



## New Advance in Superconductor and Superconducting Thin Films

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### Message from the Guest Editor

Superconductivity in general allows for 100% current transmission without losses. This makes it super valuable resource for sustainability in many aspects. The high-temperature superconducting materials, which will be crucial for the day life applications. Superconducting magnets can be used as high field magnets that can aid in several industrial applications. On the other hand, first generation Bi-2223 tapes and second generation coated conductor (CC) films will be crucial for the development of the superconducting cables in power industry. The main objective of this volume is to summarize the recent advances in material science of high- $T_c$  superconductors and its developments with respect to the superconducting CC thin films.

In particular, the topic of interest includes but is not limited to

- Advance in Superconducting materials (Y123, RE123, MgB<sub>2</sub>, FeSe, etc.,)
- Coated Conductor (CC) tapes and wires
- Critical currents and flux pinning
- Nano-pinning centers, microstructure control
- Magnets for day to life applications
- HTSc high current cables





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## Message from the Editorial Board

Now more than ever, research is asked to deliver knowledge and technologies to solve the major challenges faced by our society. The development of new materials and devices for (without the ambition to be exhaustive) energy, health and food technology, together with the need for establishing processes that reduce the impact on critical resources and the environment, is indeed in the spotlight of most contemporary research. Surface science and engineering play a key role in this regard, with an incredible potential in delivering new and deep scientific understanding and technical solutions essential to solve most of the major societal challenges.

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