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| **Statistical Mechanics of Soft Matter (SM)^2 Conference draft program** | | | | |
| **Date: Wednesday Dec 3 - Friday Dec 5, 2025** | | | | |
| **Location: RMIT City Campus, Building 80, Level 1, Room 2 (Rm 80.01.002)** | | | | |
| **Wednesday** | | | | |
| **Start time** | **Duration/min** | **Event** | **Presenter** | **Title** |
| 10:00 | 10 | Opening remarks | Peter Daivis | |
| 10:10 | 75 | Talk 1 & Discussion | Saffron Bryant | Cryopreservation: How different soft matter states can influence biological survival at very low temperatures |
| 11:25 | 30 | Morning tea | | |
| 11:55 | 75 | Talk 2 & Discussion | Benjamin Dalton | Reaction coordinates and memory kernels: the basis of coarse-grained dynamic protein folding models |
| 13:10 | 60 | Lunch | | |
| 14:10 | 75 | Talk 3 & Discussion | Brendan Dyett | The preparation and characterisation of lipid nanoparticles for drug delivery applications |
| 15:25 | 30 | Afternoon tea | | |
| 15:55 | 75 | Talk 4 & Discussion | Tu Le | Machine learning for functional materials |
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| **Thursday** | | | | |
| **Start time** | **Duration/min** | **Event** | **Presenter** | **Title** |
| 9:00 | 10 | Opening remarks | | |
| 9:10 | 20 | Talk 1 | Karl Travis | High pressure closure of melting and freezing behaviour |
| 9:30 | 20 | Talk 2 | Sunil Kumar | Transitions in a confined system of soft self-propelled particles |
| 9:50 | 20 | Talk 3 | Kirill Glavatskiy | Thermodynamics of ultra-fast processes |
| 10:10 | 20 | Talk 4 | Carmelo Riccardo Civello | Bridging Experiment and Simulation: Direct Comparison of Boundary Slip at Matched Shear Rates Using TTCF-Enhanced NEMD |
| 10:30 | 30 | Morning tea | | |
| 11:00 | 20 | Talk 5 | Billy Todd | Flow symmetry and slip dependence on the approach to steady-state for boundary driven flows |
| 11:20 | 20 | Talk 6 | Kannan Ridings | Self-assembly and transition mechanisms of trimer- triblock Janus particles interacting in a Lennard-Jones fluid |
| 11:40 | 20 | Talk 7 | Benjamin Dalton | Solvent–Solute Interplay and the Dynamics of Complex Liquids |
| 12:00 | 20 | Talk 8 | Mung Suan Pau Duhlian | Phase Field Simulation of Stick-Slip Flow Incorporating Shear Melting and Wall Slip |
| 12:20 | 90 | Lunch & digital posters | | |
| 13:50 | 20 | Talk 9 | Rishabh More | To roll or not to roll - the yield stress in dilute soft particulate gels |
| 14:10 | 20 | Talk 10 | Holly Baldock | Revisiting the access conductance of a nanopore in a charged membrane |
| 14:30 | 20 | Talk 11 | Jordan Hill | Quantitative phase field modelling of planar ice growth in saccharide solutions |
| 14:50 | 20 | Talk 12 | Pratyasha Bhardwaj | Multiscale Modeling to Study Morphology Evolution in Polymer nanocomposites |
| 15:10 | 30 | Afternoon tea | | |
| 15:40 | 20 | Talk 13 | Gerd Schroeder-Turk | Like the Gyroid, but nowhere near as favourable: Amorphous minimal surface sponges |
| 16:00 | 20 | Talk 14 | Matteo Baggioli | Topological and geometrical nature of plastic rearrangements in amorphous solids |
| 16:20 | 20 | Talk 15 | Caius Robertson | Field Independent Transient Time Correlation Function: Increasing Efficiency In Predicting Properties of Fluid Flow Systems In The Linear Regime |
| 16:40 | 20 | Talk 16 | Bill van Megen | PHONONS, DEGENERACY AND STRETCHING OF TIME CORRELATION FUNCTIONS OF SUSPENSIONS |
| 17:00 | 30 | Digital posters | | |
| 17:30 | 80 | Free time | | |
| 18:50 | | Dinner | | |
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| **Friday** | | | | |
| **Start time** | **Duration/min** | | **Presenter** | **Title** |
| 9:00 | 10 | Opening remarks | | |
| 9:10 | 20 | Talk 17 | Ravi Jagadeeshan | Linear Viscoelasticity of Dilute Solutions of Semiflexible Polymers |
| 9:30 | 20 | Talk 18 | Christopher Bolton | Non-equilibrium interfacial diffusion of anisotropic colloids |
| 9:50 | 20 | Talk 19 | Asaph Widmer-Cooper | How Ligand Structure affects the Colloidal Stability of Apolar Nanoparticles |
| 10:10 | 20 | Talk 20 | Huyen Pham | Local Atomic Re-arrangements in Shear-Bands of Deformed Metallic Glasses via Nano-Diffraction |

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| 10:30 | 30 | Morning tea | | |
| 11:00 | 20 | Talk 21 | Chris Bradly | Lattice polymers subject to a force |
| 11:20 | 20 | Talk 22 | Prabhakar Ranganathan | From Formal Closure to Scaling-Based Microstructural Models for the Rheology of Unentangled Polymer Solutions |
| 11:40 | 20 | Talk 23 | Ellie Hajizadeh | Defeating Superbugs: Molecular Dynamics Insight into Mode of Action of SNAPPs |
| 12:00 | 20 | Talk 24 | Nick Dashti | From Flow to Rigidity: Percolation in Sheared Granular Media |
| 12:00 | 90 | Lunch & digital posters | | |
| 13:30 | 20 | Talk 25 | Peter Harrowell | Macroscopic Boundary Conditions from Microscopic Coupling: Flow in the Confined Rough Sphere Fluid |
| 13:50 | 20 | Talk 26 | Gary Bryant | Characterisation of non-spherical particles in suspension using scattering techniques |
| 14:10 | 20 | Talk 27 | Andrew Martin | The pair-angle distribution function: a sensitive measure of amorphous or disordered structures |
| 14:30 | 20 | Talk 28 | Michael Hassett | Molecular Dynamics simulations of discotic liquid crystal HOOT for pair-angle distribution function (PADF) comparison |
| 14:30 | 30 | Afternoon tea | | |
| 15:00 | 20 | Talk 29 | Stephen Sanderson | Sllod: a can of worms |
| 15:20 | 20 | Talk 30 | Ehsan Kamali Ahangar | Shear-dependent structure and rheology of multi-chain block copolymer systems |
| 15:40 | 10 | Concluding remarks | | |
| 15:50 | | Finish | | |
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| **Digital posters** | | | | |
| | | Digital Poster 1 | Sreehari Batni Ravindranath | Non-coordinating co-solvents enhances performance of salt-concentrated Ionic Liquid Electrolytes |
| | | Digital Poster 2 | Amelia Liu | Characterising plastic defects in a glass with a Burgers vector measurement from scanning small-beam diffraction |
| | | Digital Poster 3 | Mathushan Sathiyamoorthy | Molecular Dynamics Study of Glass Formation in Au-based Metallic Nanoparticles |
| | | Digital Poster 4 | Jake Willett | A Molecular Dynamics Study on the Curing Behaviour of Dental Resin Mixtures |
| | | Digital Poster 5 | Nicolas de Souza | QENS at ANSTO : Opportunities for probing equilibrium fluctuations at the nanoscale |
| | | Digital Poster 6 | Ibrahim Al Azki | Investigating the role of network topology in the dynamics and performance of reservoir computing systems |