Special Issue

Advances in Silicon Carbide (SiC) and Related Materials: Structure Design, Fabrication and Application

Message from the Guest Editors

Silicon carbide (SiC), with its exceptional mechanical properties, high-temperature stability, radiation resistance, and excellent chemical inertness, has shown great potential for applications in nuclear energy, aerospace, and electronic semiconductor devices. This Special Issue focuses on the fabrication, optimization, and multi-scale simulation of SiC and related materials, their performance under extreme conditions in advanced nuclear systems and aerospace applications (including high-temperature mechanical properties, corrosion resistance, and radiation tolerance), and the latest advancements in SiC electronic and semiconductor devices, functional coatings, and surface modification technologies. By optimizing fabrication processes, tailoring microstructures and macrostructures, enhancing heterogeneous interface bonding strength, and improving overall material performance, the goal is to further advance the application and development of SiC and related materials in extreme environments.

Guest Editors

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