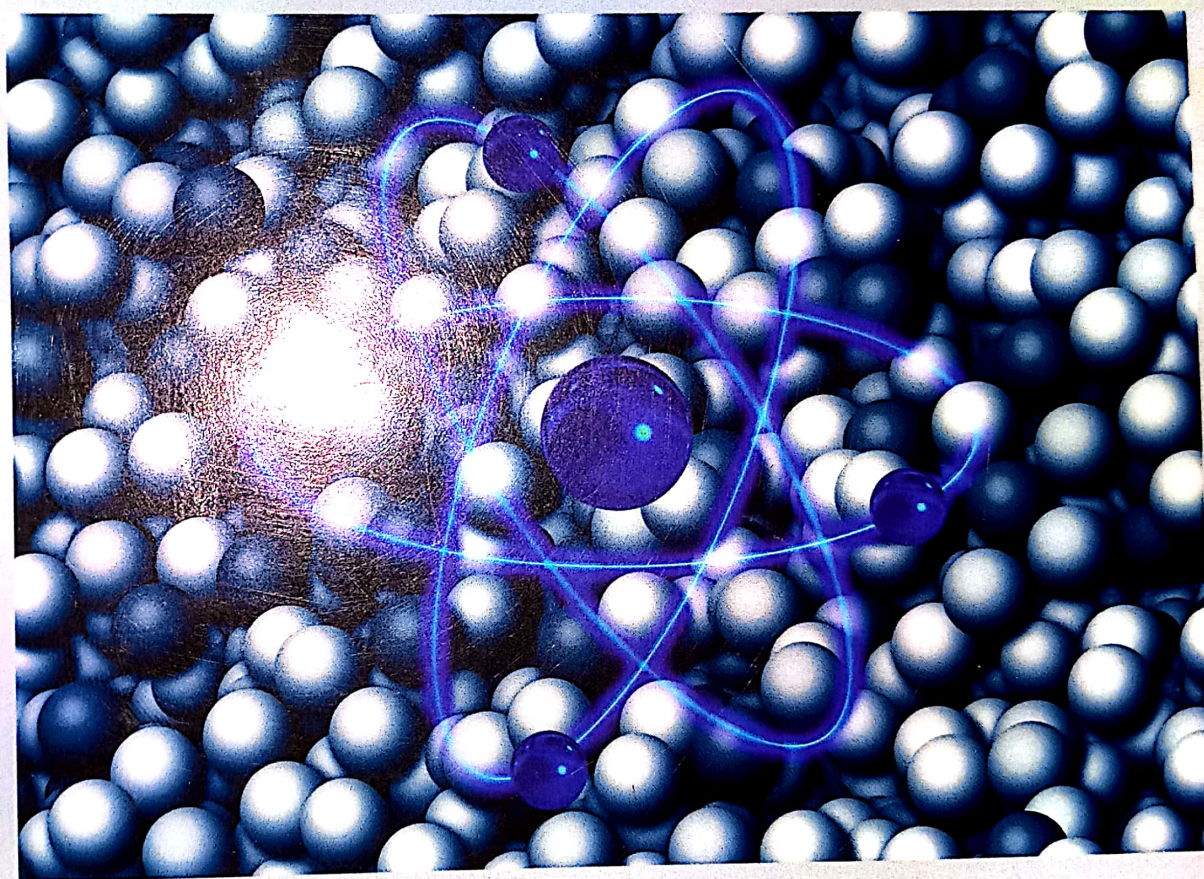


Advances in Nuclear Physics and Condensed Matter



Editor
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Synthesis and Characterization of CdS/PbS Core-shell Nanocomposites for Photovoltaic Application

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Abstract

CdS/PbS core shell has been synthesized through chemical route. CdS shows hexagonal whereas PbS shows cubic structure. The absorption and photoluminescence studies show a red shift of absorption edge and near band gap emission of core CdS when coated with shell PbS. CdS shows bandgap 2.7 eV and PbS 2.2 eV whereas the CdS/PbS nanocomposites show a bandgap of 2.3 eV. The optical properties clearly signify the formation of quasi type II CdS/PbS core shell nanocomposites that can be used for photovoltaic devices.

Keywords: *CdS/PbS core shell, exciton, blue shift, photoluminescence.*

Introduction

Semiconductor nanostructures especially the core-shell nanocomposites have been attracting a tremendous interest owing to their huge possible application in optoelectronic and photovoltaic devices due to their outstanding optical and electrical properties [1-9]. With this motive one cannot rule out the role of II-VI semiconductors as the mentioned properties of these materials are strongly dependent on their size and structural morphology which are easily tunable at