

ADVANCES IN COMPOSITE FAILURE MODELLING

1000 FRACTURE, DAMAGE AND FAILURE MECHANICS

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ABSTRACT

Damage mechanisms in composite materials cover a wide spectrum, from intra-layer failures (such as matrix cracking, fibre tensile failure, kinking, etc.) [1] to inter-layer failure, i.e., delamination [2]. Owing to its significant effect on the stiffness and strength of the structure, delamination has always been a matter of concern in laminated composites [3,4]. This mechanism refers to the separation of adjacent layers due to the lack of reinforcement in the thickness direction, and is basically driven by either service life loads (e.g., fatigue or impact), or manufacturing process effects such as residual stresses.

This Minisymposium welcomes contributions that propose advances in the modelling of composite failure, either due to delamination, intra-laminar nonlinear effects or a combination of the two, taking into account the interaction between inter and intra-laminar failure mechanisms.

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