Special Issue

Electronic Structures of Polar Intermetallic Compounds

Message from the Guest Editor

It is mandatory to understand the electronic structure of a given solid-state material because the knowledge of the electronic structure of given solid-state compound provides conclusive information about its chemical and physical properties. Investigating the electronic structures of unknown materials, allows the acceleration of the discoveries of unprecedented compounds of interest. To accomplish the tailored design of materials, diverse experimental as well as quantum-chemical means have meanwhile been made available to the multidisciplinary community of materials scientists. Previous explorative efforts that have employed both experimental and quantum-chemical means determined a unique group of solid-state materials dubbed as "polar intermetallic compounds". The crystal structures of these intermetallics are typically composed of polycationic or polyanionic fragments combined with monoatomic counterions, while their electronic structures cannot be understood by applying traditional valence-electron rules. In the present Special Issue, prototypical examples of the group of polar intermetallics are presented to demonstrate the unique kind of electronic structures.

Guest Editor

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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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