Special Issue

Advanced Joining Technologies for Automotive Lightweight Structures

Message from the Guest Editor

High-strength aluminium alloys are increasingly used in the automotive industry, in combination with high-strength steels, polymers and composites, in order to meet the demand for lightweight high-strength structures for more fuel-efficient vehicles and electric vehicles with superior crash protection. Accordingly, there has been a shift in joining techniques, from spot welding to hybrid joining approaches. This Special Issue aims to offer a forum for exchange in fundamental understanding and technological advances in automotive lightweight structure joining solutions, among worldwide academics, scientists and expert automotive engineers, with a focus on aluminium alloys and their joining with steel and polymers. The scope covers physical experiments, joint design, characterization and assessment, and process simulation and optimization on the following key joining technologies:

- Solid state joining methods—friction stir welding, self-piercing riveting, and magnetic pulse welding, etc.
- Fusion welding and resistance welding—laser beam welding, electron beam welding, cold metal transfer welding, etc.
- Hybrid joining methods and adhesive bonding.

Guest Editor

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Message from the Editor-in-Chief

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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