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Title:	Physical properties of ZnSe thin films: Air and vacuum annealing evolution to buffer layer applications
Authors:	Chander, S. (/jspui/browse?type=author&value=Chander%2C+S.)
Keywords:	Buffer layer applications Evaporation Vacuum annealing ZnSe thin films
Issue Date:	2020
Publisher:	Elsevier
Citation:	Physics Letters A, 384(4).
Abstract:	In order to develop high efficiency solar cell device by replacing conventional hazardous CdS window layer by environmental friendly Zn-based buffer layer, ZnSe thin films of thickness 100 nm were grown on glass and ITO substrates employing electron beam evaporation technique followed by air and vacuum annealing at temperature 100 °C, 200 °C and 300 °C. As-grown and annealed films were subjected to characterization tools like XRD, UV-Vis spectrophotometer, SEM, EDS and source meter. Structural results reveal the amorphous phase, SEM images indicate uniform deposition without pin holes and EDS patterns confirm the deposition. Transmittance is observed to be high in visible region and band gap is found to change with temperature of the treatment and I-V measurements demonstrate ohmic nature. On the basis of optimized results, the films annealed at 200 °C in vacuum may be used as buffer layer to develop high efficiency Cd-based and CIGS thin film solar cells.
Description:	Only IISERM authors are available in the record.
URI:	<a href="https://www.sciencedirect.com/science/article/pii/S0375960119310060?via%3Dihub">https://www.sciencedirect.com/science/article/pii/S0375960119310060?via%3Dihub</a> ( <a href="https://www.sciencedirect.com/science/article/pii/S0375960119310060?via%3Dihub">https://www.sciencedirect.com/science/article/pii/S0375960119310060?via%3Dihub</a> ) <a href="http://hdl.handle.net/123456789/3400">http://hdl.handle.net/123456789/3400</a> ( <a href="http://hdl.handle.net/123456789/3400">http://hdl.handle.net/123456789/3400</a> )
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