Special Issue

Symmetry Breaking in Graphene: Topics and Advances

Message from the Guest Editor

Symmetry breaking in graphene systems has profound impacts on its physical, chemical, mechanical, and optical properties. For instance, symmetry breaking in graphene can induce a change in band gap energy. Symmetry breaking in artificial graphene systems, by assembling coronene molecules on metal surfaces, can be achieved via various strategies; for example, (a) differentiating the on-site energy of two sublattices of a honeycomb lattice and (b) uniaxially compressing a honeycomb lattice. The first one breaks the inversion symmetry, while the second one merges the Dirac cones; in both cases, the local density of states undergoes characteristic changes. This Special Issue focuses on the topics and advances of symmetry breaking in graphene and its related materials systems and studies their applications. Please note that all submissions must correspond to the scope of *Symmetry*.

Guest Editor

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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

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