Special Issue

Computational Fluid Dynamics Analysis in Metallurgical Process

Message from the Guest Editor

In recent years, new technologies have promoted the development of more and more complex structures and systems. As an example, Additive Manufacturing (AM) technologies open new roads in the design of reticular and lattice structures. These are often impregnated with lubricant or damping fluids to improve the lubrication/heat dissipation of the system or its NVH behavior. While in the past, the interaction of metal components and fluids was carried out mainly by means of experimental measurements, recent developments in computer science have promoted the adoption of numerical techniques. A typical example are the power losses of gearboxes. While it is common practice to use Computational Fluid Dynamics (CFD) simulations for the design of structures such as wings, there are many new possibilities to solve technical issues or improve the performances of a mechanical systems using numerical approaches. The aim of this Special Issue is to collect examples of the innovative applications of CFD.

Guest Editor

Prof. Dr. Franco Concli

Faculty of Science and Technology, Free University of Bolzano/Bozen, 39100 Bolzano, Italy

Deadline for manuscript submissions

closed (31 May 2022)

Metals

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MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
metals@mdpi.com

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Message from the Editorial Board

Metallic materials play a vital role in the economic life of modern societies; contributions are sought on fresh developments that enhance our understanding of the fundamental aspects related to the relationships between processing, properties and microstructure – disciplines in the metallurgical field ranging from processing, mechanical behavior, phase transitions and microstructural evolution, nanostructures, as well as unique metallic properties – inspire general and scholarly interest among the scientific community.

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Department of Materials Science and Engineering, College of Engineering & Applied Science, University of Wisconsin-Milwaukee, 3200 N. Cramer Street, Milwaukee, WI 53211, USA

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