Special Issue

Advances in Laser Processing and Mechanical Properties of Polymeric Materials

Message from the Guest Editors

Laser processing has emerged as a promising method for joining, modifying or enhancing the performance of polymers due to itsprecision, non-contact nature and ability to induce localized changes. Significant advancements have been made through the use of Laser Transmission Welding (LTW): this process allows for the precise control of heat distribution and enables the welding of complex geometries with minimal thermal damage. Laser transmission welding offers advantages such as high joint strength, excellent sealing properties and the ability to join dissimilar materials. It has been applied in industries such as automotives, medical devices, food packaging and electronics, where the demand for reliable and aesthetically pleasing polymer joints is high. Finally, Laser-Based Additive Manufacturing has revolutionized the production of polymeric components with complex geometries. By selectively curing or melting polymer layers, intricate structures can be created with tailored mechanical properties, including improved strength, flexibility and biocompatibility.

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Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

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