



Electrical Properties of Semiconductor Nanoparticles

By Suresh Sagadevan

LAP Lambert Academic Publishing Jun 2014, 2014. Taschenbuch. Book Condition: Neu. 220x150x5 mm. This item is printed on demand - Print on Demand Neuware - Currently, semiconductor nanomaterials and devices are still in the research stage, but they are promising for applications in many fields, such as solar cells, nanoscale electronic devices, light-emitting nanodevices, laser technology, waveguide, chemicals and biosensors. Further development of nanotechnology will certainly lead to significant breakthroughs in the semiconductor industry. The book describes the most important II VI semiconductors with applications in solar cells, optoelectronics and electronic devices. CdS, CdSe, ZnS and TiO₂ nanoparticles were synthesized by the wet chemical method. The crystal structure and grain size of the particles were determined by X-ray diffraction (XRD). The dielectric properties of nanoparticles were studied in the frequency range of 50Hz-5MHz at different temperatures. Further, electronic properties like valence electron plasma energy, average energy gap or Penn gap, Fermi energy and electronic polarizability of the nanoparticles were calculated. 88 pp. English.



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