

## COMPUTATIONAL MODELING OF FRACTURE AND FAILURE OF MATERIALS AND STRUCTURES

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Designers of engineering structures must respond to ever increasing demands on performance in terms of safety, reliability, durability, low-cost and low-energy consumption. As new materials and new applications emerge, traditional design rules and conventional testing methods become insufficient or inapplicable, which strengthens the role of computational methods in the design process. Numerical tools can accelerate the development of new products and their optimization.

The aim of the mini-symposium is to gather academic researchers and industrial partners involved in development and application of numerical procedures and combined numerical / testing procedure for fracture and failure predictions.

### The following topics are of particular interest:

- Algorithms for crack propagation and evolving discontinuities
- Continuum damage mechanics
- Coupled experimental-computational identification
- Ductile and large-deformation fracture
- Dynamic fracture  • Failure mechanisms in forming processes
- Fracture of composites
- Fracture of nano-structures
- Fragmentation
- Interaction of fracture with heat and moisture transport
- Interpolation enrichments capturing strong discontinuities
- Micro-cracking
- Multi-scale analysis for cracks
- Objective description of localized strain, regularization methods
- Transition from damage to fracture