

Australian Future Sensing Conference



2-4 September 2026

La Trobe University, City Campus

Level 2, 360 Collins Street
Melbourne VIC 3000, Australia

Organising committee

Conference Co-chairs

Dr Saimon Silva, La Trobe University

A/Prof. Simon Corrie, Monash University

Prof. Conor Hogan, La Trobe University

Organising Committee

Dr Alain Wuetrich, The University of Queensland

Dr Elena Ereemeeva, Queensland University of Technology

Dr Ying Zhu, University of Technology Sydney

Dr Shanmuga Sundar Dhanabalan, La Trobe University

Dr Abu Sina, University of New South Wales

Prof. Chunxia Zhao, Adelaide University

Ms Laura Marcela Rey Gomez, Macquarie University

Prof. Brian Abbey, La Trobe University

Dr Kevin M. Koo, The University of Queensland

Day 1: Wednesday, 2nd September

08:00	Registration + coffee	
SESSION 1: Chair:		
08:45	Welcome and opening remarks Guest of Honour:	
09:00	Plenary Speaker Kevin Plaxco <i>University of California, Santa Barbara</i>	Molecular vital signs: recent advances in in vivo biosensors
09:45	Stephen Warren-Smith (invited) <i>Adelaide University</i>	Biosensing using microstructured optical fibres
10:00	Peter Reece (invited) <i>University of New South Wales</i>	Optical Trapping Enhanced Quantum Sensing with Bright Fluorescent Nanodiamonds
10:15	Stuart Fraser (contributed) <i>Culturon Pty Ltd</i>	When Charge Matters: Re-engineering Biosensor Surfaces for Covalent Capture Biomolecule Immobilisation
10:30	Wren Greene (contributed) <i>La Trobe University</i>	A Biomimetic Surface-Enhanced Raman Scattering Sensor for In-Situ Analyte Detection in Unprocessed Biofluids
10:45	Anindita Sen (contributed) <i>Victoria University of Wellington</i>	Aptamer-Gated CRISPR/Cas12a Fluorescent Sensing of ATP and Cocaine on Paper
11:00	Morning Tea	
SESSION 2: Chair:		
11:30	Clara Tran (contributed) <i>University of Sydney</i>	Plasma-Enabled Biofunctional Interfaces for Microfluidic Devices and Biosensing
11:45	Soniya Yambem (contributed) <i>Queensland University of Technology</i>	Organic transistor sensors/biosensors

12:00	Sina Jamali (invited) <i>Griffith University</i>	Stochastic Electrochemistry as a New Transduction Mechanism in Biosensors and Bioelectronics
12:15	Lunch	
SESSION 3: Chair:		
13:15	Keynote Speaker Kiana Aran <i>University of California, San Diego</i>	The Semiconductor Moment of Biology
13:45	Ying Zhu (invited) <i>University of Technology Sydney</i>	Lighting up detection: Next-generation biosensing and bioimaging using plasmonic nanohole arrays
14:00	Tim van der Wolf (contributed) <i>CSIRO</i>	Journey Beyond the Optical Table: A Diamond-Sensing Optimised Optical Front-End
14:15	Cesar S. Huertas (invited) <i>RMIT University</i>	Reading nucleic acid signatures in complex biological systems using integrated photonic biosensors
14:30	Azadeh Nilghaz (contributed) <i>Monash University</i>	Development of Multiplex Electrolyte Sensors Using Spatially Patterned Selective Membranes for Scalable Manufacturing
14:45	Afternoon Tea	
SESSION 4: Chair:		
15:15	PhD flash talk presentation, #1-13	
16:30	Poster Session + Networking	
18:00	END OF DAY 1	

Day 2: Thursday, 3rd September

08:30	Coffee	
SESSION 1: Chair:		
09:00	Plenary Speaker Yuling Wang (invited) Macquarie University	Advanced optical sensing for precision medicine: from biosensor design to clinical translation
09:45	Gyan Raj Koirala (contributed) Sungkyunkwan University	Gold-Nanoturf Integrated Wireless, Battery-Free Wearable Patch for Enhanced Stem Cell Delivery and Synergistic Skin Wound Closure
10:00	Rob Batchelor (contributed) University of New South Wales/Nutromics	Examination of the percentage of aptamers that remain functional in electrochemical aptamer biosensors via electrochemistry and in situ fluorescence microscopy
10:15	Kirill Alexandrov (invited) Queensland University of Technology	AI-design artificial protein biosensors
10:30	Minhaz Uddin Ahmed (contributed) Universiti Brunei Darussalam	Fluorescent Polystyrene Microsphere Reporters Enabling Sensitive CRISPR/Cas12a Aptasensing of Tetracycline
10:45	Anastasiia Tukova (invited) Macquarie University	Label-free SERS detection of biological analytes
11:00	Pabudi Weerathunge (contributed) RMIT University	Predictive Diagnosis of Antibiotic-Resistant Staphylococcus aureus using a Multiplexed Nanozyme Aptasensor
11:15	Morning Tea	
SESSION 2: Chair:		
11:45	Lei Bao (invited) RMIT University	Orientational Assembly of Carbon Dots for Ultrasensitive Electrochemical Sensing
12:00	Mingyu Han (contributed) CSIRO, La Trobe University	Ultra-Sensitive, Real-Time Molecular Sensing in Unprocessed Whole Blood Using Surface-Enhanced Raman Scattering Combined with Glycocalyx-Mimicking Structures

12:15	Fei Deng (invited) <i>University of New South Wales</i>	Advancements in CRISPR-based Diagnostics
12:30	Felipe Conzuelo (contributed) <i>NOVA University Lisbon</i>	Enzyme-Modified Microelectrodes for Local Analysis of Bioelectrochemical Reactions
12:45	Bao Yue Zhang (contributed) <i>RMIT University</i>	Tunable plasmonic metal oxides: a multifunctional platform for advanced biomolecular sensing
13:00	Lunch	

SESSION 3:

Chair:

13:45	Keynote Hnin Yin Yin Nyein (invited) <i>The Hong Kong University of Science and Technology</i>	Beyond the Central Lab: Decentralizing Healthcare with Bioelectronic Platforms
14:15	Keying Guo (contributed) <i>Guangdong Technion-Israel Institute of Technology</i>	Organic Bioelectronic Platform for Molecular Diagnostics
14:30	Abu Sina (invited) <i>University of New South Wales</i>	Precision Bioconjugates for Biosensing Applications
14:45	Tushar Kumeria (invited) <i>University of New South Wales</i>	Porous Photonic Crystals for Ultrasensitive Environmental Sensing
15:00	Rui Sang (contributed) <i>University of New South Wales</i>	Modular split-trigger based cooperative activation platform for Cas13-12 tandem biosensing system
15:15	Afternoon Tea	

SESSION 4:

Chair:

15:45	Emad L. Izake Kiriakous (contributed) <i>Queensland University of Technology</i>	Lab-on-Phone electrochemical immunosensor for rapid screening of LPhenylalanine in newborn and Phenylketonuria patients
16:00	David Simpson (invited) <i>University of Melbourne</i>	Voltage microscopy using optical defects in diamond

16:15	Kenneth Crozier (invited) <i>University of Melbourne</i>	Mid-infrared metasurfaces for chemical detection
16:30	Robert Sikos (contributed) <i>La Trobe University</i>	Electrochemical Loop-Mediated Isothermal Amplification (EC LAMP) for Rapid, Portable DNA Detection in Field Applications
16:45	Helmini Imalka Jayarathne Demahalgiriya Gamage Dona (contributed) <i>La Trobe University</i>	Experimental Investigation into the Irreproducibility of Screen Printed Electrodes
17:00	Panel discussion	
17:30	Conference Mixer	
21:00	END OF DAY 2	

Day 3: Friday, 4th September

08:30	Coffee	
SESSION 1: Chair:		
09:00	Plenary Speaker Wei Gao (invited) California Institute of Technology	Body-Interfaced Biosensors
09:45	PhD flash talks, #14-25	
11:00	Morning Tea	
SESSION 2: Chair:		
11:30	Amos Akande (contributed) La Trobe University	Emerging Nanofabrication Strategies for High-Performance Sensor Development

11:45	Jacopo Giarretta (contributed) <i>The University of Sydney</i>	Enzymes Immobilisation and Biosensors Performance: A Case Study
12:00	Sam Scholten (contributed) <i>The University of Queensland</i>	Single-protein identification and conformational dynamics in silicon nanocavities
12:15	Nitu Syed (contributed) <i>RMIT University</i>	From Liquid Metals to Few Atom thick Functional Materials: A Scalable Pathway to Advanced Nanoelectronics for High Performance Ammonia Sensors
12:30	Surasak Kasetsirikul (contributed) <i>Queensland University of Technology</i>	Electrochemical Aptamer-Based Biosensors for Continuous, Non-Disruptive Monitoring of Hepatic Differentiation In Vitro
12:45	Samridhi Bajaj (contributed) <i>La Trobe University</i>	New Analytical Sensing Applications of Bipolar Annihilation Electrochemiluminescence
13:00	Lunch	
SESSION 3: Chair:		
13:45	Keynote Speaker Wenlong Cheng (invited) <i>The University of Sydney</i>	Solution-born gold nanomaterials for soft wearable bioelectronics
14:15	Fateme Akhlaghi Bagherjeri (contributed) <i>RMIT University</i>	A point-of-use conductometric biosensor for ultra-sensitive detection of preeclampsia biomarker Htra4 in saliva and serum
14:30	Ronil Rath (contributed) <i>La Trobe University</i>	Developing Electrochemical Aptamer Biosensors for the detection of Illicit Drugs
14:45	Zhenling Cui (contributed) <i>Queensland University of Technology</i>	Rapid Discovery of Protein and Small-Molecule Binders and Biosensors using mRNA display
15:00	Sepehr Talebian (contributed) <i>The University of Sydney</i>	Development of PSS-Maleimide Doped Polypyrrole in Electrochemical Aptasensor for the Detection of Saxitoxin Gene
15:15	Closing Ceremony + Awards	
15:45	END OF DAY 3	

Flash talks + Posters

#	Presenter	Title
1	Asad Feroze <i>Adelaide University</i>	Next-Generation AlGaIn/GaN HEMT Platform for Real-Time ECG Monitoring
2	MENGCHI WANG <i>Deakin University</i>	Regulating Chiral Selectivity on Liquid-Metal-Derived Nanoporous Gold Interfaces
3	Md. Akeruzzaman, Shaon <i>Charles Sturt University</i>	Programmable Double-Gated Molecular Switches Enable Extraction-Free, Direct Zygosity Resolution of Single-Nucleotide Variants
4	Salma Sultana Tunny <i>Monash University</i>	Truncation-Optimised Split Aptamers Enable Ratiometric Photoacoustic Vancomycin Monitoring
5	Iqra Zaman <i>Curtin University</i>	Leak-free Amperometric Gas Sensors using Miniaturised Sensing Devices
6	Thiago Pimenta <i>La Trobe University</i>	Electrochemical Biosensing Approach to Biomarker Discovery: Towards Point-of-Care Cancer Detection
7	Henry Bellette <i>La Trobe University</i>	Enabling Field-Deployable Screening of PFAS with a Protein-Based Biosensing Platform
8	Irfan Farabi Hayat <i>Queensland University of Technology</i>	A Modular Sensing and Actuating System for Detection of Farnesyl Pyrophosphate
9	Evan Diamandikos <i>RMIT University</i>	Label-Free, Sensitive, and Direct Detection of Cardiac Troponin Biomarkers Using Frequency-Locked Microring Resonators
10	Milad Razbin <i>The University of Sydney</i>	Electrospun ZnO-Doped Polyhydroxybutyrate as a Sustainable Piezoelectric Material
11	Kazi Morshed Alom <i>Macquarie University</i>	Surface-Enhanced Raman Scattering for Cancer-specific DNA Methylation Analysis
12	Dulani Liyanage <i>Swinburne University of Technology</i>	Pd-decorated yolk (SiO ₂) and shell (MoS ₂ deposited TiO ₂ shell) nanospheres for hydrogen sensing at room temperature
13	John Raschke <i>RMIT University</i>	Miniature Fluorescence Detection for In-Surgery Glioma Localisation

Flash talks + Posters

#	Presenter	Title
14	Xinnian Li <i>Deakin University</i>	MXenes: An Emerging Class of Fluorescence Quenchers
15	Erangi Amarasinghe <i>RMIT University</i>	Development of Aptamer-based Sensor Technology for Point-Of-Care (POC) Diagnosis
16	Jayani Upeksha Halpegama <i>The University of New South Wales</i>	Surface designs for electrochemical STORM-based single-molecule biosensor
17	Hansani Maussawa <i>Latrobe University</i>	Development of an Electrochemical aptamer based biosensor for the detection of Cocaine
18	Thien Tien Nguyen <i>La Trobe University</i>	PEG-BASED HYDROGEL AS ANTI FOULING COATING FOR ELECTROCHEMICAL APTAMER BIOSENSING
19	Ben McKenzie <i>La Trobe University</i>	Towards Low-Cost, Robust, Point-of-Use Electrochemical Nucleic Acid Detection With a Smartphone Using Loop-Mediated Isothermal Amplification (LAMP)
20	Fabian Garay-Rairan <i>The University of Sydney</i>	Integrated Microheater-Sensor Chip and Control System for Portable VOC Detection
21	Aisha Javed <i>Deakin University</i>	Engineering aptamer based nano-interface for single exosome analysis
22	Jialin Deng <i>The University of New South Wales</i>	Development of Ion Selective Sensors for Detection of Ionic Species
23	Surasak Kasetsirikul <i>Queensland University of Technology</i>	Electrochemical Aptamer-Based Biosensors for Continuous, Non-Disruptive Monitoring of Hepatic Differentiation In Vitro
24	Micaela Sequeira <i>Queensland University of Technology</i>	DNA Aptamer-Based Biosensors for Complex Molecular Targets
25	Vatsala Pithaih <i>La Trobe University</i>	Ultrasensitive Electrochemical Detection of the Merkel Cell Carcinoma Biomarker miR-375 Using Duplex-Specific DNase Amplification

Posters

#	Presenter	Title
26	Srikrishnan Ramachandran <i>Deakin University</i>	Modulating Chemotactic Behaviours of 2D Nanobots by a Enzyme Based Nanoarchitectonics Approach
27	Arezo Mirzaeias <i>Monash University</i>	Toward Continuous Protein Biosensing: Regeneration strategies for wearable aptasensors
28	Theja Prabhakar <i>The University of Sydney</i>	Improve Selectivity of Electrochemical Sensors by Zwitterion Coating
29	Khongpon Ponlanchantra <i>Queensland University of Technology</i>	Development of iron biosensor
30	Ayad Saeed <i>University of New South Wales</i>	POROUS SILICON-BASED LONG SHELF-LIFE ON-DEMAND ACTIVABLE SERS SUBSTRATES FOR BIOTHIOL DETECTION
31	Man Man Chung <i>University of Sydney</i>	Plasma Activated Coating – a novel technique for stabilizing ScreenPrinted Electrodes and enhancing covalent biomolecule immobilization in Electrochemical Biosensing
32	Husn Ara Chauhan <i>The University of New South Wales</i>	Mesoporous Silica Nanoparticle-Based Platform Incorporating Bis(4-chloro-7-nitrobenzofurazan) Sulfide for Selective Detection of Hydrogen Sulfide
33	Kavitha Lakavath	A Rapid and Sensitive NH ₂ -rGO/PProDOT/Au Nanocomposite Modified SPCE for Electrochemical Detection of Carbendazim in Real Samples
34	Mohammad Al Amin Shawon <i>RMIT University</i>	Developing Aptamers for the Point-of-Care (POC) Diagnosis of Kidney Diseases: Early Detection and Ongoing Monitoring
35	Eray Er <i>The University of Sydney</i>	Electrospun Nanofiber-Based Electrochemical Immunosensor for MPT64 Detection
36	Ekaterina Larionova <i>Queensland University of Technology</i>	Rapid and Sensitive Detection of C-Reactive Protein Using Engineered Protein Biosensors
37	Cagla Ergun Ayva <i>Queensland University of Technology</i>	A Tetracycline-Controlled Survival Assay Converts Rare Earth Metal Binding into Antibiotic Resistance
38	Katapol Kamolchanokkul <i>RMIT University</i>	Multiplexed Biosensing with Cascaded Silicon Nitride Microring Resonators Enabled by Optical Frequency Comb
39	Kavya Saravanan <i>RMIT University</i>	Glucose Detection using mmWave Biosensor
40	Kristin Ryan <i>Queensland University of Technology</i>	Engineering a Protein Biosensor for Detection of Established Iron Deficiency Markers Using Novel Binders Created With mRNA Display

41	Md Monir Hossain <i>RMIT University</i>	Phage Display-Based Biosensing for Rapid Detection of Neonatal Group B Streptococcal (GBS) Infection
42	Jessica Huang	Intellectual Property Protection in the Research Environment
43	Samali Liyanaarachchi <i>Monash University</i>	Low-Dose X-Ray Detection Using Polymer Coated Microcantilever Sensors
44	Prince Kumar <i>North-Eastern Hill University</i>	From Seeds to Sensor: A Sustainable Approach to Direct Urea Detection in Milk Using Watermelon Seeds Urease
45	Helmini Imalka Jayarathne Demahalgiriya Gamage Dona	Experimental Investigation into the Irreproducibility of Screen Printed Electrodes
46	Samridhi Bajaj <i>La Trobe University</i>	New Analytical Sensing Applications of Bipolar Annihilation Electrochemiluminescence
47	Victoria Hughes	Biosensors in Quality Control – A Wine-Making Perspective
48	Mayra Judith Barrios Leguarca <i>Queensland University of Technology</i>	Using Computational and Experimental Approaches for Engineering Artificial Protein Biosensor Receptors
49	Adel Abdelfattah <i>Griffith University</i>	Biofouling-Resilient Laser-Induced Graphene Wearable Biosensor for Drift-Compensated Sweat Biomarker Monitoring
50	Chao-Tsen (Rora) Chen <i>The University of Sydney</i>	Flexible Fibre-based Biosensor for LDL Detection
51	Nour Manafikhi <i>Macquarie University</i>	Highly Porous ZrO ₂ Coated ZnO Nanostructures for Mechanically Robust Underwater UV Sensing
52	Tingting Liu <i>The University of Auckland</i>	Development of a Cost-effective, Label-free Electrochemical Aptasensor for Sensitive Detection of Saxitoxin
53	Meining Zhang <i>Renmin University of China</i>	Continuous In Vivo Sensing with Implanted Microelectrode

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