Special Issue

Superplastic Forming Process and Its Applications

Message from the Guest Editor

Superplasticity is the property exhibited by worked/processed metals and alloys which involve, under tensile loading, very high elongation without necking until failure. Superplastic forming (SPF) is mostly an excellent technique for gas forming complex shaped sheet components based on superplastic metals.

However, a car body using aluminum alloy sheet adopting SPF can be practical only when forming cycle time is reduced. Quick plastic forming (QPF) was evolved and General Motors Corporation led the way in developing it to make some models with AA5083 such as the Chevrolet Malibu. Quick Plastic Forming is essentially a pseudo-SPF process using a slightly lower processing temperature and higher gas pressure. Concurrently, using SPF and DB (Diffusion Bonding) is an advanced technology which can achieve even more novel structure. This SPF/DB process has successfully made a hollow fan blade that was installed in airplane engine. Any other SPF/DB processed product would be highly encouraged.

This Special Issue includes high-quality original research papers, review papers, and case studies dealing with every aspects of SPF, QPF, and SPF/DB.

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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