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Assembly of 3D Metal-dielectric Nanoarrays with Arbitrary Materials and Structures for Surface Plasmon Applications

Wet-condition method for defect-free, repeatable nanoarray fabrication for plasmonic devices.

Researchers at Purdue University have developed a new nanoassembly methodology that occurs under wet condition, enabling defect-free integration of various quasi-3D plasmonic nanoarrays with a desired receiver substrate. Unlike many current approaches, the entire technology assembly occurs exclusively in distilled (DI) water at room temperature without the need of chemical or thermal treatments. Through a comprehensive set of data gained from experimental, computational, and theoretical studies, researchers have gained insight into the optimal conditions for controllable, repeatable, and defect-free outcomes.

Advantages:

-Defect-free

-Simpler

-Repeatability

Potential Applications:

-3D Metal-Dielectric Nanoarray

TRL:

Intellectual Property:

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Utility-Gov. Funding, 2020-12-18, United States

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