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Deterministic Creation of Single Photon Emitters in Hexagonal Boron Nitride on Non-patterned Substrates

A radiation-free method creates bright, room-temp quantum light sources on boron nitride.

Researchers at Purdue University have invented a novel method of creating high intensity single photon emitters on a hexagonal boron nitride substrate. This technology stands apart from others currently available as it does not require the use of ions that could damage electronic equipment, it provides a greater level of control over the process, and yields an emitter that is brighter and functional at room temperature. Single photon emitters have applications in the fields of quantum information technology, quantum communications, and waveguides. Innovations in the ability to create single photon emitters enable further improvements in these areas.

Advantages:

-Compatible with non-patterned substrates

-Radiation-free

-Greater process control for creating single photon emitters

-Higher intensity emitter that operates at room temperature

Applications:

-Quantum Information Technology

-Optical quantum computing

-Quantum Communications

-Waveguides

TRL: 4

Intellectual Property:

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Category
Computing/Quantum Technologies
Semiconductors/Semiconductor Materials & Substrates
Chemicals & Advanced Materials/Materials Processing & Manufacturing Technologies

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