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## Phase Engineering of Two-Dimensional Lattices

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### Message from the Guest Editors

Two-dimensional systems, including van de Waals 2D materials, semiconductor surface reconstructions, etc., are some of the hottest material platforms in the past two decades due to their rich physical properties and potential for numerous applications. One major research direction focuses on multi-phase behaviours, which are rooted in the competition of the lattice, charge, and spin degree of freedom in these systems. Many intriguing electronic phases, including charge/spin density wave, superconductivity, etc., can be produced when the system undergoes spontaneous symmetry-breaking at low temperature. The ground state of a 2D lattice is changed by tuning the system parameters while different sample preparation routes or external stimulations stabilise meta-state phases. Developing phase-tuning methods, characterising the phase diagram, and revealing the driven mechanism are all critical for exploring new physics and developing novel devices.

Based on these concepts, this Special Issue of Crystals, “Phase engineering of two-dimensional lattices” will provide a platform for researchers to report results and findings in tuning the phase of 2D lattices.



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# Special Issue



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## Editor-in-Chief

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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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