Special Issue

Modelling of Thermal, Diffusion and Mechanical Processes in Welding and Heat Treatment

Message from the Guest Editors

Welding is a key technology in the manufacture of pressure vessels and pipelines. However, as a weak position, welded joints are prone to premature failure, which has an important impact on the structural integrity and safe service of pressure equipment. The residual stress caused by welding and the non-uniformity of the local microstructure properties of welded joints are important reasons that affect the intrinsic safety of equipment. As the main means to eliminate welding residual stress and improve the microstructure and comprehensive properties of joints, post-welding heat treatment is the key to ensuring high reliability and a long service life of pressure equipment, so it is very important to study the post-welding heat treatment process and its influence on joint properties. Topics of interest in this special issue include but are not limited to the following: welding and heat treatment processes; welding and heat treatment effect evaluation and life prediction; welding heat treatment experiments; theoretical and simulation analysis; residual stress relief and improvement of welded joint microstructure; measurement techniques; etc.

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Deadline for manuscript submissions

closed (20 May 2025)

Applied Sciences

an Open Access Journal by MDPI

Impact Factor 2.5
CiteScore 5.5

mdpi.com/si/201057

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As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal *Applied Sciences* has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

Editor-in-Chief

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