# Special Issue

# Structural Engineering of Low-Dimensional Materials for Desired Properties

## Message from the Guest Editor

Unique properties can be exhibited by bulk (3D) materials when their dimensions are reduced. Representative examples include fullerenes (0D), carbon nanotubes (1D), graphene, transition metal dichalcogenides and MXenes (2D). There have been increasing research interests in tuning their properties by structural engineering, and viable approaches include defect control, phase transitions, elemental doping, self-assembly, hybridization, etc. Recent progress in the scientific understanding and technological advances in this field offers new opportunities to address several key challenges, thereby enabling a broader range of applications, such as electronic and optoelectronic devices, catalysts, batteries, supercapacitors, etc. The relevant topics have received widespread attention and publications on these topics are highly cited. Thus, this Special Issue, entitled “Structural Engineering of Low-Dimensional Materials for Desired Properties,” aims to provide reviews and perspectives that will inspire more scholars and industrial partners to become involved in the development and commercialization of these promising functional materials.

## Guest Editor

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## Deadline for manuscript submissions

closed (20 August 2025)

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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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