Special Issue

Synthesis and Characterization of 2D and 3D Superconducting Materials

Message from the Guest Editor

Superconductors are extraordinarily important quantum materials not only for intriguing fundamental scientific research but also for a wide range of transformative applications across medicine, energy, transportation, and quantum technologies. Thus, synthesis, characterization, mechanism exploration, and applications of two-dimensional and three-dimensional superconducting materials are highly requested for future quantum sciences and industries. Convensional superconductors such as Hg, MgB2, and recent hydrides, whose superconducting behavior is well explained by BCS (Bardeen–Cooper–Schrieffer) theory through electron-phonon interactions, has reached nearly room temperature superconducting critical temperature (Tc) under high pressure. Whereas the underlying mechanism of unconventional superconductors such as cuprate, Fe-based, and recent Ni-based superconductors, which exhibit high Tc at ambient pressure, remains unclear. This special issue serves as an excellent platform for exploring superconductivity over convensional and unconvensional superconductors encompassing fundamental scientific research as well as industrial applications.

Guest Editor

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As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal *Applied Sciences* has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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