

Special Issue

Thin Films and Semiconductor Heterostructures: From Fundamental to Applications

Message from the Guest Editor

Semiconductor heterostructures are engineered materials composed of different semiconducting materials that are stacked or layered together to bring unique electronic properties. In addition, the thin-film technology provides an ideal tool for the design of nanostructured interfaces offering novel quantum effects. These structures are designed to combine the favorable properties of multiple semiconductors, enabling the development of high-performance electronic devices. Through the strategic combination of different semiconductors and the manipulation of carrier behavior, these heterostructures play a crucial role in advancing technologies such as optoelectronics, quantum computing, and high-speed electronics. This Special Issue will compile recent developments in the field of thin films and semiconductor heterostructures. The articles presented in this Special Issue will cover various topics, including advanced semiconductor materials and 2D materials, the optimization of deposition methods, thin-film device fabrication, and device characterization techniques. Topics are open to metal oxide thin film deposition and characterization for the development of applications.

Guest Editor

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About the Journal

Message from the Editor-in-Chief

Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

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