



Applications of 2D Semiconductors

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Message from the Guest Editors

The field of 2D semiconductors has rapidly expanded, discovering rich and exciting science in atomically thin layers of these compounds with finite bandgaps in the range from far infrared to deep ultraviolet. These materials exhibit outstanding electrical and optical properties originating from their unique thickness-dependent band structures, which make them highly desirable for applications in future electronics and optoelectronics. The large family of 2D semiconductors is continuously expanding, with new members bringing novel functionalities. This large and ever-growing library of materials enables the selection of optimal 2D semiconductors for specific applications, as well as the development of new device concepts. Furthermore, even greater advantages come from the possibility to engineer new artificial materials by combining their 2D layers together with different stacking sequence and rotational alignment, thus assembling the so-called van der Waals heterostructures with tailored properties.

Keywords

- 2D semiconductors
- van der Waals heterostructures
- photosensors
- flexible electronics
- optoelectronics
- catalysis





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