

The European Conference on Fracture (ECF21) June 20-24, 2016



Call for Abstracts/Papers

June 20-24, 2016 - Catania, Italy

Sheraton Catania Hotel & Conference Center

ESIS TC4 Mini-symposium : **Advanced Fracture Mechanics Testing of Polymers, Composites and Adhesives**

The use of **polymeric materials and composites** has today become widespread, spanning from everyday consumer products to high-technology applications. Associated with their increased use is the need to be able to apply sound engineering design principles so that their performance can be reliably predicted. With this goal in mind, ESIS TC4, from its establishment just over thirty years ago, has been pursuing the target of developing Fracture Mechanics based testing methods for a variety of polymeric and composite materials and components. The process has been a multistage one, within each work area an initial protocol is drafted in which fracture mechanics is applied to assess the structural integrity of a material under a defined loading regime and/or environmental condition. In this stage a number of universities and industrial companies together cooperate to perform the required enabling science to allow the proposed test method to be developed. A phase of inter-laboratory (round-robin) tests is then performed until the test method is sufficiently repeatable and reproducible to warrant a submission to ISO for full international standardisation. TC4 has successfully developed ISO standards in the areas of polymer fracture under quasi-static, high rate and cyclic fatigue loading. Additionally, composite delamination standards under modes I and II loading have been developed together with an adhesive joint standard in mode I loading.

The aim of this mini-symposium is to create a forum where fracture experts from both academia and industry can discuss and review this topic, present results from on-going activities and propose future work areas in the field.

However, while the topics cultivated by ESIS TC4 will be a main theme of this mini-symposium, its scope is open to all possible aspects of the fracture behaviour of **polymeric materials and composites**. Papers covering the following topics – but not limited to – are welcome:

- micro-mechanisms and physics of fracture
- environmental effects and durability
- analytical and numerical methods of modelling of fracture processes
- scaling laws and size effects
- probabilistic aspects and reliability approaches to structural integrity assessment

Symposium Organizers:

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