Special Issue

Optical and Electronic Characteristics of Semiconductor Materials and Devices

Message from the Guest Editor

Symmetry presents harmonic beauty in many ways, in fields such as the arts, music, and science. The unique properties of semiconductor materials vividly manifest the beauty of symmetry in nature. 1D, 2D, or 3D semiconductor materials are built by atoms arranged in a highly symmetric crystal lattice that extends in one, two, or three directions, respectively. Some 1D and 2D materials with reduced in-plane symmetry exhibit strong in-plane anisotropy in their optical and electronic properties that allow for the realization of new electronic and photonic devices. Symmetry and asymmetry optical cavities are essential for photonic devices. Optoelectronic characteristics can be designed by arranging optical nanostructures or by breaking symmetry. The newly emerging field of topological quantum material, which includes topological insulators and semimetals, is another intriguing example of natural symmetry. These devices' exotic electronic properties hold great promise for future quantum devises...

Guest Editor

Prof. Dr. Der-Yuh Lin

Department of Electronics Engineering, National Changhua University of Education, Changhua 50007, Taiwan

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Symmetry
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
symmetry@mdpi.com

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About the Journal

Message from the Editor-in-Chief

Symmetry is ultimately the most important concept in natural sciences. It is not surprising then that very basic and fundamental research achievements are related to symmetry. For instance, the Nobel Prize in Physics 1979 (Glashow, Salam, Weinberg) was received for a unified symmetry description of electromagnetic and weak interactions, while the Nobel Prize in Physics 2008 (Nambu, Kobayashi, Maskawa) was received for the discovery of the mechanism of spontaneous breaking of symmetry, including CP symmetry. Our journal is named *Symmetry* and it manifests its fundamental role in nature.

Editor-in-Chief

Prof. Dr. Sergei Odintsov
1. ICREA, 08010 Barcelona, Spain
2. Institute of Space Sciences (IEEC-CSIC), C. Can Magrans s/n, 08193 Barcelona, Spain

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