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Through Thickness-Reinforced Composites

Guest Editors:

Prof. Ivana K Partridge
University of Bristol, Bristol Composites Institute, Queen's Building, University Walk, BS8 1TR

Prof. Stephen R. Hallett
University of Bristol, Bristol Composites Institute, Queen's Building, University Walk, Bristol BS8 1TR, UK

Dr. Giuliano Allegri
Department of Aerospace Engineering, University of Bristol, University Walk, Clifton BS8 1TR, Bristol, UK

Message from the Guest Editors

Through-the-thickness reinforcement techniques applied to fibre reinforced polymer matrix composites include Z-pinning, tufting, stapling and various forms of stitching. When applied in carefully selected locations within a composite structure, these techniques have been shown to be highly effective in limiting or slowing down the growth of delaminations.

Hybridisation of materials used for the through-the-thickness elements offers new levels of multifunctionality to be exploited in damage tolerance, damage sensing and new ways to improve processing efficiency in manufacture. Experimentally validated modelling approaches being developed for the evaluation of all these aspects offer the most efficient means of selection and valid comparisons within the spectrum of the technologies and hence become the most effective design tool in this context.

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