



UNIVERSITY of
TASMANIA

School of Natural Sciences
Chemistry

30th Annual RACI R&D Topics Conference **in Analytical and Environmental Chemistry**

1st to 4th December 2024
University of Tasmania / Hobart



Conference committee

Yonglin Mai (Chair)

Kurt Debrulle (Co-Chair)

Jia Jia Seet (Co-Chair)

Special Thanks

Dr James Chapman

Prof Michael Breadmore

Prof Jason A Smith

Prof Paul Francis

Sian Kerr-Pilling

Robyn Lewis

Analytical & Environmental Divisional Awards

To be announced

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Sponsors



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General information

Name Badges

Please remember to collect your name badge during registration and wear it throughout all conference sessions. The organising committee will also be wearing name tags labeled "Organising Committee" and will be happy to assist you if needed

Oral Presentations

Oral presentations will be held in Stanley Burbury, University Centre. Delegates presenting oral presentations are kindly requested to contact a conference volunteer during the registration period at the beginning of each day (before 8:50 am) or on the welcome day to have their presentations uploaded onto the computer.

Poster Presentations

The poster session will be held on Monday, 2nd December, from 3:40 to 4:20 pm at the Stanley Burbury Foyer. Delegates presenting posters are kindly asked to hang their posters on the designated boards before 3:20 pm. Poster boards will be labelled with numbers corresponding to the abstract numbers in the conference booklet. Authors are requested to be present at their posters for the duration of the session

Prizes

1st, 2nd and 3rd place oral and poster prizes will be awarded to presenters according to an independent judging panel. Prizes will be awarded before the conference closing function.

Location and Parking

The conference venue is Stanley Burbury, University Centre, University of Tasmania, Sandy Bay TAS 7005 (See the maps below). All oral presentations will take place in this room. The morning/afternoon tea, lunch sessions, and poster presentations will take place in Stanley Burbury Foyer. For free parking, please contact conference committee member and provide your name and car registration number. Free parking card will be provided on the day. Further information on parking see <https://www.utas.edu.au/campus-services/parking/parking-zones>

Bus

Route 401: Lower Sandy Bay via Sandy Bay, University, Churchill Ave

Route 402: Lower Sandy Bay via Sandy Bay Rd – Evening and weekend services travel via University

Route 501: University via Regent St, Hobart City, Glenorchy Interchange

Route 601: University via Regent St, Hobart City, Rosny Park, Shoreline

Route 457: Mount Nelson via Dynnyrne, University, Nelson Road

Route 458: Mount Nelson via Dynnyrne, University, Nelson Road, Hobart College

Free UniHopper bus <https://online.flippingbook.com/view/905153252/>

Emergency Procedure

In the event of an emergency, you are to follow the instructions of the tenancy/floor wardens for the floor and make your way to the meeting point. Emergency instruction, visit the following page: <https://www.utas.edu.au/infrastructure-services-development/emergency-procedures>

Emergency contacts

Emergency Services 000

Police non-emergency (0) 131 444

Poisons information (0) 131 126

University Security (03) 6226 7600

Committee contact details

Chair: Yonglin Mai

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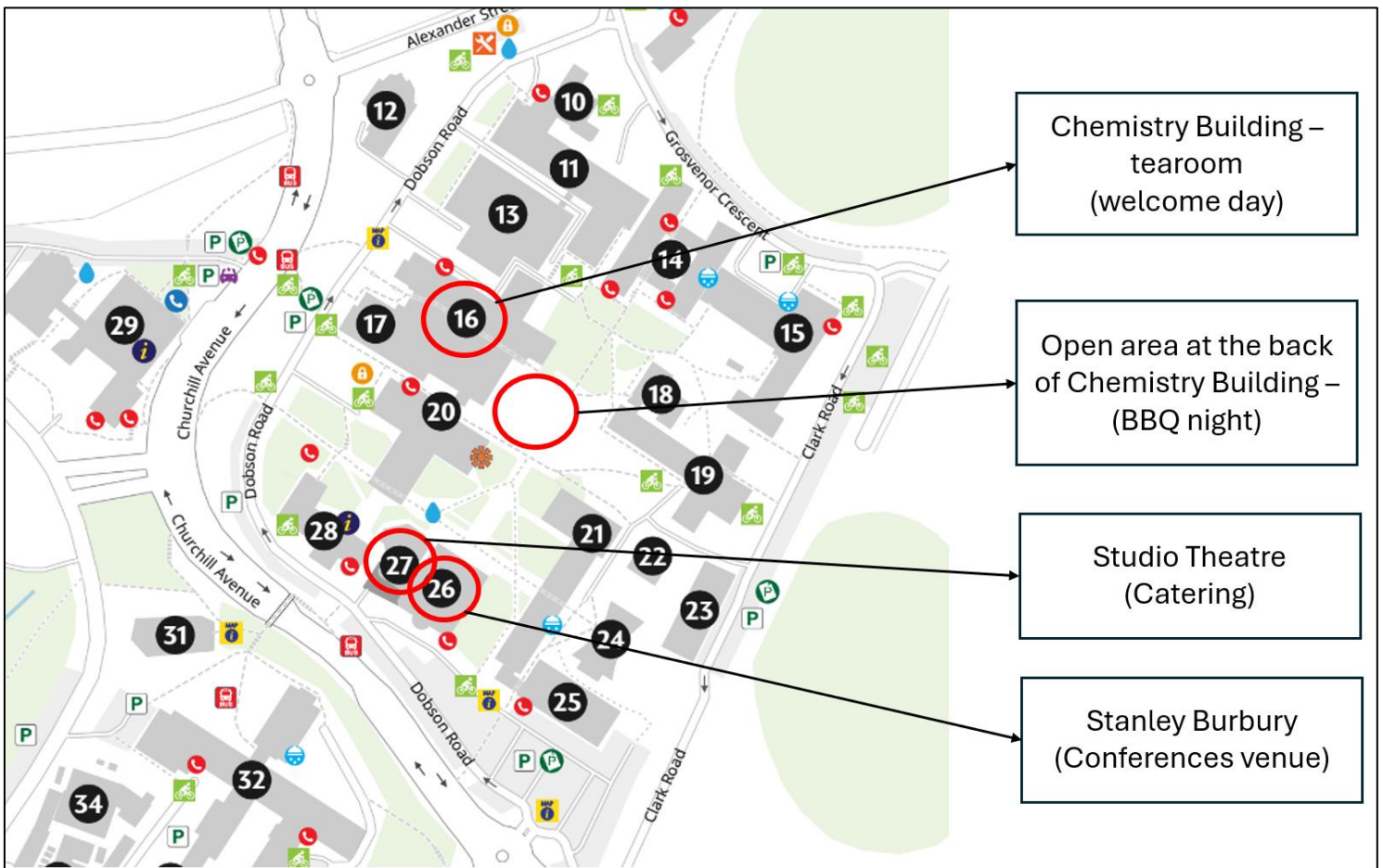
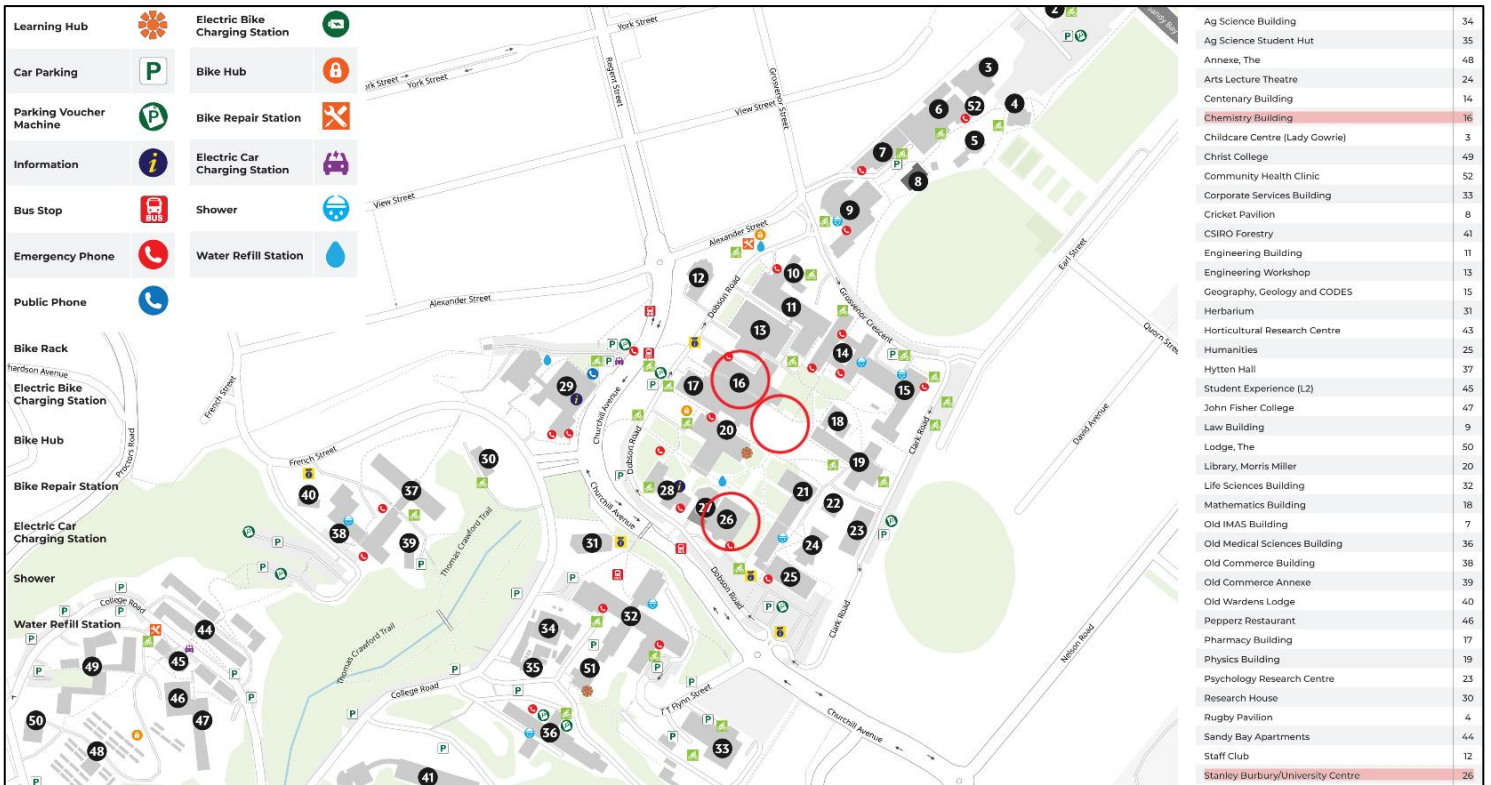
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Campus Map



Social Activities

Sunday 1st December:

Welcome day

Grab light drinks and snacks and get ready for a “nice to meet you”!

Venue: Chemistry Building-Tea Room

Time: 14:00-17:00

Cost: Free

Monday 2nd December:

Social BBQ

Enjoy Delicious Food, Networking, and Fun in a Vibrant Outdoor Setting!

Venue: Outside chemistry building

Time: 17:30-19:30

Cost: Free

Tuesday 3rd December:

Gala Dinner

Dress up for more discussion and socializing with iconic fine dining where you can see Hobart in every angle!

Venue: The Point Revolving Restaurant, Wrest Point
(410 Sandy Bay Rd, Sandy Bay TAS 7005)

Time: 18:00-21:00

Cost: RACI member: 90\$, non-member: 100\$

Dress Code: Smart casual

Wednesday 4th December:

Closing Function

Remember we meet in Hobart, exchange contact numbers and start the conversation on how great local Tasmanian produces are before waving goodbye!

Venue: Stanley Burbury, University Centre

Time: 13:00

Programme information

Sunday 1/12	Monday 2/12	Tuesday 3/12	Wednesday 4/12
2:00 PM – 5:00 PM Welcome Day, Registration open	8:30 AM – 9:00AM Registration Open	8:30 AM – 9:00AM Registration Open	8:30 AM – 9:00AM Registration Open
	9:00 AM – 9:30AM Conference Opening	9:00 AM – 9:40AM Plenary Lecture	9:00 AM – 9:40AM Plenary Lecture
	9:30 AM – 10:10AM Plenary Lecture	9:40 AM – 11:00AM Oral Presentation Section 5	9:40 AM – 11:00AM Oral Presentation Section 7
	10:10 AM – 10:50AM Oral Presentation Section 1		
	10:50 AM – 11:20AM Morning Tea & Trade Display	11:00 AM – 11:30AM Morning Tea & Trade Display	11:00 AM – 11:30AM Morning Tea & Trade Display
	11:20 - 1:00 PM Oral Presentation Section 2	11:30 AM – 12:50 PM Oral Presentation Section 6	11:30 AM – 12:30 PM Oral Presentation Section 8
	1:00 PM – 2:00PM Lunch & Trade Display	12:50 PM – 1:50PM Lunch & Trade Display	12:45 PM Prize Presentation
	2:00 PM – 2:40 PM Plenary Lecture	1:50 PM – 2:30 PM Plenary Lecture	1:00 PM Conference Closing Function
	2:40 PM – 3: 40 PM Oral Presentation Section 3	2:30 PM – 4: 30 PM Career Development	
	3:40 PM – 4:20 PM Poster Section		
	4:20 PM – 5: 00 PM Oral Presentation Section 4		
	5:30 PM – 7:30 PM Social Activity (BBQ)	6: 00 PM – 9:00 PM Social Activity (Gala Dinner)	

Oral Presentation

Monday 2nd December

9:30 AM	Plenary Lecture Alex Duan
	Oral Presentation Section 1 Chair: Yonglin Mai
10:10 AM	Reuben Mah Han Yang (University of Tasmania), <i>3-D Printed Microfluidic Devices for In-Field Colorimetric Measurement of Soil Macronutrients</i>
10:30 AM	Kim Nicolau (University of Tasmania), <i>High-resolution 3D printing and applications: Development of a microfluidic device for the detection of nitrate in water</i>
10:50 AM	Morning Tea & Trade Display
	Oral Presentation Section 2 Chair: Yonglin Mai
11:20 AM	Benjamin Boyle (Flinders University), <i>Photodegradation of tattoo pigments: Assessment of degradation product toxicity</i>
11:40 AM	Mayushi M. Jayakody (Deakin University), <i>Unravelling Key Aroma Compounds in (shelf-stable ready-to-eat) Butter Chicken</i>
12:00 PM	Yuying Feng (Deakin University), <i>Suitability of post-consumer recycled plastic as a food contact material</i>
12:20 PM	Adam Kolobaric (University of Queensland), <i>Optimising IR Polymer Identification for Weathered Marine Plastics: Addressing Library Limitations and Weathering Effects</i>
12:40 PM	Nuwanthika Kaushalya (University of Tasmania), <i>Determination of residual chemicals in bio-derived solvents using liquid chromatography - mass spectrometry</i>
1: 00 PM	Lunch & Trade Display
2:00 PM	Plenary Lecture Jenson George
	Oral Presentation Section 3 Chair: Ahmad Reza Norouzi
2:40 PM	Hasim Munawar (Curtin University), <i>Development of ruthenium complex-based thin film-based sulphate sensors</i>
3:00 PM	Elena Gorenskaia (Curtin University), <i>Anti-fouling electrochemical sensors for Bisphenol A based on ionic liquid and poly(ionic liquid) films</i>
3:20 PM	Sanathri Alwis (University of Tasmania),

	<i>Quantification of small organic molecules in sustainable biosolvent production processes using offline and online monitoring techniques.</i>
3:40 PM	Poster Section
	Oral Presentation Section 4 Chair: Ahmad Reza Norouzi
4:20 PM	Md Kawser Alam (University of Tasmania), <i>Spiral Inertial Microfluidics for Sorting, Separation and Real-time Detection of Bacteria</i>
4:40 PM	Mingyu Han (CSIRO), <i>Lubricin (PRG-4) anti-fouling coating for surface-enhanced Raman scattering biosensing: Towards a hierarchical separation system for analysis of unprocessed samples</i>
5: 30 PM	Social Activity (BBQ)

Tuesday 3rd December

9:00 AM	Plenary Lecture Andy Flies
	Oral Presentation Section 5 Chair: Jia Jia Seet
9:40 AM	Anne Yusuf (RMIT University), <i>Near infrared spectroscopy as a tool for rapid assessment of peatland condition</i>
10:00 AM	Mingxia Lai (University of Tasmania), <i>Comprehensive Analysis of Paleoclimatic Proxies in Ice Cores via Dual Capillary Ion Chromatography-Mass Spectrometry: Targeted and Untargeted Approaches</i>
10:20 AM	Mayisha Ahmedullah (Flinders University), <i>Challenges in the determination of surfactants in complex industrial wastewater samples</i>
10:40 AM	Harrison Stevens (University of Tasmania), <i>Comparing levoglucosan and mannosan ratios in sediments and corresponding aerosols from recent Australian fires</i>
11:00 AM	Morning Tea & Trade Display
	Oral Presentation Section 6 Chair: Kurt Debruille
11:30 AM	Holly Hollomon (University of New South Wales), <i>The Bioaccumulation and Biodistribution of Mercury Species in a Demersal Marine Fish (<i>Lutjanus Sebae</i>)</i>
11:50 AM	Muhammad Taufik Asadullah Abd. Rida'i (University of Technology Thonburi), <i>Water-Activated Silica-Based Solid Phase Extraction for Extracting Steryl Glucoside in Biodiesel</i>
12:10 PM	Manusha Dissanayakea (University of New South Wales), <i>Enhanced Glucose Sensing through Tailored Enzyme-Inspired Substrate Channels on Electrode Surface</i>
12:30 PM	Gemma Kerry (Flinders University), <i>Methamphetamine contamination and distribution in cars</i>
12: 50 PM	Lunch & Trade Display
1:50 PM	Plenary Lecture Alireza Ghiasvand
2:30 – 4:30 PM	Building Your Future: Insights from Chemistry Experts <i>Guiding the Next Generation of Innovators in Analytical and Environmental Chemistry</i>
6: 00 – 9:00 PM	Gala Dinner

Wednesday 4th December

9:00 – 9:40 AM	Plenary Lecture Julie Janssens
	Oral Presentation Section 7 Chair: Kurt Debrulle
9:40 AM	Ahmad Reza Norouzi (University of Tasmania), <i>Nanomaterials for 3D Printing Nano- and Micro-Porous Silicon-based Glass and Ceramics</i>
10:00 AM	Hengyue Xu (Tsinghua University), <i>The bio-inspired heterogeneous single-cluster catalyst Ni₁₀₀-Fe₄S₄ for enhanced electrochemical Conversion of CO₂-to-CH₄: A DFT Study</i>
10:20 AM	Sarah A. Ghobish (James Cook University), <i>Synthesis and Characterization of Eugenol-Derived Compounds as Biobased Plasticizers</i>
10:40 AM	Steven Blom (Deakin University), <i>Redox-Mediated Enhancement and Quenching of Co-Reactant Electrochemiluminescence</i>
11:00 AM	Morning Tea & Trade Display
	Oral Presentation Section 8 Chair: Kim Nicolau
11:30 AM	Thi Kieu Oanh Le (Griffith University), <i>Heterojunction photocatalysts for liquid phase CO₂ reduction</i>
11:50 AM	Gabriel Machado Silva (Griffith University), <i>Synthesis and electrochemical characterisation of a Y-doped barium cerate zirconate proton conductor for hydrogenation and dehydrogenation applications</i>
12:10 PM	Mahesh Prasad Timilsina (University of Tasmania), <i>Synthesis and Characterization of Biopolymers from Wood-Derived Compounds</i>
12: 45 PM	Prize Presentation
1:00 PM	Closing Function

Poster Presentation

Poster Section (Monday 2nd December)

1	Muhammad Taufik Asadullah Abd. Rida'i (University of Technology Thonburi)	<i>Impact of Temperature and Concentration eluent on Retention Behavior of Inorganic Analytes in Hydrophilic Interaction Liquid Chromatography (HILIC)</i>
2	Cameron A. Isaacs (Flinders University)	<i>Deep low-frequency Raman spectroscopy for the characterisation of buried apatites</i>
3	Dilhara Mayomi Dissanayaka (University of Tasmania)	<i>Compositional Analysis of Commercially Sourced Cyrene™ Using Advanced Gas Chromatography Mass Spectrometry Techniques</i>
4	Mikaela Radke (Griffith University)	<i>Novel Super critical fluid chromatography – High-resolution mass spectrometry interface development</i>
5	Batool A.M. Aljubran (Flinders University)	<i>Assessing the Impact of Tattoo Ink Laser Degradation Products on Skin Cell Viability: A Toxicological Investigation</i>
6	Lorentz Jäntschia (Technical University of Cluj-Napoca)	<i>Preliminary data analysis for calibration and structure-property-activity relationships</i>
7	Alma Nicolau (University of Tasmania)	<i>Deep eutectic solvents (DES): A green method for the preparation of functional hydrogel- based materials</i>
8	Zach Dimachki (Defence Science Technology Group)	<i>Towards more effective decontamination: Development of a bespoke test apparatus to analyse vapour from residual toxic chemical contamination</i>
9	Muhammad Salik Ali Khan (University of Tasmania)	<i>Soil Health Chip: A Cost-Effective and Portable Device for Precision Agriculture</i>