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Electronic Structures of Polar Intermetallic Compounds

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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.



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Special Issue



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Message from the Editor-in-Chief

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