



*materials*



*Special Issue Reprint*

## **Advanced Manufacturing Technologies of Thermoplastic Composites**

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It is well known that thermoplastic composites are increasingly applied to aerospace and automotive engineering, owing to their versatile properties, such as great fracture toughness and impact resistance, cycling possibility, infinite shelf life, etc. One of the most attractive properties of thermoplastic composites is that they can be fabricated by using out-of-autoclave (OOA) techniques, e.g., thermal forming, welding and 3D printing, etc., which provides them super cost-effective manufacturing processes. Based on the driving force from the continuous increase in the demand in aircraft or automotive industries combined with the announcement for lowering the environmental impact from aviation emissions, the thermoplastic composite market is believed to show an exponential increase in the following decades. However, there are still numerous scientific and technical knowledge gaps lying behind their manufacturing processes, which suppress the readiness levels and hence limit the current applications of thermoplastic composites. In total, 10 research articles are collected in this Special Issue, aiming at gaining deeper insights into the physical evolution mechanisms of the advanced manufacturing techniques of thermoplastic composites, thus laying a solid foundation for their further industrial applications.



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