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Superconductors: Materials, Properties and Applications

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Message from the Guest Editor

Since the discovery of the phenomenon of superconductivity, superconductors have increasingly attracted the attention of researchers. Superconductors are materials with virtually zero electric resistivity. Superconducting materials themselves are subdivided into a few categories and material groups (e.g., high-temperature superconductors (HTS) and low-temperature superconductors (LTS)). These materials provide a very large group of possible applications. Among the applications currently utilizing superconducting materials are stable LTS magnets producing large-volume, stable, and high-intensity magnetic fields required for MRI and NMR, HTS thin-layer tapes used in transformers, special magnets, power storage, motors and generators or HTS bulks used in levitation applications. The potential of mainly HTS materials is huge but depends on further improvement of these materials, especially in affordable fabrication, technological reliability or increased performance. This creates a significant challenge for material scientists and engineers specialized in this and related fields, including processing of thin layer substrates or cryogenic technology.

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Message from the Editor-in-Chief

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