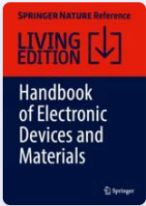


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Soumya Sen, Angshuman Khan, Abheek Gupta & Atanu Chowdhury

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Abstract

Highly promising for usage in electronics and optoelectronics, two-dimensional (2D) materials have emerged as an alternative class of nanomaterials with outstanding

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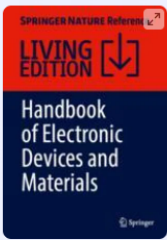
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- Includes cutting-edge developments in signal processing, embedded systems, sensors, actuators, emerging materials, etc
- Is a good reference for researchers in the field of electronics and materials
- Highlights how emerging technologies improve efficiency, sustainability, and performance

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Abstract

Highly promising for usage in electronics and optoelectronics, two-dimensional (2D) materials have emerged as an alternative class of nanomaterials with outstanding electrical, optical, mechanical, and thermal traits. The special atomic-scale thickness and high surface-to-volume ratio of 2D materials provide astounding carrier mobility, tuned band gaps, and quantum confinement phenomena. Their basic characteristics—including structural, electrical, optical, and mechanical ones—are thoroughly looked into in this chapter. The subject matter additionally addresses the part 2D materials play in field-effect transistors (FETs), memory devices, logic circuits, photodetectors, light-emitting devices,

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