

Photonic Crystal - TMD Structures as Perfect Absorbers in the Strong Coupling Regime

Eleonora Kraus

Philipps-Universität, Marburg, Germany

Abstract

We have numerically demonstrated, that PhC-TMD structures can achieve perfect absorption in the strong coupling regime while only being excited through one port i.e. from one side. Another characteristic phenomenon of PhC slab - TMD structures is the coexistence of strongly and weakly coupled excitons within a single unit cell. This observation of two different exciton species, reflected as upper and lower the polariton branches with a Rabi splitting of $\sim 25\text{meV}$ and the energetically constant weakly coupled A exciton peak, respectively, can be attributed the drastically varying electric field amplitudes in PhCs.