Special Issue

Characterization and Application of Superconducting Materials

Message from the Guest Editors

Recent advances in the field of high-temperature superconductors (HTS) open up new prospects for meeting the challenges. However, there are still many key issues regarding their reliability in practical applications dealing with their transient electromagnetic, thermal, and mechanical behavior. The first key issue is related to the loss of the superconducting state. This loss of the superconducting state can lead to permanent damage as the superconductor can experience a thermal runaway or quench. The second key issue is a combination of the limited production length and the variability of the superconducting properties in the case of the second generation of superconductors (REBCO). Therefore, accurate knowledge of the characteristics of the superconductor and its actual performance is of paramount importance in the design of the HTS device, balancing the technological benefits with the initial investment and the operating costs. In view of the above, this Special Issue aims to provide quality papers presenting new perspectives on the advances in the understanding, characterization, and innovative applications of high-temperature superconductors.

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Message from the Editorial Board

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.

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