Special Issue

Advances in Low-Dimensional Materials: Synthesis, Characterization and Device Application, 2nd Edition

Message from the Guest Editors

Nanotechnology has enabled precise control over thin film synthesis and characterization, leading to the discovery of novel low-dimensional materials such as quantum dots, nanowires, nanotubes, and 2D materials (graphene, transition metal dichalcogenides, MXenes, perovskites). These materials exhibit unique properties like spin polarization, magnetism, superconductivity, and piezoelectricity, dependent on factors such as composition and crystal structure. This Special Issue focuses on (1) synthesis of low-dimensional materials for emerging physics and devices; (2) characterization methods for atomic-scale structure and properties; and (3) applications in transistors, sensors, photodetectors, memories, and energy conversion. Building on the success of the first volume, we invite researchers to submit original papers, communications, and reviews to contribute to this rapidly evolving field.

Guest Editors

Dr. Tianyi Zhang

Research Laboratory of Electronics, Massachusetts Institute of Technology, Cambridge, MA 02139, USA

Dr. Xiaotian Zhang

School of Mechanical Engineering, Shanghai Jiao Tong University, Shanghai 200240, China

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Micromachines
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
micromachines@mdpi.com

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Editor-in-Chief

Prof. Dr. Ai-Qun Liu
1. Department of Electrical and Electronic Engineering, The Hong Kong Polytechnic University, Hong Kong, China
2. School of Electrical and Electronic Engineering, Nanyang Technological University, Singapore 639798, Singapore

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