16:00-20:00 Registration desk open

18:00-19:30 Halls JK
Opening Ceremony Welcome Mixer

19:30-21:00 PL-1 Hall D
Special Plenary Lecture
Chair: Prof. Peter Colman, The Walter and Eliza Hall Institute of Medical Research
Multi-crystal Native SAD Analysis of Macromolecular Structure
Prof. Wayne Hendrickson, Columbia University

Monday 3rd December

08:00-19:30 Registration desk open

08:45-09:45 PL-2 Hall D
Plenary 2
Chair: Prof. Keith Nugent**,** The University of Melbourne
Protein Nano-crystallography with X-ray laser pulses
Prof. Henry Chapman, CFEL DESY

09:45-10:15 Halls JK
Morning tea

10:15-12:15 Parallel Sessions 1

MS-1 - Hall D
Hot structures in Biology
Chairs:
Dr Maria Hrmova, University of Adelaide
Prof. Ian Menz, Flinders University

Invited Speakers: (25+5min presentations)
Structural basis for chaperone-histone interactions
Prof. Ruiming Xu, Chinese Academy of Sciences

Structural Biology of Nuclear Hormone Receptors
Prof. Eric Xu, Van Andel Research Institute

Structure and coupling mechanism of respiratory complex I
Prof. Leo Sazanov, Medical Research Council Mitochondrial Biology Unit

3313 (10+5min Presentation)
The Structural explanations for SNARE selection during clathrin-mediated endocytosis
Dr David Owen, University of Cambridge

3370 (10+5min Presentation)
The Crystal Structure of the Signal Recognition Particle in Complex with its Receptor
Dr Sandro Fernandes Ataide, The University of Sydney

10:15- **MS-2 -** MR1
12:15 **Metallo-organic structural chemistry**
Chairs:
Dr Chris Sumby, The University of Adelaide
Dr Christian Doonan, The University of Adelaide

Invited Speakers: (25+5min presentations)
Small cyano anions as versatile molecular building blocks
Prof. Stuart Batten, Monash University

Reactivity and Dynamics in Coordination Polymeric Networks
Prof. Jagadese J. Vittal, National University of Singapore

3535 (10+5min Presentation)
Crystalline Porous Molecular Solids
Dr. Chrisian Doonan, The University of Adelaide

3220 (10+5min Presentation)
A Stimuli Responsive System of Anion-Binding Fe4L6 Cages
Dr Jack Clegg, The University of Queensland

3102 (10+5min Presentation)
Heterotopic Ligands in Discrete and Polymeric Coordination Compounds
Dr David Turner, Monash University

3034 (10+5min Presentation)
Crystallographic studies of metal[Cu(II), Co(II)] adenine complexes
Mr Yogesh Patil, Indian Institute of Science

10:15- **MS-3 -** MR2
12:15 **Diffraction Physics and applications of crystallography**
Chairs:
Prof Takashi Kamiyama, IMSS/KEK
Dr Andrew Stevenson, CSIRO

Invited Speakers: (25+5min presentations)
X-ray focusing using dynamical diffraction from curved crystal resonator
Prof. Shih-Lin Chang, National Synchrotron Radiation Research Center

Recent challenges of MEM electrostatic potential visualization using SR diffraction data
Prof. Masaki Takata, SPring-8/RIKEN

3153
The current status of versatile neutron diffractometer iMATERIA at J-PARC
Prof Toru Ishigaki, Ibaraki University

3274
Electron vortex pair produced with a nano-fabicated holographic grating
Prof Masaya Uchida, Saitama Institute of Technology

3321
The battle of signal vs noise, and how to tip the balance in your favor
A/Adjunct Prof James Holton, University of California
3340
Determining Changes in Atomic and Electronic Structure of SrTiO3 Under the Influence of an External Electric Field
Prof Andrew Johnson, University of Western Australia

12:15-13:30 **Halls JK**
Lunch

12:15-13:30 SCANZ meeting (MR2)

1300-1500 AsCA Officers Meeting (MR1)

13:30-15:30 Halls JK
Poster Session 1- Even numbers

15:30-16:00 **Halls JK**
Afternoon tea

16:00-18:00 Parallel Sessions 2

MS-4 - Hall D
Membrane Proteins
Chairs:
Prof. Satoshi Murakami, Tokyo Institute of Technology
Dr. Jacqui Gulbis, The Walter and Eliza Hall Institute of Medical Research

Invited Speakers: (25+5min presentations)
Membrane Protein Structures from a Structural Genomics Approach
Prof. Wayne Hendrickson, Columbia University

Crystallization of membrane proteins using functional antibody fragments
Prof. Takeshi Murata, Chiba University

Electron crystallographic investigations of structures of membrane proteins and membrane associated proteins
Prof. Alok Mitra, University of Auckland

3130 (10+5min Presentation)
The structure of yeast Ndi1 reveals overlapping binding sites for water- and lipid-soluble substrates
Dr Megan Maher, La Trobe University

3040 (10+5min Presentation)
The membrane embedded H+-translocating pyrophosphatase
Prof. Yuh Ju Sun, National Tsing Hua University

16:00- **MS-5** – MR1
18:00 **Non-ambient and in-situ Diffraction Studies**
Chairs:
Prof. Hiroshi Fukazawa, JAEA
Prof. Erich Kisi, University of Newcastle

Invited Speakers: (25+5min presentations)
In-situ diffraction techniques for studying hydrogen storage materials under high hydrogen pressure
Prof. Evan Gray, Griffith University

High-pressure neutron diffraction studies of minerals and new beamline at J-PARC
Dr Asami Sano, Japan Atomic Agency

3206 (10+5min Presentation)
High pressure structure and magnetism of one 1-D molecular magnetic material
Dr Jey-Jau Lee, National Synchrotron Radiation Research Center

3212 (10+5min Presentation)
In situ synchrotron studies of carbon dioxide corrosion of mild steel
Bridget Ingham, Industrial Research Ltd

3413 (10+5min Presentation)
Reversible, pressure-induced transformation of the lanthanoid coordination geometry in a highly compressible crystalline solid
Dr Samuel Duyker, Australian Nuclear Science and Technology Organisation

3391 (10+5min Presentation)
Synchrotron and neutron powder diffraction study of incommensurate modulated Ta2O5•Al2O3
Siegbert Schmid, The University of Sydney

16:00- **MS-6** – MR2
18:00 **Synchrotron and neutron sources, instrumentation and application – *Sponsored by ANSTO***
Chairs:
Prof. Sung-Min Choi, KAIST
Prof. Garry McInytre, Australian Nuclear Science and Technology Organisation

Invited Speakers: (25+5min presentations)
Hard and Fast: developments of diffraction capability at the AS and beyond
Dr Kia Wallwork, Australian Synchrotron Co Lrd

Polarized Neutrons for Advanced Materials Research
Prof. Kazuhisa Kakurai, Japan Atomic Energy Agency

3362 (10+5min Presentation)
Installation and First Beam Tests of the Neutron Image Plate Diffractometer (Bio-C) at HANARO
Shin Ae Kim, Korea Atomic Energy Research Institute

3342 (10+5min Presentation)
Experimental determination of spin dependent electron density by joint refinement of X-ray and polarized neutron diffraction data
Prof. Claude Lecomte, Universite de Lorraine and CNRS

3360 (10+5min Presentation)
Scientific capabilities of the CMCF beamlines at the Canadian Light Source
Dr Pawel Grochulski, Canadian Light Source

3375 (10+5min Presentation)
Development of a New Special Environment Powder Neutron Diffractometer, SPICA
Masao Yonemura, High Energy Accelerator Research Organisation (KEK)

19:20-21:00 Session 3

MS-6B – Hall D
Diffraction imaging and XFELS
Chairs:
Prof. Hitoshi Tanaka, RIKEN
Prof. Keith Nugent, The University of Melbourne

Invited Speakers: (25+5min presentations)
Opportunities for diffractive imaging at the Linac Coherent Light Source
Dr Garth Jonathan Williams

Coherent Diffractive Imaging at SPring-8 and SACLA
Prof. Yukio Takahashi

Protein crystallography beyond radiation damage limits
Prof. Henry Chapman

3226
Continues X-ray diffractive filed in protein nanocrystallography
Dr Ruben Dilanian, The University of Melbourne

3248
The dynamic Jahn-Teller distortion of C60 induced and observed by interaction with an intense femtosecond X-ray laser pulse
Dr Andrew Martin, The University of Melbourne

Tuesday 4th December

08:00-18:30 Registration desk open

08:45-09:45 KN-1
Hall D
Keynote 1
Chair: Prof. Jenny Martin, University of Queensland
The Natural Killer Cell Receptor 3DL1 – Looking for missing self
Dr Julian Vivian, Monash University

08:45-09:45 KN-2
MR1&2
Keynote 2
Chair: Prof. Ray Withers**,** Australian National University
Exploring the Hierarchy and Architecture of Solid Solutions with Atom Probe Microscopy
Prof. Simon Ringer, The University of Sydney

09:45-10:15 Halls JK
Morning Tea

10:15-12:15 Parallel Sessions 4

MS-13 – Hall D
Drug discovery
Chairs:
Dr Kam Zhang, RIKEN
Dr Tom Peat, CSIRO

Invited Speakers: (25+5min presentations)
Structural insights into the mechanism of action of a BACE1 antibody
Dr Weiru Wang, Genentech Inc.

The discovery of Non-ATP site inhibitors of kinases
Dr Sandra Jacob, Novartis Institutes for Biomedical Research

Structure-based design of highly selective phosphodiesterase inhibitors for CNS indications
Dr Jay Pandit, Pfizer Inc

3025 (10+5min Presentation)
BHRF1 inhibition with peptido-mimetics
Dr Sofia Caria, La Trobe University

3035 (10+5min Presentation)
Biologically active 1, 9-Pyrazoloanthrone Derivatives towards Inhibition of c-JNK
Mr Durga Prasad Karothu, Indian Institute of Science

10:15- **MS-8** – MR2
12:15 **Energy related materials**
Chairs:
Prof. Myung Hyun Paik Suh, Seoul National University
Dr Vanessa Peterson, Australian Nuclear Science and Technology Organisation

Invited Speakers: (25+5min presentations)
Functionalization of metal-organic frameworks for potential applications
Prof. Hongcai (Joe) Zhou, Texas A&M University

Fast ion transport and structural stability of solid lithium ion conductors: insight from combining in situ diffraction with bond-valence based simulations
A/Prof. Stefan Adams, National University of Singapore

2989 (10+5min Presentation)
Structure, thermal and physical properties of spinel type LiMnTiO4
Ms Denissa Murphy, The University of Sydney

3047 (10+5min Presentation)
Oxide-ionic conduction and the (3+3)-D incommensurately modulated structure of Type II Bi2O3–Nb2O5
A/Prof. Chris Ling, The University of Sydney

3291 (10+5min Presentation)
Repeated gas adsorption in zeolites for solar cooling applications investigatied by Modulation Enhanced Diffraction
Prof. Davide Viterbo, Universitá del Piemonte Orientale

3418 (10+5min Presentation)
Materials Discovery of Dyes for Dye-Sensitized Solar Cells: Prediction, Validation and Rationalisation
Prof. Jacqueline Cole, University of Cambridge

10:15- **MS**-9 – MR2
12:15 **Dynamic aspects of molecular and solid state crystals**
Chairs:
Prof. Masaki Takata, SPring-8/RIKEN
A/Prof. Chris Ling, The University of Sydney

Invited Speakers: (25+5min presentations)
Simultaneous Measurements of Picosecond Lattice and Charge Dynamics in Co-Fe Cyanides
A/Prof. Yutaka Moritomo, University of Tsukuba

Simulation of disorder and dynamics - from minerals to fuel cells
Prof. Julian Gale, Curtin University

Atomic Dynamics using Sychrotron Radiation: Phonon Softening in Multiferroic EuTiO3
Dr Alfred Baron, RIKEN SPring-8 Center

3259 (10+5min Presentation)
Pseudo-polymorphic Phase Transition of Pharmaceutical Crystals Revealed by SDPD Method
Dr Hidehiro Uekusa, Tokyo Institute of Technology

3221 (10+5min Presentation)
Diffraction and spectroscopic studies on the pyrochlore-fluorite phase transformation in Ln2Hf2O7 (Ln = lanthanide)
Dr Peter Blanchard, The University of Sydney

12:15-13:30 **Halls JK**
Lunch

12:30-13:30 **Workshop** – Hall D
Phaser Crystallographic Software run by Dr. Airlie McCoy

13:00-15:00 AsCA Council Meeting (MR1)

13:30-15:30 Halls JK
Poster Session 2- Odd numbers

15:30-16:00 **Halls JK**
Afternoon Tea

16:00-18:00 Parallel Sessions 5

MS-10 – Hall D
Macromolecular assemblies (Viral proteins)
Chairs:
Prof. Cheng Yang, Tianjin International Academy of Biotechnology and Medicine
Dr Mike Lawrence, The Walter and Eliza Hall Institute of Medical Research

Invited Speakers:
(20+5min presentations)
Structural and functional analysis of the innate immune signaling adaptor protein STING and its potential for drug discovery
Prof. Zhijie Liu, Chinese Academy of Sciences

(20+5min presentations)
The molecular organisation of viral in vivo crystals: arms and armours of insect poxviruses
Dr Fasseli Coulibaly, Monash University

(15+5min presentations)
Crimean–Congo hemorrhagic fever virus nucleoprotein reveals endonuclease activity in bunyaviruses
A/Prof. Zhiyong Lou, Tsinghua University

(15+5min presentations)
Probing Allostery Through DNA - Single molecule and structural studies on several DNA-protein complexes
Prof. Xiao-Dong Su, Peking University

3273 (10+5min Presentation)
Update on the chemokine binding protein from orf virus
Prof. Kurt Krause, University of Otago

3123 (10+5min Presentation)
Role of Domain swapping interactions in the Stationary Phase Survival Protein SurE from Salmonella typhimurium
Yamuna Kalyani Mathiharan, Indian Institute of Science

16:00-18:00 **MS-11** – MR1
Chemical crystallography
Chairs:
Prof. Yu Wang, National Taiwan University
Prof. Stuart Batten, Monash University

Invited Speakers: (25+5min Presentations)
Crystal Structures of Mesoporous Inorganic Frameworks
Prof. Sue-Lein Wang, National Tsing Hua University

Multi-bistable metal complexes
Prof. Hiroki Oshio, University of Tsukuba

3154 (10+5min Presentation)
In-situ Control of Photochromism of Hybrid Type Cobalt Complexes using Crystalline-State Photoisomerization
Dr Akiko Sekine, Tokyo Institute of Technology

3433 (10+5min Presentation)
Application of the Structure Correlation Principle to Concerted and Stepwise retro Diels Alder Reactions
A/Prof. Jonathan White, University of Melbourne

3372 (10+5min Presentation)
Accurate Chemical Characterization – Fascinating Discoveries and Proofs
Dr Alison Edwards, Australian Nuclear Science and Technology Organisation

3134 (10+5min Presentation)
Crystal Packing Predictions: which are the dominant interactions?
Dr Graeme Gainsford, Industrial Research Limited

16:00-18:00 **MS-12** – MR2
Structural proteomics and bioinformatics
Chairs:
Prof. Haruki Nakamura, Osaka University
Prof. Bostjan Kobe, University of Queensland

Invited Speakers: (20+5min Presentation)
Structural genomics of mobile gene elements: Defining protein functions engaged in lateral gene transfer
A/Prof Bridget Mabbut, Macquarie University

Structures of autophagic molecules for autophagosome formation
Prof Hyun Kyu Song, Korea University

Changes in protein-protein interface brought about by complex formation
Prof Pinak Chakrabarti, Bose Institute

Using informatics to straddle the expertise gap in protein crystallogenesis
Dr Janet Newman, CSIRO

3299 (15+5min Presentation)
Error estimation guided rebuilding of de novo models increases the success rate for ab initio phasing
Dr Kam Zhang, RIKEN

18:00- Awards Ceremony
19:30 Poster Prizes

Wednesday 5th December

08:00-17:30 Registration desk open

08:45-09:45 KN-3
Hall D
Keynote 3
Chair: Prof. John Carver, University of Adelaide
In situ photo-crystallography discovers optoelectronic applications
Prof Jacqueline Cole, University of Cambridge

KN-4 MR1&2
Keynote 4
Chair: Dr Alison Edwards, Australian Nuclear Science and Technology Organisation
Polar nanoregions and diffuse scattering in the relaxor ferroelectrics
Richard Welberry, Australian National University

09:45-10:15 Hall JK
Morning Tea

10:15-12:15 Parallel Session 6

MS-7 – Hall D
Enzymes
Chairs:
Prof. Zihe Rao, Nankai University/Tsing Hua University
Dr Chris Squire, The University of Auckland

Invited Speakers: (25+5min Presentations)
A tale of two cooperative mechanisms of phosphagen kinases: dimeric single-domain and monomeric double-domain
Dr Sheng Ye, Chinese Academy of Sciences

The X-ray Crystal Structure Of Full Length Human Plasminogen
Prof. James Whisstock, Monash University

3022 (15+5min Presentation)
Protein motions and CO migration following CO photolysis in haem oxygenase
A/Prof Masakazu Sugishima, Kurume University School of Medicine

3382 (15+5min Presentation)
Crystal Structure of Auxin Amido Synthetase from Cabernet Sauvignon
Dr Tom Peat, CSIRO

3163 (15+5min Presentation)
Structural analysis of the electron transfer complex between Ferredoxin and Ferredoxin-dependent glutamate synthase
Dr Kanako Shinmura, Osaka University

10:15- **MS-14** – MR1
12:15 **Small angle scattering**
Chairs:
Prof Moonhor Ree, Pohang Institute of Science
Dr Charlotte Conn, CSIRO

Invited Speakers: (25+5min Presentations)
Small angle X-ray scattering studies of high-energy ion tracks
Prof. Patrick Kluth, Australian National University

Investigating the Nanoscale Structure in Self-Assembled Polymers, Films and Composites
Prof. Kevin Jack, Centre for Microscopy and Microanalysis

3358 (10+5min Presentation)
High Throughput Biological SAXS for the Home Laboratory
Ms Angela Criswell, Rigaku

3396 (10+5min Presentation)
The solution structure of full length human ezrin by SAXS and protein crystallography
Dr Anthony Duff, Australian Nuclear Science and Technology Organisation

3085 (10+5min Presentation)
The regulatory role of Munc18 proteins in SNARE mediated membrane fusion
Dr Andrew Whitten, University of Queensland

2980 (10+5min Presentation)
The Role of Small-Angle X-Ray and Neutron Scattering Techniques in Understanding Starch Structure
Elliot Gilbert

10:15- **MS-15** – MR2
12:15 **Crystal growth and engineering**
Chairs:
Prof. Ashwini Nangia, University of Hyderbad
Dr Janet Newman, CSIRO

Invited Speakers: (25+5min Presentations)
Evaluation of Crystal Form using CSD derived Full Interaction Maps
Dr Peter Wood

Engineering proteins and complexes for enhanced crystallizability
Prof. Zygmunt S.Derewenda, University of Virginia

3365 (15+5min Presentation)
An Approach to Crystallizing Proteins by Metal-mediated Synthetic Symmetrization
Ms Angela Soriaga, UCLA

3427(15+5min Presentation)
Solvothermal Synthesis of Mixed Imidazolate-Benzimidazolate MOFs
Prof. Ian Williams, HKUST

3122 (15+5min Presentation)
X-ray transparent plates for high throughput protein crystallization and diffraction screening
Prof Robert Thorne, Cornell University

12:15-13:30 **Halls JK**
Lunch

12:15-14:15 SCANZ Members AGM (MR2)

13:00-15:00 AsCA Council Meeting 2 (MR1)

14:10-15:30 Hall D
AsCA/SCANZ Rising Stars Symposium MS

15:30-16:00 **Halls JK**
Afternoon Tea

15:45-16:00 Responding to new era of crystallographic-based science and changes in its global distribution
Prof. Samar Hasnain, University of Liverpool

16:00-17:00 **Hall D**
PL-3
Plenary 3
Chair: Dr Chris Sumby, University of Adelaide

Invited Speaker:
Metal Azolate Frameworks: from Crystal Engineering to Functional Materials
Prof. Xiao-Ming Chen, Sun Yat-Sen University

17:00-17:30 Hall D
Closing Ceremony

18:30-23:00 Conference Dinner, National Wine Centre of Australia