

6th International Conference of Engineering Against Failure



Session proposal

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Title of the session Computational modeling of polymeric composites and nanocomposites

Objectives Outstanding developments have been seen over the past few decades in the field of science and technology of Composite Materials. Their unique and multipurpose characteristics have rendered them as a high propriety group of candidate materials for several engineering applications in different sectors of industry including railroad, road, air and sea transportation, military, aerospace, municipality, energy production and transmission, civil and infra-structures, oil and petroleum, sports and leisure, etc. Furthermore, the development of new manufacturing methods associated with composites has often resulted in more cost-effective and value-added production lines. In particular, emerging composites such as nanocomposites, green composites, and 2D/3D textile composites in recent years have encouraged researchers to fully understand and improve their thermo-mechanical/electrical/chemical behavior and thereby expand their applications. With the vast advancements in Computer Science and Computational Science, modeling and simulation of polymeric composites and nanocomposites in order to - for instance - predict their mechanical behavior have become a powerful and complementary alternative to experimental testing which is often time consuming, expensive and sometimes unfeasible. Concentrating on advanced composites and their applications, the main objective of this session is to provide a forum for exchanging the state-of-the-art and novel ideas in the field of modeling and analysis of polymer-matrix composites at nano/micro/meso/macro scales.

