

Circular dichroism study of colloidal semiconductor nanoscrolls*

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Received July 6, 2018

Chiral semiconductor nanoscrolls are promising materials for applications in chiral chemistry, biomedicine, and spintronics. Despite a large number of studies on the formation of nanoscrolls, there is lack of consistent theory of their optical and chiroptical properties. In this Paper, we propose a simple analytical model of semiconductor nanoscrolls, based on the original coordinate transformation method and two-band effective mass approximation. This model allows to simulate absorption and circular dichroism spectra of nanoscroll of given geometry and material composition and to analyze experimental data.

DOI: 10.21883/OS.2018.11.46825.206-18

* International Conference „PCNSPA 2018 — Photonic Colloidal Nanostructures: Synthesis, Properties, and Applications“, Saint Petersburg, Russia, June 4–8, 2018.

Полный текст статьи опубликован в английской версии журнала.