



Quantum Transport and Spintronics of Two-Dimensional Materials

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Message from the Guest Editor

Dear Colleagues,

Two-dimensional materials provide an ideal platform to explore novel physical and chemical properties, such as quantum Hall effect, topological phases, spintronics, twistronics, ferroelectricity and ferromagnetism. The rapid development of the family of layered materials brings a revolution of next-generation applications including low-energy-consumption field-effect transistors, neuromorphic computing, light-emitting diodes, energy storage and electrocatalysis.

This Special Issue aims to provide an overview of the most recent developments on the electrical and magnetic properties of two-dimensional materials, including spintronics, transport, phase transition, ferromagnetism and so on. Main topics include but not limited to:

1. Quantum transport of two-dimensional materials: superconductivity, quantum tunneling, quantum Hall effect, ballistic transport, quantum computing.
2. Developments of magnetic layered materials: new magnetic materials, spin Hall effect, spin filter.
3. Ferroelectric and ferromagnetic properties of layered materials.
4. Next-generation applications of layered materials: memristor, neuromorphic computing, photo detection.

