES OF A RISING BUBBLE Subhashish Mitra <i>University of Newcastle</i></p>

12.25pm – 1.20pm **Lunch & Trade Exhibition**

PLENARY SESSION

1.20pm - 2.00pm

PANEL SESSION

AI in Science: Challenges, Opportunities, Impact

Henry Kendall 1&2

Moderator: **Dr Saffron Bryant**, *RMIT University*

Panellists:

Professor Calum Drummond AO, *RMIT University*


Professor Alister Page, *University of Newcastle*

Sophie Baker, *University of Newcastle*

Dr May Lim, *UNSW*

Associate Professor Stuart Prescott, *UNSW*

CONCURRENT SESSION 2- continued

Time	Biological and Soft Interfaces M2.1 Henry Kendall 1&2 Chair: Stuart Prescott	Colloid Frontiers: Fundamental & Applications M2.2 Wamberal Chair: Livia Salvati Manni	Colloids and Interfaces in Mineral Processing M2.3 Avoca / Terrigal Chair: George Franks
2.05pm – 2.25pm	M2.1.1 POLYMER BRUSHES IN HIGHLY COMPLEX SOLVENT ENVIRONMENTS Grant Webber <i>The University of Newcastle</i>	M2.2.1 POLYMERISATION-INDUCED SELF-ASSEMBLY (PISA): A POWERFUL PLATFORM TECHNOLOGY FOR BESPOKE POLYMER PARTICLES <i>Invited Speaker</i> Steven Armes <i>University of Sheffield</i>	M2.3.1 INTERFACIAL CHEMISTRY IN MINERAL GRINDING AND FLOTATION <i>Keynote Speaker</i> Kirsten Corin <i>University of Cape Town</i>
2.25pm - 2.35pm	M2.1.2 CHEMICALLY GRAFTED HYALURONIC ACID AS A DOPANT FOR THE ELECTRODEPOSITION OF PEDOT ULTRA-THIN FILMS Luiza Aguiar Do Nascimento <i>La Trobe University</i>	M2.2.2 FROM WASTE TREATMENT TO WATER TREATMENT: PHASE BEHAVIOUR OF HUMIC ACID - QUATERNISED CHITOSAN COMPLEXES Mingyu Yuan <i>Technische Universität Berlin</i>	Sponsored by: 
2.35pm - 2.55pm	M2.1.3 CHARACTERISING THE INTERACTION MECHANISMS OF PNIPAM POLYMER BRUSHES WITH ANIONIC, CATIONIC, AND NON-IONIC SURFACTANTS Andrew Nelson <i>ANSTO</i>	M2.2.3 MACHINE LEARNING FOR MATERIALS AND INTERFACES Tu Le <i>RMIT University</i>	M2.3.2 SUSTAINABLE SYNTHETIC NOVEL POLYACRYLAMIDES FOR IRON OXIDE RECOVERY FROM COMMON GANGUE MINERAL SILICA Sonia Khandaker <i>The University of Newcastle</i>
2.55pm - 3.15pm	M2.1.4 UNRAVELLING THE AQUEOUS BEHAVIOUR OF PLASMA POLYMERISED ACRYLIC ACID FILMS Karyn Jarvis <i>Swinburne University of Technology</i>	M2.2.4 STRONG POLYELECTROLYTE BRUSHES AS PROBES FOR ION-SPECIFIC UNDERSCREENING Erica Wanless <i>The University of Newcastle</i>	M2.3.3 NON-IONIC POLYACRYLAMIDE FLOCCULATION AGENTS FOR SEPARATION OF MINERAL-BASED NUCLEAR WASTE SIMULANTS Jacob Rumney <i>University of Leeds</i>
3.15pm - 3.25pm	M2.1.5 THE EFFECTS OF LIGAND COMPOSITION ON GOLD NANOPARTICLE ADSORPTION ONTO SUPPORTED LIPID BILAYERS Rashad Kariuki	M2.2.5 STRONG POLYELECTROLYTES EXHIBIT RE-ENRANT BEHAVIOUR: UNDERSCREENING IN HYPERSALINE ENVIRONMENTS Hayden Robertson	M2.3.4 SPECIFIC ION EFFECTS IN FLOTATION OF WATER-SOLUBLE MINERALS IN BRINE SOLUTIONS Kangkang Sun <i>The University of Queensland</i>

	RMIT University	The University of Newcastle	
3.25pm - 3.45pm	M2.1.6 ENSEMBLE MEASUREMENTS OF BACTERIAL MOTILITY USING DDM: HIGHLIGHTING BIOLOGICAL VARIABILITY Gary Bryant <i>RMIT University</i>	M2.2.6 A PATHWAY TO GREEN FLOTATION USING BIO-INSPIRED FOAMING AGENTS Pouria Amani <i>The University of Newcastle</i>	M2.3.5 AGGLOMERATION AND AGGREGATION STRATEGIES FOR ENHANCED FINE MINERAL RECOVERY Casey Thomas <i>The University of Melbourne</i>

3.45pm - 4.10pm

Afternoon Refreshments & Trade Exhibition

CONCURRENT SESSION 3			
Time	Biological and Soft Interfaces	Colloid Frontiers: Fundamental & Applications	Colloids and Interfaces in Mineral Processing
	M3.1 Henry Kendall 1&2 Chair: Karyn Jarvis	M3.2 Wamberal Chair: George Greene	M3.3 Avoca / Terrigal Chair: Susana Brito e Abreu
4.10pm - 4.30pm	M3.1.1 BEHAVIOUR OF ULTRA-SMALL GOLD NANOPARTICLES AT BIOMEMBRANES – ATOMIC INSIGHT AT SUPPORTED LIPID BILAYER AND LIPOSOME INTERFACES <i>Invited Speaker</i> Aaron Elbourne <i>RMIT University</i>	M3.2.1 THE NON-CLASSICAL ELECTRICAL DOUBLE LAYER OF IONIC LIQUIDS Rosa M Espinosa-Marzal <i>University of Illinois at Urbana-Champaign</i> <i>Presented by</i> Mark Rutland <i>KTH Royal Institute of Technology</i>	M3.3.1 EFFECT OF PYRITE TEXTURES AND COMPOSITION ON FLOTATION PERFORMANCE <i>Invited Speaker</i> Liza Forbes <i>The University of Queensland</i>
4.30pm - 4.50pm	M3.1.2 LIPID SELF-ASSEMBLY IN A DEEP EUTECTIC SOLVENT Saffron Bryant <i>RMIT University</i>	M3.2.2 SPECIFIC ION EFFECTS AT THE VAPOR-FORMAMIDE INTERFACE: A REVERSE HOFMEISTER SERIES IN ION CONCENTRATION DEPTH PROFILES Anand Kumar <i>CSIRO (Environment)</i>	M3.3.2 INTERACTIONS BETWEEN BUBBLE CLUSTERS AND THE PULP-FROTH INTERFACE Sayed Janishar Anzoom <i>University of New South Wales</i>
4.50pm - 5.10pm	M3.1.3 CHOLESTEROL CONTENT IN MODEL BILAYERS: IS IT REALLY WHAT WE EXPECT ? ANSWERS FROM NEUTRON SCATTERING Stephen Holt <i>Australian Nuclear Science And Technology Organisation</i>	M3.2.3 AN IONIC ELEMENT IN LUBRICATING GREASES: WHAT ARE THE IMPLICATIONS? Sergei Glavatskih <i>KTH Royal Institute of Technology</i>	M3.3.3 FLOCCULATION/FLOTATION TO IMPROVE RECOVERY OF FINE MINERALS George Franks <i>The University of Melbourne</i>

5.10pm - 5.30pm

M3.1.4
BIOPHYSICAL
CHARACTERISATION OF
ANIONIC LIPID MEMBRANES
USING QCM-D AND NEUTRON
REFLECTOMETRY
Arslan Siddique
University of New South Wales

M3.2.4
UNDERSCREENING IN
ELECTROLYTES: INSIGHTS FROM
MOLECULAR DYNAMICS AND
QUANTUM CHEMISTRY
Alister Page
The University of Newcastle

5.10pm-5.20pm
M3.3.4
USING POLYACRYLAMIDES TO
IMPROVE THE COLLECTION OF
FINE COPPER MINERALS
Regina B. D. De Medeiros
The University of Melbourne

5.20pm-5.30pm
M3.3.5
NANOBUBBLE GENERATION
WITH OVERSATURATION USING
MESOPOROUS MOLECULAR
SIEVES
Lingxi Ouyang
Griffith University

5.30pm – 7.30pm

POSTER NIGHT

Snacks and beverages served, while delegates have the opportunity to discuss their work amongst the poster presentations

**Student Presentations
Sponsored by**



**Poster Prizes
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TUESDAY 6 FEBRUARY 2024

PLENARY SESSION

- 8.55am - 9.05am** **Welcome by Chair – Erica Wanless** – *Henry Kendall 1&2*
- 9.05am - 10.05am** **ACIS Plenary Lecture** – *Henry Kendall 1&2*
 MILLIFLUIDIC EXTENSIONAL RHEOMETRY OF ENGINEERED BIOFILMS
Professor Julia Kornfield, *The California Institute of Technology*
- 10.15am – 10.45am** **Morning Refreshments & Trade Exhibition**

CONCURRENT SESSION 4

Time	Colloids for Delivery of Bioactive Compounds T4.1 Henry Kendall 1&2 Chair: Arlene McDowell	Nanocrystals and Nanoparticles: Colloidal Stability, self-assembly and interactions with light T4.2 Wamberal Chair: Paul Mulvaney	Colloid Frontiers: Fundamental & Applications T4.3 Avoca / Terrigel Chair: Valeria Tohver Milam
10.50am - 11.10am	T4.1.1 ADJUVANT-MODIFIED LIPID NANOPARTICLES FOR MRNA VACCINE DELIVERY <i>Keynote Speaker</i> Camilla Foged <i>University of Copenhagen</i>	T4.2.1 LIGANDS AND UPCONVERSION NANOPARTICLES: UNRAVELING THE QUENCHING INTERACTION <i>Keynote Speaker</i> Jiajia Zhou <i>University of Technology Sydney</i>	T4.3.1 BUCKLING AND INTERFACIAL DEFORMATION OF FLUORESCENT POLY(N-ISOPROPYLACRYLAMIDE) MICROGEL CAPSULES Jérôme Crassous <i>RWTH Aachen University</i>
11.10am - 11.20am	Sponsored by: 	Sponsored by: 	T4.3.2 INVESTIGATING REVERSIBLE ASSEMBLIES OF JANUS PARTICLES IN MICROFLUIDIC DEVICES Stephen Chung <i>The University of Auckland</i>
11.20am - 11.40am	T4.1.2 BIOCOMPATIBLE POLY(2-OXAZOLINE) NANORODS AS A TUNEABLE DRUG DELIVERY PLATFORM Kristian Kempe <i>Monash University</i>	T4.2.2 SOFT PLASMONICS BY SELF-ASSEMBLY OF WELL-DEFINED NANOCRYSTALS <i>Invited Speaker</i> Wenlong Cheng <i>Monash University</i>	T4.3.3 MICROFLUIDIC MECHANICAL MEASUREMENT OF INDIVIDUAL SOFT COLLOIDS Geoff Willmott <i>The University of Auckland</i>

CONCURRENT SESSION 4 - continued


11.40am - 12.00pm	<p>T4.1.3 REAL-TIME PH-DEPENDENT SELF-ASSEMBLY OF IONISABLE LIPIDS FROM COVID-19 VACCINES AND IN SITU NUCLEIC ACID COMPLEXATION Haitao Yu <i>RMIT University</i></p>	<p>T4.2.3 SURFACE TOPOGRAPHY QUANTIFICATION OF DNA FUNCTIONALIZED COLLOIDS VIA SUPER RESOLUTION MICROSCOPY Bahar Rouhvand <i>TU Eindhoven</i></p>	<p>T4.3.4 MICROGEL MONOLAYERS AT LIQUID INTERFACES: IN SITU ANALYSIS AND ROLE OF UNIAXIAL COMPRESSION Matthias Karg <i>Heinrich-Heine University</i></p>
12.00pm – 12.10pm	<p>T4.1.4 ANGIOPEP-2 FUNCTIONALISED CUBOSOMES FOR BLOOD-BRAIN BARRIER PENETRATION AND DRUG DELIVERY TO THE BRAIN Xudong Cai <i>RMIT University</i></p>	<p>T4.2.4 METALLIC NANOCOLLOIDS: AN IDEAL REACTOR FOR STUDYING LIQUID METAL – SOLID METAL CHEMISTRY Caiden Parker <i>RMIT University</i></p>	<p>T4.3.5 BICONTINUOUS MICROEMULSION IN POROUS MATERIALS Margarethe Dahl <i>Technische Universität Berlin</i></p>
12.10pm – 12.30pm	<p>T4.1.5 PROSPECTIVE SUBUNIT NANOVACCINE AGAINST MYCOBACTERIUM TUBERCULOSIS INFECTION - CUBOSOME LIPID NANOCARRIERS OF CORD FACTOR, TREHALOSE 6,6' DIMYCOLATE Sampa Sarkar <i>RMIT University</i></p>	<p>T4.2.5 CONTROLLING OPTICS VIA PRECISION ASSEMBLY OF HYBRID NANOPARTICLE SUPERSTRUCTURES Alison Funston <i>Monash University</i></p>	<p>T4.3.6 CARBON NITRIDES STABILIZED PICKERING EMULSIONS AND THE CATALYSIS AT LIQUID INTERFACES Jingsan Xu <i>Queensland University of Technology</i></p>

12.30pm - 1.30pm **Lunch & Trade Exhibition**

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CONCURRENT SESSION 5

Time	Colloids for Delivery of Bioactive Compounds	Liquid interfaces: droplets, bubbles and thin films	Colloid Frontiers: Fundamental & Applications
	T5.1 Henry Kendall 1&2 Chair: David Ju	T5.2 Wamberal Chair: Joseph Berry	T5.3 Avoca / Terrigal Chair: Ray Dagastine
1.30pm - 1.50pm	<p>T5.1.1 FUSOGENIC CUBOSOME LIPID NANOPARTICLES FOR THE DELIVERY OF THERAPEUTICS AND VACCINES Charlotte Conn <i>RMIT University</i></p>	<p>T5.2.1 WETTABILITY, LIQUID FRICTION AND SURFACES SLIPPERY TO LIQUIDS <i>Keynote Speaker</i> Glen McHale <i>University of Edinburgh</i></p>	<p>5T.3.1 THE COLLOID AND INTERFACE SCIENCE OF SHAMPOO <i>Keynote Speaker</i> Nick Ainger <i>Product Engineering, Science & Technology, Unilever U.K.</i> <i>Central Resources Limited</i></p>
1:50pm - 2:00pm	<p>T5.1.2 SUPERPARAMAGNETIC IRON OXIDE NANOPARTICLE-LOADED MAGNETOLIPOSOME FOR TUMOR TARGETED DELIVERY Sia Chin Siew <i>Monash University Malaysia</i></p>	<p>Sponsored by: </p>	<p>Sponsored by: </p>
2.00pm - 2.20pm	<p>T5.1.3 INVERSE CUBIC AND HEXAGONAL MESOPHASE EVOLUTION WITHIN IONIZABLE LIPID NANOPARTICLES CORRELATES WITH MRNA TRANSFECTION IN MACROPHAGES Maggie Zhai <i>RMIT University</i></p>	<p>T5.2.2 FLUID SLIP AND DRAG REDUCTION ON LIQUID-INFUSED SURFACES UNDER HIGH STATIC PRESSURE Chiara Neto <i>The University of Sydney</i></p>	<p>T5.3.2 WHAT DO THE NEXT GENERATION OF "GREEN" SURFACTANTS LOOK LIKE, AND HOW DO WE MAKE THEM? Rico Tabor <i>Monash University</i></p>
2.20pm - 2.40pm	<p>T5.1.4 CONSUMER-FRIENDLY DUAL-SHELL FUNGAL CHITOSAN-SILICA MICROCAPSULES WITH ENHANCED MECHANICAL AND BARRIER PROPERTIES FOR POTENTIAL COSMETIC APPLICATIONS Dan Baiocco <i>University of Birmingham</i></p>	<p>5T.2.3 EXPLAINING THE EXCEPTIONAL SLIPPERINESS OF COVALENTLY ATTACHED LIQUIDS Isaac Gresham <i>The University of Sydney</i></p>	<p>T5.3.3 HIGH-THROUGHPUT AQUEOUS ELECTROLYTE STRUCTURE PREDICTION USING IONSOLVR AND EQUIVARIANT NEURAL NETWORK POTENTIALS Sophie Baker <i>University of Newcastle</i></p>

CONCURRENT SESSION 5 - continued

2.40pm - 3.00pm	<p>T5.1.5 DESIGNER POLYELECTROLYTES FOR SINGLE ENZYME NANOPARTICLES Robert Chapman <i>The University of Newcastle</i></p>	<p>5T.2.4 HOW BUBBLES STABILISE UNDER CHEMICAL OVERSATURATION Lingxi Ouyang <i>Griffith University</i></p>	<p>T5.3.4 RECONFIGURABLE PICKERING EMULSIONS Shivangi Chourasia <i>Massey University</i></p>
3.00pm - 3.20pm	<p>T5.1.6 PH RESPONSIVE CUBOSOMES AND HEXOSOMES FOR DELIVERING ANTICANCER AND ANTIFUNGAL DRUGS Nhiem Tran <i>RMIT University</i></p>	<p>5T.2.5 ANGSTROM SIZE-DISTRIBUTION ENGINEERED GRAPHENE NANOPORES FOR METAL ION SEPARATIONS Chi Cheng <i>University of New South Wales</i></p>	<p>T53.5 THREE-DIMENSIONAL ARRESTED EMULSION STRUCTURES QUANTIFIED USING CONFOCAL MICROSCOPY Maryam Hosseini <i>University of New South Wales</i></p>
3.20pm - 3.30pm	<p>T5.1.7 STIMULI-RESPONSIVE COLLOIDS FOR SUSTAINABLE CHEMISTRY Hui Yang <i>The University of Auckland</i></p>	<p>5T.2.6 MOLECULAR DYNAMICS STUDY ON BULK GAS NANOBUBBLES Fankai Peng <i>The University of Sydney</i></p>	<p>T5.3.6 DISPERSION BEHAVIOUR OF INSOLUBLE PARTICLES IN NON-AQUEOUS MEDIA Megan Holdstock <i>University of Leeds</i></p>
3.30pm - 3:50pm	<p>T5.1.8 EMULSION-BASED APPROACHES FOR POLYMER NANOCOMPOSITE DESIGN FOR BIOMEDICAL APPLICATION Vipul Agarwal <i>University of New South Wales</i></p>	<p>5T.2.7 IMPROVED CONTACT ANGLE ANALYSIS THROUGH A MACHINE LEARNING-BASED APPROACH Daniel Shaw <i>The University of Melbourne</i></p>	<p>T5.3.7 FLOCCULANT-COLLECTOR-DISPERSANT INTERACTIONS IN FINE MINERAL FLOTATION Will Ng <i>The University of Melbourne</i></p>

3.50pm - 4.30pm **Afternoon Refreshments & Trade Exhibition**

4.30pm - 5.30pm **ACIS ANNUAL GENERAL MEETING**

McMasters Room

6.30pm - 11.30pm **ACIS GALA DINNER**

Come and celebrate the ACIS 10th birthday, bring your best party hat!

Dress Code: Cocktail or Smart Casual

Join us by the pool at 6.30pm for pre-dinner drinks.

Dinner commences at 7.30pm

WEDNESDAY 7 FEBRUARY 2024

CONCURRENT SESSION 6

Time	Colloids for Delivery of Bioactive Compounds W6.1 Henry Kendall 1&2 Chair: Charlotte Conn	Colloid Frontiers: Fundamental & Applications W6.2 Wamberal Chair: Maggie Zhai	Liquid interfaces: droplets, bubbles and thin films W6.3 Avoca / Terrigal Chair: Chiara Neto
9.00am - 9.20am	W6.1.1 COUPLING SURFACE INTERACTIONS WITH COLLOIDAL TRANSPORT TO UNDERSTAND ANTIBIOTIC DELIVERY WITH LIPID NANOCARRIERS Brendan Dyett <i>RMIT University</i>	W6.2.1 SPATIALLY RESOLVED DYNAMIC LIGHT SCATTERING: CHARACTERIZING COLLOIDS OVER UNPRECEDENTED RANGES OF TURBIDITY AND FLOW Guang Li <i>ATA Scientific</i>	W6.3.1 PROTEIN ADSORPTION AT THE OIL-WATER INTERFACE: EFFECT OF PROTEIN DENATURATION <i>Invited Speaker</i> Catherine Whitby <i>Massey University</i>
9.20am - 9.30am	W6.1.2 REGULATING THE STRUCTURAL POLYMORPHISM AND PROTEIN CORONA COMPOSITION OF PHYTANTRIOL-BASED LIPID NANOPARTICLES VIA CHOLINE IONIC LIQUIDS Mohamad El Mohamad <i>RMIT University</i>	W6.2.2 INVESTIGATION OF ION SPECIFIC EFFECTS IN ADSORPTION OF DIVALENT IONS AT GLYCEROL SURFACES Thomas Aquino Waso Ceme <i>Flinders University</i>	W6.3.2 INFLUENCE OF SURFACTANT HLB AND MOLECULAR WEIGHT ON THE CHARACTERISTICS AND STABILITY OF KEROSENE-IN-WATER EMULSIONS Azeez Aregbe <i>The University of Melbourne</i>
9.30am - 9.50am	W6.1.3 CONSEQUENCES OF ADSORPTION OF GASTROINTESTINAL BIOMOLECULES ONTO DRUG PARTICLES Ben Boyd <i>University of Copenhagen</i>	W6.2.3 FREQUENCY ENHANCED ELECTROCHEMICAL PRESSURE SOLUTION AND ITS APPLICATIONS IN NANOFABRICATION George Greene <i>La Trobe University</i>	W6.3.3 ATR FTIR SPECTROSCOPY OF PROTEIN AND SURFACTANT ADSORPTION TO THE OIL-WATER INTERFACE David Beattie <i>University of South Australia</i>
9.50am - 10.10am	W6.1.4 EXPLORATION OF PROTEIN-NANOPARTICLE INTERACTIONS IN HUMAN BLOOD Yi David Ju <i>RMIT University</i>	W6.2.4 SEE TINY BETTER: CASE STUDIES OF A NEW IMAGING MODALITY ON PARTICLE CHARACTERISATION AND PARTICLE AGGREGATION AND DEPOSITION Ray Dagastine <i>The University of Melbourne</i>	W6.3.4 GRAFTING HETEROGENEITIES RULE WATER INTRUSION AND EXTRUSION IN NANOPORES Fabio Rasera <i>Università Sapienza Di Roma</i>

CONCURRENT SESSION 6 - continued

10.10am - 10.30am	W6.1.5 MOLECULAR DYNAMICS SIMULATIONS OF DRUGS SOLUBILIZATION INTO MIXED BILE SALT/PHOSPHOLIPID MICELLES Fatmegyul Mustan-Borisova <i>Sofia University</i>	W6.2.5 CHARACTERIZATION OF SURFACE COATED ALUMINAS USING LOW- FIELD NMR SOLVENT RELAXATION AND HSP David Fairhurst <i>Colloid Consultants, Ltd.</i>	W6.3.5 BUMPY WATER AND LANGMUIR FILMS REVISITED: SELF ASSEMBLY OF NATURAL BRANCHED FATTY ACIDS LEADS TO FACILE, TUNEABLE NANOPATTERNING Mark Rutland <i>KTH Royal Institute of Technology</i>
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10.30am - 11.00am

Morning Refreshments

CONCURRENT SESSION 7

Time	Biological and Soft Interfaces W7.1 Henry Kendall 1&2 Chair: Aaron Elbourne	Nanocrystals and Nanoparticles: Colloidal Stability, self-assembly and interactions with light W7.2 Wameral Chair: Alison Funston	Liquid interfaces: droplets, bubbles and thin films W7.3 Avoca / Terrigal Chair: Glen McHale
11.00am - 11.20am	W7.1.1 TUNING THE MECHANICAL PROPERTIES OF LIPID BILAYERS TO BUILD A PROPAGATING PROTOCELL Joshua Marlow <i>University of New South Wales</i>	W7.2.1 EXPERIMENTAL INVESTIGATIONS OF UNDERSCREENING Vincent Craig <i>Australian National University</i>	W7.3.1 LINKING AFM TO MICROFLUIDICS TO STUDY DROP ADHESION – A FRAMEWORK TO CALCULATE WORK OF ADHESION IN AFM Xiaotong Song <i>The University of Melbourne</i>
11.20am - 11.40am	W7.1.2 LUBRICIN (PRG-4) ANTI- FOULING COATING FOR SURFACE-ENHANCED RAMAN SPECTROSCOPY BIOSENSING: TOWARDS A HIERARCHICAL SEPARATION SYSTEM FOR ANALYSIS OF BIOFLUIDS Mingyu Han <i>Agriculture & Food, CSIRO</i>	W7.2.2 SHAPE-SHIFTING CHIRAL NANOPARTICLES VIA CONTROL OF SURFACE FORCES Asaph Widmer-Cooper <i>The University of Sydney</i>	W7.3.2 CHARGE GENERATION AT THE FLUID-SOLID INTERFACE Joseph Berry <i>The University of Melbourne</i>

CONCURRENT SESSION 7 - continued

11.40am - 12.00pm	W7.1.3 THE ROLE OF PH IN THE BINDING OF THE HISTIDINE RICH ANTIMICROBIAL PEPTIDE CAERIN 1.1 TO BIOMIMETIC MEMBRANES Anton Le Brun <i>ANSTO</i>	W7.2.3 HETEROAGGREGATION AS A TOOL TO IMPROVE COLLOIDAL STABILITY AND ANTIOXIDANT ACTIVITY OF NANOZYME DISPERSIONS Istvan Szilagy <i>University of Szeged</i>	W7.3.3 TRAMPOLINING OF DROPLETS ON HYDROPHOBIC SURFACES USING ELECTROWETTING Zhantao Wang <i>Zhongshan Polytechnic</i>
12.00pm - 12.10pm	W7.1.4 INTERFACIAL COMPOSITION CONTROL OF NOVEL IONIC MATERIALS USING APPLIED FIELDS Sichao Li <i>KTH Royal Institute of Technology</i>	7.2.4 BACTERIAL NANOCELLULOSE IN DEEP EUTECTIC SOLVENTS - HYBRID FLUID FLOWS AND FORMULATIONS Patrick Spicer <i>University of New South Wales</i>	W7.3.4 INVESTIGATING THE FILM PROPERTIES OF CYCLODEXTRIN INCLUSION COMPLEXES WITH METAL-CONTAINING SPECIES AT LIQUID-LIQUID INTERFACES Oisin Owens <i>University of Leeds</i>
12:10 - 12:20	W7.1.5 SHORT ORAL PRESENTATION <i>To be confirmed</i>		W7.3.5 UNDER THE OXIDE – INVESTIGATION OF THE STRUCTURES AROUND THE OXIDE-LM REGION Pierre Vaillant <i>RMIT University</i>

12.20pm - 1.30pm

Lunch

CONCURRENT SESSION 8

Time	Biological and Soft Interfaces	Nanocrystals and Nanoparticles: Colloidal Stability, Self-assembly and Interactions With Light	Liquid Interfaces: Droplets, Bubbles and Thin Films
1.30pm - 1.50pm	<p style="text-align: center;">W8.1 Henry Kendall 1&2 Chair: Deb Wakeham</p> <p>W8.1.1 IN VITRO DIGESTION OF DAIRY LIPIDS: EFFECTS OF INTERFACIAL COMPOSITION <i>Invited Speaker</i> Malinda Salim <i>Monash Institute Of Pharmaceutical Sciences</i></p>	<p style="text-align: center;">W8.2 Wamberal Chair: Asaph Widmer-Cooper</p> <p>W8.2.1 ATOMIC LAYER DEPOSITED OVERLAYERS ON METAL CLUSTERS FOR PHOTOCATLYSIS Gunther Andersson <i>Flinders University</i></p>	<p style="text-align: center;">W8.3 Avoca / Terrigal Chair: Catherine Whitby</p> <p>W8.3.1 EXPLORING BIOSURFACTANTS AS A SUSTAINABLE ALTERNATIVE TO CHEMICAL SURFACTANTS Yang Li <i>The University Of Queensland</i></p>

CONCURRENT SESSION 8 - continued

1.50pm - 2.10pm	<p>W8.1.2 HIGH-THROUGHPUT INVESTIGATIONS OF FUSION PEPTIDE INTERACTIONS WITHIN THE LIPIDIC CUBIC PHASE</p> <p>Izabela Milogrodzka <i>ANSTO</i></p>	<p>W8.2.2 SPECTROELECTROCHEMISTRY OF QUANTUM DOTS</p> <p>Paul Mulvaney <i>The University of Melbourne</i></p>	<p>W8.3.2 SOLID METAL IN LIQUID METAL COLLOIDS FOR THE PRODUCTION OF AMMONIA</p> <p>Torben Daeneke <i>RMIT University</i></p>
2.10pm - 2.30pm	<p>W8.1.3 INTERACTIONS OF BILIARY MICELLES WITH POLAR LIPIDS FROM MILK</p> <p>Andrew Clulow <i>ANSTO</i></p>	<p>W8.2.3 HOW TO GET THE MOST OUT OF NANOPARTICLE CHARACTERISATION INSTRUMENTATION – THE VALUE OF USING REFERENCE MATERIALS, STANDARDISED METHODS AND DOCUMENTARY STANDARDS</p> <p>Åsa Jämting <i>National Measurement Institute</i></p>	<p>W8.3.3 STRUCTURAL EVOLUTION OF LIQUID METAL AND ALLOYS USING SMALL ANGLE NEUTRON SCATTERING</p> <p>Vaishnavi Krishnamurthi <i>RMIT University</i></p>
2.30pm - 2.50pm	<p>W8.1.4 SPECIFIC IONIC LIQUID EFFECT ON MODEL PROTEINS</p> <p>Qi Han <i>RMIT University</i></p>	<p>W8.2.4 TENSILE BENEFITS OF NANOFIBERS IN PAINT FILMS</p> <p>Geosmin Turpin <i>University of Sydney</i></p>	<p>W8.3.4 ELECTROCHEMICAL AND CORROSION PROPERTIES OF IONIC LIQUIDS</p> <p>Tamar Greaves <i>RMIT University</i></p>
2.50pm - 3.00pm	<p>W8.1.5 HOW CRUCIAL IS STRUCTURE? A NOVEL APPROACH TO OBSERVING INTERFACIAL STRUCTURING OF IONIC LIQUIDS</p> <p>Daniel Morris <i>University Of New South Wales</i></p>	<p>W8.2.5 THE COLLOIDAL AND FLUORESCENCE PROPERTIES OF NANODIAMONDS</p> <p>Philip Reineck <i>RMIT University</i></p>	<p>W8.3.5 SUPRAMOLECULAR RESTRUCTURING OF ULTRALOW CROSSLINKED MICROGELS FOR TARGETED ENCAPSULATION (SUPRAGELS)</p> <p>Alan Francisco Mejia <i>RWTH Aachen University</i></p>
3.00pm - 3.20pm	<p>W8.1.6 STRUCTURED BIOLAYER EMULSIONS GENERATE ULTRA-STABLE AND MULTIFUNCTIONAL EMULSION DROPLETS WITH BIOCATALYTIC INTERFACES</p> <p>Frank Sainsbury <i>Griffith University</i></p>	<p>W8.2.6 LIQUID METAL-ENABLED CRYSTALLIZATION OF ORGANOMETALLIC CHARGE TRANSFER COMPLEXES</p> <p>Mahroo Baharfar <i>University of New South Wales</i></p>	<p>W8.3.6 SURFACTANT-FREE OIL-IN-WATER NANOEMULSIONS</p> <p>Helena Hansen <i>Griffith University</i></p>

CONCURRENT SESSION 8 - continued

3.20pm - 3.30pm

W8.1.7
LIQUID-LIQUID PHASE
SEPARATION INDUCED CARBON
NANODOTS ASSEMBLY
Lei Bao
RMIT University

W8.2.7
FOLLOWING THE VOLUME
PHASE TRANSITION OF
THERMORESPONSIVE
MICROGELS BY DYNAMIC LIGHT
SCATTERING AND TURBIDITY:
CORRELATIONS DEPEND ON
MICROGEL HOMOGENEITY
Marius Otten
*Heinrich-Heine-University
Düsseldorf*

W8.3.7
IN SITU IMMOBILIZATION OF
MULTI-ENZYMES FOR
ENHANCED SUBSTRATE
CHANNELING OF ENZYME
CASCADE REACTIONS: A
NANOARCHITECTONICS
APPROACH BY DIRECTED
METAL ORGANIC
FRAMEWORKS
Dulini Fernando
Deakin University

3.35pm - 3.55pm

CLOSING CEREMONY AND AWARDS

3.55pm - 4.25pm

Afternoon Refreshments & Trade Exhibition

4.30pm

Bus Departure – bookings essential
Terrigal to Sydney Domestic Airport

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