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# High Pressure Synthesis in Crystalline Materials

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## Message from the Guest Editors

Pressure is a principal thermodynamic parameter able to control the state, structure, physical properties and chemical behavior of matter. One of most unique properties of high pressure is the ability to change the pathways of chemical reactions and enable the synthesis of materials that cannot be obtained under ambient pressure conditions. New chemical compounds with unusual and unexpected stoichiometries, new types of bonding, and properties that may be of significant future technological applications have been synthesized in high-pressure experiments. This Special Issue will focus on reports of such results, from experiments, as well as based on computational predictions. Our understanding of the exact mechanisms of high-pressure solid state reactions and the factors controlling their progress and direction is still very preliminary, and improving this knowledge is key to harnessing the power of high pressure for practical applications.

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## Message from the Editor-in-Chief

Welcome to *Crystals*, the journal dedicated to the fascinating world of crystallographic research! Crystals are more than mere decorative elements; they hold the key to understanding the fundamental structure of matter. Our mission is to explore the crucial significance of this research across various fields. From medicine to technology, chemistry to geology, crystals play a vital role. Their structure provides insights into new advanced materials, innovative drugs, and groundbreaking technologies. Through *Crystals*, we delve into the microscopic world to discover solutions that will shape the future. Join us on a journey through the *Crystals*, where science merges with beauty and innovation.

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