Special Issue

Thin-Film Technology in Atomic Scale and Micro/Nano Manufacturing: From Preparation to Application

Message from the Guest Editors

The study of thin-film fabrication and characterization techniques holds significant scientific and practical value. At the fundamental research level, precise control over film composition, structure, and thickness helps uncover the distinctive physicochemical properties of low-dimensional materials, providing a theoretical foundation for novel material design. In terms of technological applications, high-performance thin films serve as critical components in semiconductor devices, optoelectronic elements, and energy storage/conversion systems, where optimized synthesis and accurate characterization directly determine device performance. Furthermore, emerging thin-film technologies (flexible films, ultrathin two-dimensional materials) have driven advancements in wearable electronics, flexible displays, and other cutting-edge fields. This Special Issue aims to present high-quality papers that focus on the atomic-scale and micro/nano-manufacturing field. Research areas may include (but are not limited to) the following:

- Magnetic/electrical thin films;
- Metal/semiconductor/insulating/ceramic thin films;
- Heterostructures and superlattices.

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