



crystals



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Ceramics: Processes, Microstructures, and Properties

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Deadline for manuscript
submissions:

10 October 2024

Message from the Guest Editors

Relative to polymers and metals, the processing of ceramics is challenging due to their extremely high melting points. The development of polymer-derived ceramics, prepared through the thermolysis of polymeric ceramic precursors, offers potential for manufacturing ceramics with tuneable microstructures and properties. Additive manufacturing (AM), also known as three-dimensional printing, is a material-oriented manufacturing technology, and printing resolution versus printing scalability/speed trade-off exists among various types of ceramic materials. The AM of ceramic structures is typically achieved with powder/slurry-based ceramic printing feedstocks, coating-film-based ceramic printing feedstocks, and polymeric precursor-based ceramic printing feedstocks.

This Special Issue is mainly focused on the ceramic processes and microstructure of ceramics, including (but not limited to) the additive manufacturing of ceramics, ceramic matrix composites, polymer-derived ceramics, the microstructure of ceramics, materials characterization, thermal/environment barrier coatings, and bio-ceramics.



mdpi.com/si/187541

Special Issue



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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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