Preface

Fiber reinforced composites (FRCs) are fast becoming the material of choice in a wide range of applications where lightweight and high performance are critical. The deformation response, damage onset and failure of pre-preg based FRCs, textile FRCs and nanocomposites (where filler is reinforced with particles of dimensions in the nanometer scale) are now contemporary fields of research and there is wide variety of experimental, analytical and computational advances that have recently emerged. In this special issue of the CMC journal, leading experts in the mechanics of composites have contributed 14 papers devoted to addressing the deformation response, damage onset and failure of FRCs. Clearly, there could have been many more contributions, however, it is felt that the papers in this special issue will generate broad interest in the composites research community and would act as a catalyst to generate further research investigations aimed at improved understanding of the mechanical performance of FRCs. It is realized that the 14 papers do not cover in its entirety the significant accomplishments and developments that have taken place in the past few years in understanding deformation, damage and failure of FRCs. However, they are representative of contemporary advances, particularly with respect to computational modeling and prediction of FRC response to mechanical loads.

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