



## The Fifth International Conference on Damage Mechanics (ICDM5)

Date: 16th - 18th July 2025

Venue: National University of Singapore

<p><b>Mini Symposium Title</b></p>	<p>Damage and Fracture Modelling of Ultra-High Performance Fibre Reinforced Cementitious Composite</p>
<p><b>Short description on the focus of the Mini Symposium</b></p>	<p>Ultra-high performance fibre reinforced cementitious composite (UHPFRC) is emerging as a promising material for engineering applications due to its superior mechanical properties, including high strengths, low permeability, and enhanced fracture toughness. Understanding the damage and fracture behavior of UHPFRC is crucial for optimizing material design and ensuring the safety and longevity of structures, as the fracture of UHPFRC is stochastic and complex and involves many micro/meso-scale mechanisms such as fiber bending, yielding, mortar cracking, crushing, spalling, and fiber-mortar interfacial debonding. With this regard, the potential topics of this mini-symposia include, but are not limited to:</p> <ol style="list-style-type: none"> <li>(1) Damage and fracture mechanisms of UHPFRC subjected to static, dynamic, fatigue loads and so on</li> <li>(2) Stochastic behavior of UHPFRC and multiscale modelling methods.</li> <li>(3) Novel computational methods for fracture simulations of UHPFRC, such as phase-field models, peridynamics theory and discrete models.</li> <li>(4) Mechanics-based continuum damage constitutive models for UHPFRC.</li> <li>(5) High-fidelity numerical models that can reflect the stochastic evolution of micro-cracks, damage dissipation mechanisms, and complex nonlinearities of UHPFRC.</li> <li>(6) Fracture modelling of 3D-printed UHPFRC.</li> </ol>
<p><b>Organizers</b></p>	<p>Hui Zhang, North University of China Lu Hai, Leibniz Universität Hannover Yu-jie Huang, North University of China Yin Chi, Wuhan University Leong Hien Poh, National University of Singapore</p>