Special Issue

Structural, Electrical and Optical Properties of Semiconductor Alloys and Their Heterostructures

Message from the Guest Editor

It is our dream to inaugurate new materials platforms to carry out the “on demand” functions that accomplish the novel technological possibilities in the 21st century, such as future computers that can achieve quantum supremacy, ultrasensitive sensors that immediately notify us of tiny environmental changes, supersmart personal wearable electronics, the ultrahigh-speed network that provides an unprecedented enrichment of our lives, and many other items. One of the keys to attaining these technological miracles is a class of semiconductor alloys and their heterostructures beyond silicon, in which the extraordinary effects of quantum mechanics give rise to exotic and often incredible properties. Although the discovery of semiconductors revolutionized computation and information storage and piloted in today’s hundred-billion-dollar electronics industry, research on traditional semiconductor alloys and their heterostructures still has great potential to renovate energy and energy-related technologies, to generate, store, and process qubits, to offer extraordinary advantages for high-speed, low-power electronics, and so on.

Guest Editor

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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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