Mathias Rosdahl Jensen - DTU Orbit (10/11/2017)

Mathias Rosdahl Jensen

Organisations

PhD Student, Department of Photonics Engineering
13/06/2016 → present
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VIP

Nanophotonics Theory and Signal Processing
14/06/2016 → 13/09/2017 Former
VIP

Publications:

**Strain tuning of optical properties in Bi$_2$Se$_3$**
Based on symmetry principles we determine the most general Hamiltonian for the low energy physics of Bi$_2$Se$_3$, including contributions due to a static electric field and strain. The full three-dimensional model is projected into the surface states at $k=0$, giving an effective two-dimensional Hamiltonian for the surface states. Contributions from the strain tensor breaks the anisotropy of the surface state spectrum, giving an elliptical Dirac cone. Within this model we calculate the absorption spectrum for an ultra-thin film. We show that the fundamental absorption edge can be effectively tuned by application of uniaxial strain.

General information
State: Published
Organisations: Department of Photonics Engineering, Nanophotonics Theory and Signal Processing
Authors: Jensen, M. R. (Intern), Mørk, J. (Intern), Willatzen, M. (Intern)
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Projects:

**k.p Theory of Two-Dimensional Materials**
Department of Photonics Engineering
Period: 01/07/2016 → 29/11/2019
Number of participants: 3
Phd Student:
Jensen, Mathias Rosdahl (Intern)
Supervisor:
Mørk, Jesper (Intern)
Main Supervisor:
Willatzen, Morten (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Grundforskningsfonden
Project: PhD