

Special Issue

In Situ X-Ray Diffraction on Metals and Alloys

Message from the Guest Editor

With new-generation diffractometers, detectors and synchrotron sources, it is time to focus our research on metals and alloys developed with in situ X-rays methods. The aim is to describe several kinds of results using original devices that have been developed in laboratories or specially designed for synchrotron beamlines. Results will form a large part of this Special Issue, but some focus is needed on the specificities of the sample environment due to the specificities of the metallic samples and their interaction with X-rays (high absorption, fast or low kinetics of the studied phenomena, etc.) and also the work to be done with the data. In situ analysis means a lot of data to analyze with several constraints (large volume, synchronization of signals, evolution of the sample, multiple analysis, statistics, ...) The main idea of this particular issue is to show the impressive results that can be obtained using in situ X-rays; the work that needs to be done to design (or even use) a sample environment adapted to metals and alloys analysis; the time and work required for data extracted from the complete device.

Guest Editor

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About the Journal

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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