

Call for Papers

The 5th International Symposium on Computational Particle Technology (CPT-2025)

30 Nov - 3 Dec 2025, Venue TBC, Melbourne, Australia

Understanding the fundamentals governing particle and particle-fluid flows is of paramount importance to the design, control and optimisation of particulate and multiphase processes in many industries. In the past, different measurement techniques have been developed, but there have been problems in probing the underlying physics and solving practical problems generally and reliably. Alternatively, a promising technique that can overcome these problems is computer simulation. This often involves a multiscale approach to understand phenomena at different length and time scales which, for particles, includes: (i) at the molecular/sub-particle scale to determine the interaction forces between particles, fluid and wall, and the transport behaviour between particles and/or pores; (ii) at the micro/particle scale to understand particle flow and force structures in relation to different flow conditions; (iii) at the meso/macro scale to formulate governing equations, constitutive relations and boundary conditions for continuum-based process modelling and simulation; and (iv) at the process equipment scale to quantify flow and process performance for control and optimisation. Such multiscale approaches can also be coupled with the emerging big data and AI technologies. In the past two decades or so, with the rapid development of computer technology, many advanced computational technologies, either discrete or continuum-based, have been developed and applied to tackle problems of various types.

The fifth International Symposium on Computational Particle Technology will follow the spirit of the first one in Suzhou in March 2016, the second one in Melbourne in Dec 2018, the third one in Suzhou in Nov 2021, as well as the fourth one in Nanjing in Jun 2024. It will be held in Melbourne on 30 Nov - 3 Dec 2025. It aims to provide a forum to discuss the frontier and challenging problems in the modelling and simulation of complex particulate and multiphase processes, covering a wide spectrum from fundamental research to industrial application. A great emphasis will also be placed on the collaboration between academic research and engineering applications. This will be achieved by extending invitation to engineers and academics across the broad engineering disciplines globally. Another great emphasis will be placed on social activities, this will not only generate more opportunities for exchanging ideas and building connections, but also create an outstanding atmosphere for collaboration in particle research worldwide.

This symposium will also be held in conjunction with The 16th International Conference on Computational Fluid Dynamics in the Minerals and Process Industries (CFD-2025, website: <http://www.cfd.com.au/cfdconf>). One registration is valid for both conferences.

Key Dates and Venue:

Abstract submission: CPT-2025 abstracts should be submitted to arc.hub.secretariat@monash.edu before 31 August 2025. A submission should include an abstract and short biography (of its presenter), on a single A4 page and prepared using MS Words. **Notification of abstract acceptance:** before 30 September 2025

Symposium dates: 30 Nov - 3 Dec, 2025 (registration/reception on 30 Nov; meeting on 1-3 Dec)

Symposium venue: Melbourne, Australia. Specific venue TBC.

Symposium General Information:

Symposium booklet: One symposium booklet will be published at the Symposium. It includes symposium program, abstracts and biographies (of presenters).

Presentations: The symposium will include plenary, keynote, oral and poster presentations. A poster presentation may include a short oral presentation too. A few best poster awards will be given (with certificate and cash prize).

Publication: A virtual special issue will be published in Powder Technology in 2026 (note that accepted papers will be published as other papers in the journal, not necessarily in one issue). Participants are encouraged to submit their full papers after the symposium (a deadline is to be determined).

More details about symposium organisation, program, venue, and hotel accommodation are available in the website: <https://www.monash.edu/simpascpthub-congress>.



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