

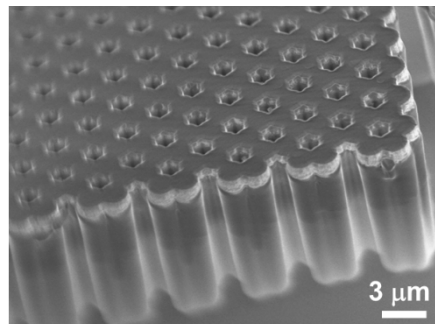
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Topic: Lasers, photonic lattices, nonlinear optics

Laser in a lattice of photonic resonators

Lattices of photonic resonators are a remarkable system to study experimentally the physics of particles in complex Hamiltonians. In a photonic lattice, the dynamics of light is determined by the interplay of tunnelling between adjacent sites, gain, losses and the optical nonlinearities. For instance, in a honeycomb lattice, light propagation mimics the extraordinary transport properties of electrons in graphene.

One of the most appealing aspects of photonic lattices is that they allow designing lasers with properties inspired by solid state materials such as graphene. The goal of this internship is to study the lasing properties of a two-dimensional lattice of photonic resonators. The aim is to design, simulate and test experimentally a lattice of photonic resonators with single mode lasing properties.



Honeycomb lattice of photonic resonators.

Key words: Lasers, photonic lattices, nonlinear optics