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Advances in Zintl Phases

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Message from the Guest Editors

Zintl phases have received rapidly-increasing attention over the past decade due to their potentially-useful electronic, thermal, as well as magnetic properties. Zintl phases are considered a subset of the intermetallics, with properties ranging from insulating to metallic, but the main premise is the simple idea of ionic and covalent bonding within an intermetallic composition. In the most restrictive definition, Zintl phases are semiconducting intermetallics, where the electropositive cation provides the necessary electrons to the more electronegative metalloids in order to obtain a closed shell electronic configuration.

This Special Issue aims to provide a forum for contributions focused on all aspects of Zintl phases, both traditional Zintl phases and those that can be included with an expanded definition (containing transition metals, rare earths, etc.), including new experimental and theoretical research that advances the understanding of the synthesis, structure, properties, as well as applications of materials that can be described as Zintl phases or variants thereof.

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