Thursday 19 November - Day 1 Morning Sessions

9:00 – 9:30 **Zoom Webinar Room**	**Opening and Organisational Update from Andrew Peele, ANSTO & Michael James, ANSTO** https://monash.zoom.us/j/89766474102?pwd=UlhaQ1pmUGRQc083OFJ0TVlGQzI5Zz09		
9:30 – 10:30 **Zoom Webinar Room**	**Plenary 1** **Prof Esther Takeuchi, Stony Brook University** **#294:** *Peering into Batteries: Electrochemical Insight through Operando Methods* https://monash.zoom.us/j/89766474102?pwd=UlhaQ1pmUGRQc083OFJ0TVlGQzI5Zz09 (***same as Opening Session***) ***Chair: Michael James*** ***Co-Hosts: Chris McNeill, Andrew Clulow***		
Zoom Meeting Room	**Session 1** https://monash.zoom.us/j/82078195704?pwd=bVM1ek1OWFg2UGdmVEtveUFLeVR5QT09	**Session 2** https://monash.zoom.us/j/83926066225?pwd=WUZvYVBGRUoydkhMc2RLOEJBZkF3QT09	**Session 3** https://monash.zoom.us/j/82961962357?pwd=d21neFdrUnBEc0pEeFNMMzBpaUd0UT09
	Biomedicine and Health ***Chair: Simon Lewis*** ***Co-Host: Cindy Xiao***	**Advanced Materials and Hard Matter** ***Chair: David Beattie*** ***Co-Host: Andrew Clulow***	**Earth, Atmosphere and Environment** ***Chair: Courtney Ennis*** ***Co-Host: Bettina Richen***
10:30 – 11:00 **Invited Speakers**	**Dr Mark Hackett** **#230**: *Using Synchrotron Radiation to map the Metallo-Maze to memory loss*	**A/Prof Jennifer MacLeod** **#196**: *Soft x-ray studies of molecular nanoarchitectures*	**Dr Ryo Sekine** **#246**: *Light on the details: exploring the nano-silver behaviour at the plant-soil interface*
11:00 – 11:20	**Ashley Hollings** **#176**: *Spectroscopic studies of brain zinc homeostasis and its role during cognitive decline and ageing*	**Klaus Boldt** **#167**: *Quantification of material gradients in nanocrystals*	**Fatima Naim** **#181:** *The use of synchrotron X-ray fluorescence microscopy to study the "battle for nutrients" between plant and pathogen*

11:20 – 11:40	**Elette Engels** **#194**: *Towards personalized microbeam radiation therapy for brain cancer treatment*	**Chris McNeill** **#219**: *Resonant tender X-ray diffraction for disclosing the molecular packing of paracrystalline conjugated polymer films*	**William Parker** **#231:** *XFM analysis of marsupial teeth - insights into life, growth and reproduction*
11:40 – 12:00	**Nilakhi Poddar** **#213:** *A structural and functional investigation of the periplasmic arsenate-binding protein, ArrX from Chrysiogenes arsenatis*	**Jimmy Kotsakidis** **#203**: *The structure and air stability of calcium and magnesium intercalated graphene on 6H-SiC(0001)*	**Annaleise Klein** **#188:** *Probing the cell wall response of Sphagnum moss to a changing aqueous chemical environment. A synchrotron infrared microscopy study*
12:00 – 1:00	**Lunch break**		

Thursday 19 November - Day 1 Afternoon Sessions

Zoom Meeting Room	**Session 4** https://monash.zoom.us/j/83899646430?pwd=KzRiNnVaUEtEdEovbWRsK0EyQzJGZz09	**Session 5** https://monash.zoom.us/j/83808768064?pwd=U3RIa011Znp1VVZqckF3b1JSVWx0QT09	**Session 6** https://monash.zoom.us/j/88201011454?pwd=YlhBcTdSNUp4clpscmxONHJkbkgzZz09
	Biomedicine and Health ***Chair: Mark Hackett*** ***Co-Host: Cindy Xiao***	**Advanced Materials and Hard Matter** ***Chair: David Beattie*** ***Co-Host: Bettina Richen***	**Chemistry, Catalysis and Soft Matter** ***Chair: Aaron Elbourne*** ***Co-Host: Andrew Clulow***
1:00 – 1:30 Invited Speakers	**A/Prof Timur Gureyev** **#174:** *Phase-contrast tomography for breast cancer imaging at Imaging and Medical Beamline of the Australian Synchrotron*	**A/Prof Jack Clegg** **#292:** *Understanding the mechanisms bending in flexible crystals*	**A/Prof Patrick Kluth** **#179:** *Tracks, pores, cylinders and cones: SAXS as a tool to study high-energy ion modified materials*
1:30 – 1:50	**Melissa Preissner** **#239**: *Capturing lung health in animal models of ventilator-induced lung injury and cystic fibrosis using 4D X-ray imaging*	**Stephanie Boer** **#243**: *Developing high pressure single crystal crystallography at MX*	**Sachini Kadaoluwa Pathirannahalage** **#225:** *Effect of surfactant ionicity on critical micelle concentration in aqueous ionic liquid mixtures*
1:50 – 2:10	**Damian Myers** **#240**: *Assessment of bone microarchitecture and mineralisation changes in an animal model of inflammatory bowel disease using high-resolution synchrotron-based microCT*	**Jason Price** **#235**: *Chemical crystallography at the Australian Synchrotron Macromolecular Beamlines*	**Stuart Brown** **#226:** *Quantitative determination of protein solubility in ionic liquids*

2:10 – 2:30	**Michael Rice** **#168**: *A Vδ3+ subset of MR1 reactive γδ T cells recognise the side of the MR1 molecule*	**Ahmed Al-Qatatsheh** **#224**: *Investigation of a 3D-crosslinked nonconjugated radical polymer to tune electrical conductivity*	**Tamar Greeves** **#236:** *Solvent properties of protic ionic liquid-water mixtures, and their application to biological molecules*
2:30 – 2:50	**Coffee break**		
Zoom Meeting Room	**Session 7** **https://monash.zoom.us/j/85979671884?pwd=U3FaNUQ0Q3V1SlBXN3VnWFFsS0tndz09**	**Session 8** **https://monash.zoom.us/j/85776702318?pwd=UlowbzRsczFGS3J5d1pwUGRCSVY0dz09**	**Session 9** **https://monash.zoom.us/j/87161064486?pwd=THJiVVFOZ1g4a1ZSaVl6aTNMdzFBQT09**
	Biomedicine and Health ***Chair: Mark Hackett*** ***Co-Host: Cindy Xiao***	**Advanced Materials and Hard Matter** ***Chair: Marta Krasowska*** ***Co-Host: Andrew Clulow***	**Manufacturing, Engineering and Cultural Heritage** ***Chair: Fatima Naim*** ***Co-Host: Bettina Richen***
2:50 – 3:20	**A/Prof Ivan Kempson** **#289:** *Metal nanoparticle radiosensitization for improving radiotherapy*	**Dr Rosalie Hocking** **#282:** *Mechanistic insights into functional Electrocatalysis from XAS: the story from experimental design to insights into electron transfer timescales important for selectivity*	**Dr Casey Doolette** **#288:** *Dual sample analysis on the XFM beamline: a new approach to increase the throughput of analysis of large samples*
3:20 – 3:40	**Wael Awad** **#227**: *Molecular insights into the specificity and potency of metabolite-mediated T-cell immunity*	**Ricardo Peralta** **#228** *Highly active gas phase organometallic catalysis supported within metal-organic framework pores*	**Michael Jones** **#215:** *Fast-scanning X-ray Diffraction Microscopy (SXDM) at the XFM beamline*
3:40 – 4:00	**Christopher Szeto** **#186**: *Characterization of SARS-CoV-2 peptides presented by Human Leukocyte Antigen molecules*	**Jingwei Hou** **#205**: *Probing phase transitions of metal-organic frameworks by THz/Far-IR*	**Dongdong Qu** **#221:** *Trace element distributions in Al-Zn based coating alloys on steel substrates investigated by synchrotron XFM*
4:00 – 5:00	**Plenary 2** **Prof Serena DeBeer, Max Planck Institute for Chemical Energy Conversion** ***#293:*** *The Evolution of Electronic Complexity in Biology: 2p3d and 1s3p RIXS of Iron-Sulfur Clusters* **https://monash.zoom.us/j/83452054981?pwd=Q1FUMFVjTm9VbE VtOUR0U3VyQT09** ***Chair: Chris McNeill*** ***Co-Host: Andrew Clulow***		
5:00 – 7:00	**Poster Session and Virtual Mixer (Welcome Session)** **https://monash.zoom.us/j/89526888008?pwd=dlU0cGVmZU96VGxpcWRqNzhRYXJLdz09** ***Chair: Rhiannon Boseley; Co-Host: Andrew Clulow***		

Friday 20 November - Day 2 Morning Sessions

9:00 – 10:00 **Zoom Webinar Room**	**Plenary 3** **2020 Australian Synchrotron Lifetime Contribution Medal,** **Prof Peter Lay, University of Sydney** **#296** *Adventures in Biomedical Research Through Synchrotron Science* https://monash.zoom.us/j/82641794912?pwd=azYvSzJ4WmlEMVErdVVtOUR0U3VyQT09 ***Chair: Marta Krasowska*** ***Co-Hosts: Chris McNeill, Andrew Clulow***		
Zoom Meeting Room	**Session 10** https://monash.zoom.us/j/82339971906?pwd=eTkxaGtxM2c5K2VKV0w5UlZxTFdvZz09	**Session 11** https://monash.zoom.us/j/86211109085?pwd=STV1ZDZQWlljZlZDTWdYM2VPWEF2dz09	**Session 12** https://monash.zoom.us/j/87464388264?pwd=SG1zVGJ1YlRzdDhQUmFvb3lRaFJpQT09
	Chemistry, Catalysis and Soft Matter ***Chair: Marta Krasowska*** ***Co-Host: Andrew Clulow***	**Advanced Materials and Hard Matter** ***Chair: Chris McNeill*** ***Co-Host: David Beattie***	**Earth, Atmosphere and Environment** ***Chair: Ryo Sekine*** ***Co-Host: Bettina Richen***
10:00 – 10:30 **Invited Speakers**	**Dr Leonie van 't Hag** **#281:** *Protein-Lipid interactions and protein structures in multi-component systems*	**A/Prof Amy Marschilok** **#286:** *Energy dispersive X-ray diffraction for in-Situ and operando characterization of electrochemical energy storage systems*	**A/Prof Brendan Choat** **#280:** *Non-invasive imaging of hydraulic function in leaves, stems and roots*
10:30 – 10:50	**Charlotte Conn** **#216:** *Cubosomes for the delivery of biopharmaceuticals*	**Wenchao Zhang** **#207**: *Materials and interfacial design dor advanced potassium ion storage*	**Andrew Stevenson** **#233**: *Micro-Computed Tomography (MCT): a BRIGHT new beamline at ANSTO/Australian Synchrotron*
10:50 – 11:10	**Andrew Clulow** **#183:** *Pulling milk lipids apart and putting them back together again – a self-assembly approach*	**Xin Fu Tan** **#178**: *Visualisation of the rapid Cu6Sn5 lithium-ion battery anode fabrication process via real-time X-ray imaging*	**Han Weng** **#217**: *Soil carbon research from past, present and future using synchrotron-based techniques*
11:10 – 11:30	**Andrew Martin** **#229:** *Fluctuation x-ray scattering of self-assembled lipids, colloidal particles and liquids*	**Patrick Adams** **#241**: *Using the pair angle distribution function for analysing protein structure*	**Mark Tobin** **#197**: *Latest developments and capabilities at the Infrared Microspectroscopy Beamline*
11:30 – 11:50	**Jack Binns** **#244***: Separating macro- and nano-structural effects in intensity correlation measurements of self-assembled lipid materials*	**Santosh Panjikar** **#237:** *Data evaluation on the fly: Auto-Rickshaw at the MX beamlines of the Australian Synchrotron*	**Karina Khambatta** **#191**: *"Wax On – Wax Off" using Infrared Reflectance for minimally invasive in vivo monitoring of changes in leaf epicuticular waxes*

11:50 – 12:50	**Lunch break**		
Friday 20 November - Day 2 Afternoon Sessions			
12:50 – 1:35 **Zoom Webinar Room**	**Plenary 4** **2020 Australian Synchrotron Research Award** **Dr Wei Kong Pang, University of Wollongong** ***#295:*** *Synchrotron-based X-ray diffraction and spectroscopy for metal-ion battery material studies #295* https://monash.zoom.us/j/84481804906?pwd=MUlKRkRHNGFSWHNYYkNkOUs0Qk5IQT09 ***Chair: Charlotte Conn*** ***Co-Hosts: Chris McNeill, Andrew Clulow***		
1:35 – 2:05 **Zoom Webinar Room**	**2020 Australian Synchrotron Stephen Wilkins Medal** https://monash.zoom.us/j/84481804906?pwd=MUlKRkRHNGFSWHNYYkNkOUs0Qk5IQT09 (***same as Plenary 4***) ***Chair: Andrew Peele*** ***Co-Hosts: Chris McNeill, Andrew Clulow***		
2:05 – 2:35 **Zoom Webinar Room**	**2020 Town Hall Meeting** https://monash.zoom.us/j/86734381890?pwd=VVZ0MkZOYmx4Y0xYMS9rLy9xa003dz09 ***Chair: Marta Krasowska*** ***Co-Hosts: Chris McNeill, Andrew Clulow***		
2:35 – 3:05	**Coffee break**		
Zoom meeting room	**Session 13** https://monash.zoom.us/j/85949263819?pwd=dE5BWUJKSVFpRmpiRVV3RmdPVnpiQT09	**Session 14** https://monash.zoom.us/j/89583197316?pwd=a0czRWxYWUwrODZ2WnlwTzAreENxdz09	**Session 15** https://monash.zoom.us/j/83996327849?pwd=QlpKTDdFZ0JybVBvemhUVG1YZU12dz09
	Chemistry, Catalysis and Soft Matter ***Chair: Andrew Clulow*** ***Co-Host: Marta Krasowska***	**Life Science and Structural Biology** ***Chair: Sherry Mayo*** ***Co-Host: Bettina Richen***	**Manufacturing, Engineering and Cultural Heritage** ***Chair: Jack Binns*** ***Co-Host: David Beattie***
3:05 – 3:35 **Invited Speakers**	**A/Prof Patrick Spicer** **#287:** *Complex fluids and simple experiments - What could we do?*	**Dr David Thal** **#285:** *Structural studies of G protein-coupled receptors – implications for drug discovery*	**Dr Annette Dowd** **#291:** *Jumping molecular crystals: the role of molecular vibrations*
3:35 – 3:55	**Lester Barnsley** **#199:** *Experiments on the high-flux BioSAXS beamline: opportunities for dynamic studies of soft matter systems and advanced materials*	**Stephanie Gras** **#193**: *An investigation of the T cell response against viruses through a structural lens*	**Rhiannon Boseley** **#189**: *Using Synchrotron sourced microscopy to explore fingermark chemistry*

3:55 – 4:15	**Kurt Ristroph** **#192:** *Internal liquid crystal structures in nanocarriers containing drug hydrophobic ion pairs dictate drug release*	**Srinivasan Sundararaj** **#220**: *Structural plasticity between homo and heterodimeric IRF4-DNA Interactions*	**Jitraporn Vongsvivut** **#204**: *Synchrotron macro ATR-FTIR: where we are and what's next for live-cell measurement*
4:15 – 4:35	**Khandokar Sadique Faisal** **#195:** *New insights into the self-assembly of amphiphilic poly(ethylene glycol-b-caprolactone) diblock copolymers in aqueous solution*	**Naveen Vankadari** **#208**: *Molecular interplay between SARS-CoV-2 and human proteins for viral activation and entry, potential drugs and scope of new therapeutics*	**Kai-En Chen** **#177**: *Macrocyclic peptides as the novel chemical probes for modulating the function of the Retromer endosomal trafficking complex*
4:35 – 4:55	**Stephanie MacWilliams** **#245:** *Effect of emulsifier type on interfacial crystallisation*	**Shadi Maghool** **#223:** *Structural characterisation of mitochondrial complex IV assembly factors*	**Gary Ruben** **#242:** *Full-field tomography with scattered X-rays*
4:55 – 5:15	**Damien Sebben** **#238:** *The effect of surfactant type on the secondary crystallisation of milk fat at the oil-water interface*	**Eleanor Campbell** **#234:** *COVID-19 research at the MX Beamlines*	**Nathalia Dos Santos** **#222:** *Further insights into the effect of pH on the fluorescence and structure of green fluorescent protein (GFP)*
5:15 – 5:30 **Zoom Webinar room**	**Final Remarks, Prizes and Close** https://monash.zoom.us/j/81568154315?pwd=dFRQejl5NW94Vzd6T1lEYSt6RElQQT09 ***Chair: Michael James*** ***Co-Hosts: Chris McNeill, Andrew Clulow***		