Special Issue

Nanocrystalline Bulk Materials at Multiple Scales

Message from the Guest Editors

Nanocrystalline bulk materials are polycrystalline structures with an average grain size below about 100nm. In contrast to microcrystalline counterparts, nanocrystalline materials have a much larger volume fraction of interfaces, including grain boundaries, phase boundaries, and domain interfaces. Owing to special structures, nanocrystalline materials exhibit distinctly different physical, chemical, and mechanical properties from those of microcrystalline materials with the same nominal compositions. After decades of research development, it is now a new beginning for the innovative fundamental and applied science of nanocrystalline materials. Many of the challenges of developing nanocrystalline materials are being resolved by using different fabrication and characterization techniques, from macroscale all the way down to atomistic scale, facilitating real-life usages of bulk nanocrystalline materials and parts. Recent advances in experimental and theoretical studies as well as the integration of experiments and computational materials science, are expected to lead to the next generation high performance nanocrystalline materials with both structural and functional applications.

Guest Editors

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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.

Editor-in-Chief

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