Production of Substrate-Free Two-Dimensional Telluride Materials

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Categories:
- Materials and Manufacturing
- Micro & Nanotechnologies

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- 2D Materials
- chalcogen
- Graphene
- quantum electronics
- single layer materials
- spintronic devices
- topological materials

The use of two-dimensional telluride materials has been limited due to challenges with the material synthesis including the need for a substrate.

Researchers at Purdue University have synthesized substrate-free two-dimensional tellurides, e.g., PdTe2, and Ag4.53Te3, which have sub-millimeter size and atomically-thin thickness. Based on their promising electronic and optical properties, these materials have applications in electronic devices, photonics, energy technologies and quantum computing.

Advantages:
-Substrate-free
-Uniform shape
-Ultra-thin

Potential Applications:
-Electronics
-Optics
-Quantum materials

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Intellectual Property:

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