

Nanophotonic fabrication : self-assembly and deposition techniques

Yatsui, Takashi, author

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Abstrak

Nanophotonics, a novel optical technology, utilizes the local interaction between nanometric particles via optical near fields. The optical near fields are the elementary surface excitations on nanometric particles, i.e. dressed photons that carry material energy. Of the variety of qualitative innovations in optical technology realized by nanophotonics, this book focuses on fabrication. To fabricate nano-scale photonic devices with nanometer-scale controllability in size and position, we developed a self-assembly method for size- and position-controlled ultra-long nanodot chains using a novel effect of near-field optical desorption. A novel deposition and etching scheme under nonresonant conditions is also demonstrated and its origin is reviewed.