



Advances in Topological Materials: Fundamentals, Challenges and Outlook, Volume II

Guest Editor:

**Prof. Dr. Stawomir P.
Łepkowski**

Institute of High Pressure
Physics, "Unipress", Polish
Academy of Sciences, ul.
Sokołowska 29/37, 01-142
Warszawa, Poland

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Message from the Guest Editor

The discovery of the time-reversal topological insulators in two and three dimensions has greatly inspired the study of topological properties of the electronic band structure of crystalline materials. Topological insulators are characterized by an energy gap in the bulk electronic band structure and metallic states on the boundaries. Closing of the band gap by the surface or edge states is caused by nontrivial topology of the bulk states, originating from an inversion in the order in the valence and conduction bands at time reversal invariant wave vectors in the Brillouin zone.

In this Special Issue, we focus on topological nanomaterials, nanostructures, and nano-metamaterials. Research on the topological effects at the nanoscale not only leads to the observation of new phenomena, such as Majorana fermions in topological nanowires but is also primarily important for the application of topological materials and metamaterials in modern electronic, acoustic, and optical devices. This Special Issue aims to highlight the latest state-of-the-art studies on the topological effects in nanomaterials, nanostructures, and nano-metamaterials.





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Editor-in-Chief

Prof. Dr. Shirley Chiang

Department of Physics, University
of California Davis, One Shields
Avenue, Davis, CA 95616-5270,
USA

Message from the Editor-in-Chief

Nanoscience and nanotechnology are exciting fields of research and development, with wide applications to electronic, optical, and magnetic devices, biology, medicine, energy, and defense. At the heart of these fields are the synthesis, characterization, modeling, and applications of new materials with lower nanometer-scale dimensions, which we call “nanomaterials”. These materials can exhibit unusual mesoscopic properties and include nanoparticles, coatings and thin films, metal-organic frameworks, membranes, nano-alloys, quantum dots, self-assemblies, 2D materials such as graphene, and nanotubes. Our journal, *Nanomaterials*, has the goal of publishing the highest quality papers on all aspects of nanomaterial science to an interdisciplinary scientific audience. All of our articles are published with rigorous refereeing and open access.

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Nanomaterials
MDPI, St. Alban-Anlage 66
4052 Basel, Switzerland

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