3 pm, Friday, 22 March 2024
E16

Advanced Multifunctional Materials and Structures - Analysing Extreme Deformation and Dynamic Behaviour using Meshless and Multiscale Methods

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Abstract: The seminar will present overview of advanced multifunctional materials and structures computational mechanics research at the Centre for Multifunctional and Composite Materials of RMIT University, Australia. Our research covers both fundamental and applied aspects of material behaviour and failure processes. This presentation will encompass computational modelling of material deformation, damage and fracture using multi-scale techniques in conjunction with mesh-less methods, novel composite materials development and damage tolerance structural optimisation. Multi-scale modelling of damage and fracture progression linking nano to macro scales and associated development of coupled computational modelling tools will be highlighted. The strengths of mesh-less methods will be illustrated with reference to both low to high-speed impact induced fractures and small to large scale problems. These include several dynamic fracture and fragmentation processes, such as hypervelocity impact fracture, nano-scale machining, large scale geo-mechanical failures (magma intrusion, caving, slope stability, etc). One of our core areas to be

All are welcome!