Special Issue

Assessment of Metallurgical and Mechanical Properties of Welded Joints via Numerical Simulation and Experiments

Message from the Guest Editor

Welding has been the most important joining technique applied to metallic materials since the early twentieth century when the arc welding technology developed. Advantages of welding processes are: Absence of holes that weaken the structure, reduction of production cost, faster speed of fabrication compared to bulky riveted/butted joints and so on. However, there are disadvantages, as well. Near the joint, the metallic material is altered, most of the time in a negative direction. Fatigue strength in particular is reduced compared to that of the parent metal because of metallurgical defects or stress concentration effects at the weld toe and/or root. Residual stresses are even induced that according to their sign could reduce the load bearing capacity and the fatigue strength of the joint.

This Special Issue aims to collect original works dealing with new advances in welded joints microstructure and mechanical characterization via numerical simulation and/or experiments. Papers that propose new numerical strategies as well as experimental fatigue data and design methodologies are particularly appreciated.

Guest Editor

Dr. Paolo Ferro

Department of Engineering and Management, University of Padova, Stradella San Nicola 3, 36100 Vicenza, Italy

Deadline for manuscript submissions

closed (10 April 2022)

Materials

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed

mdpi.com/si/44548

Materials
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
materials@mdpi.com

mdpi.com/journal/materials

Materials

an Open Access Journal by MDPI

Impact Factor 3.2
CiteScore 6.4
Indexed in PubMed

mdpi.com/journal/materials

MDPI

About the Journal

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.

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

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 and Metallurgical Engineering) / CiteScore - Q1 (Condensed Matter Physics)