



Recent Research on Superplastic Forming of Metals and Alloys

Guest Editor:

Prof. Dr. Shyong Lee

Department of Mechanical
Engineering, National Central
University, Chung-li, Taiwan

Deadline for manuscript
submissions:

20 May 2024

Message from the Guest Editor

Dear Colleagues,

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 used for gas-forming complex-shaped sheet components based on superplastic metals. A major limitation of SPF is the slow forming time due to the material's intrinsic characteristics. This long cycle time is not a problem for small-volume production as in the aero-industry, and SPF is very advantageous in forming Ti alloys which are hard to deal with using other manufacturing processes.

However, a car body using aluminum alloy sheets that adopt SPF can only be practical when a forming cycle time is reduced. Due to this demand, quick plastic forming (QPF) has evolved and General Motors Corporation led the way in developing models with AA5083, such as Chevrolet Malibu.

Quick plastic forming is essentially a pseudo-SPF process that uses a slightly lower processing temperature and higher gas pressure. In recent years, attempts to employ QPF in manufacturing consumer products other than car bodies, such as smart-phone cases [...]





an Open Access Journal by MDPI

Editor-in-Chief

Prof. Dr. Maryam Tabrizian

1. Department of Biomedical Engineering, Faculty of Medicine and Health Sciences, McGill University, Montreal, QC H3A 2B6, Canada

2. Faculty of Dentistry and Oral Health Sciences, McGill University, 3640 Rue University, Montreal, QC H3A 0C7, Canada

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.

Author Benefits

Open Access: free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility: indexed within Scopus, SCIE (Web of Science), PubMed, PMC, Ei Compendex, CaPlus / SciFinder, Inspec, Astrophysics Data System, and other databases.

Journal Rank: JCR - Q2 (*Metallurgy & Metallurgical Engineering*) / CiteScore - Q2 (*Condensed Matter Physics*)

Contact Us

Materials Editorial Office
MDPI, St. Alban-Anlage 66
4052 Basel, Switzerland

Tel: +41 61 683 77 34
www.mdpi.com

mdpi.com/journal/materials
materials@mdpi.com
[X@Materials_Mdpi](https://twitter.com/Materials_Mdpi)