

## Day 1 – Monday 9<sup>th</sup> September 2024

09:30 – 10:00 Registration

10:00 – 10:10 Welcome Speech

*Professor Rachel  
Smith*

### **Theme 1: Particle Dynamics and Interactions**

10:10 – 10:40 Constrained Viscous Sintering of Spherical Particles: An Experimental Study

*Professor Chuan-Yu  
Wu*

10:40 – 11:10 Experimental and Numerical Analyses of Overtaking and Cooperative Behaviours in Disks Falling in a Low-Density Particle Bed

*Professor Mikio  
Yoshida*

11:10 – 11:55 **Coffee Break & Poster Session**

11:55 – 12:25 Transition of Fluidization Behaviour Induced by External Mechanical Vibration

*Professor Yoshihide  
Mawatari*

12:25 – 12:55 Attrition of Particulate Solids

*Professor Mojtaba  
Ghadiri*

12:55 – 14:00 **Lunch**

### **Theme 2: Modelling and Simulation of Particle Systems**

14:00 – 14:30 Recent Breakthroughs in the Discrete Element Method for Industrial Applications

*Professor Mikio  
Sakai*

14:30 – 15:00 A New DEM-CFD Solver for Reactive Dense Gas-Solid Flows

*Professor Takuya  
Tsuji*

15:00 – 15:45 **Coffee Break & Poster Session**

15:45 – 16:15 Universal Stress Model for Predicting and Optimizing Comminution and Mixing Processes

*Professor Arno  
Kwade*

16:15 – 16:45 Advances in Particle Tribocharging and Electrostatic Interaction Models for DEM Simulations

*Dr Alberto Di Renzo*

16:45 – 17:15 **Industry Session**

Presentations from Verder Scientific and Canty Process Technologies

18:00 – 21:00 **Workshop Dinner**

## Day 2 – Tuesday 10<sup>th</sup> September 2024

09:00 – 09:15 Arrival

### **Theme 3: Particle Processing and Industrial Applications**

09:15 – 09:45 Discrete Particle Simulation of Loose Packing Behaviour for Fine and Cohesive Granular Materials *Dr Kimiaki Washino*

09:45 – 10:15 Experimental and Numerical Analysis of Compression Processes for Batteries and Pharmaceuticals *Professor Shuji Ohsaki*

10:15 – 10:45 Prediction of Powder Mixing by DEM Surrogate Model based on Machine Learning Coupled with Stochastic Model *Dr Hideya Nakamura*

10:45 – 11:30 **Coffee Break & Poster Session**

11:30 – 12:00 Dynamic Behaviour of Wet Fluidization *Professor Raffaella Ocone*

12:00 – 12:30 Synthesis and Application of Multifunctional Iron Oxide Nanoparticles for Targeted Drug Delivery in Cancer Treatment *Dr Ali Hassanpour*

12:30 – 13:30 **Lunch**

### **Theme 4: Particle Characterisation and Advanced Analysis**

13:30 – 14:00 Bootstrap Method as a Non-Parametric Analysis *Professor Tatsushi Matsuyama*

14:00 – 14:30 Charge Mitigating Effect of ATMER 163 on Functionalised Glass Surfaces *Dr Wei Pin Goh*

14:30 – 15:00 **Coffee Break & Poster Session**

15:00 – 15:30 Evaluation of Stable/Unstable Flow on Powder Discharge Using Pressurized Fluidization *Professor Koichiro Ogata*

15:30 – 16:00 The Study of Flow Properties of Particulates at High Temperatures or Under the Effect of Other Process Conditions *Professor Massimo Poletto*

16:00 – 16:30 Study of Hollow Agglomerate Formation Through Mechanistic Understanding during Spherical Agglomeration of Battery Materials *Professor Rachel Smith*

16:30 – 16:40 **Close of Workshop** *Professor Rachel Smith*