

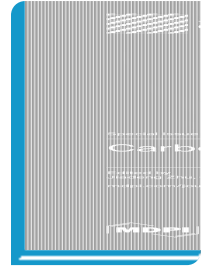
*Special Issue Reprint*

## **Carbon Fiber Composites**

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Many efforts have been made to create light-weight materials that maintain excellent physical and chemical properties, aiming at energy savings and property enhancement for aerospace, automotive, marine, and industrial applications over the past few decades. Among them, carbon fibers and their composites have attracted significant attention because of their unique properties, including high strength and modulus, novel dimensional stability, high surface area/volume ratios, low coefficient of thermal expansion, etc. Therefore, they have been widely applied in fields of energy storage, filtration, aircraft, etc., via advanced manufacturing technologies (i.e., wet/melt spinning, solution casting, 3D printing, etc.). Processing–structure–property relationships of carbon fibers and their composites are crucial for their future applications in the fields of energy, engineering, and the environment. Various precursors and processing approaches have been studied to prepare carbon fibers and composites with specific structures to achieve excellent multifunctional properties, consisting of better mechanical, thermal, electrical, and barrier properties. However, to date, lowering the manufacturing cost and expanding their applications remain challenging. The main aim of this Special Issue is to tackle the points mentioned above for the preparation, characterization, and properties of advanced carbon fibers and their composites to offer an insight into them, facilitating their practical applications in various fields.



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