

Special Issue

In Situ Study of Mineralogy, Gemology, and Geochemistry and Advances in Gem Resource Exploration

Message from the Guest Editors

Mineral crystallography, the common language of earth sciences, materials science and gemology, has travelled from goniometer and optical microscope to TEM, synchrotron and EBSD, opening atomic- and nano-scale views once impossible. Classical P-XRD, SC-XRD, chemical assays and angle-symmetry measurements still anchor every new advance, while Raman, LIBS and LA-ICP-MS now let gem laboratories fingerprint stones, trace provenance and reconstruct growth histories in days rather than months.

This Special Issue welcomes original papers whose research methodology employs a range of characterization techniques for the analysis of mineral microstructures. Desired contributions cover: (1) in-situ crystallography; (2) crystal-structure refinement; (3) colour, transparency and lustre quantification; (4) geological setting, paragenesis and genesis of gem deposits; (5) mineralogical, geochemical and spectroscopic signatures of gemstones; (6) multi-method provenance and identification protocols; and (7) historical, material and conservation studies of museum-held mineral samples.

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About the Journal

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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