Cryst. Res. Technol. **39**, No. 11, 1024 (2004) / **DOI** 10.1002/crat.200410288

Book Review

Compound Semiconductor Photovoltaics

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Materials Research Society, Warrendale, PA, USA, Symp. Proceedings, Vol. 763
483 pages, ISBN 1-55899-700-8

This book represents a collection of 70 papers of the MRS Spring Meeting "Compound Semiconductor Photovoltaics" which was held from April 22-25, 2003 in San Francisco, California. The volume deals with the following topics: Defects and Materials Characterization, III-V Photovoltaic Materials, CdTe Interface Characterization, Copper Indium Gallium Selenide (CIGS) Interface Characterization, Materials and Device Characterization, CIGS Materials Synthesis, Transparent and Conducting Oxides, Growth and Junction Formation, and Device Characterization and Formation.

About 40% of the presentations represent solar cell related properties and device applications of CIGS materials. An interesting review article by H. W. Schock shows the actual state of understanding of materials properties of chalcopyrite based thin films. Nature and electronic activity of grain boundaries in poly-crystalline CIGS films, depletion from Cu of CIGS surfaces, junction formation and the important role of back contacts are the main discussed topics of CIGS materials.

CdTe has a considerable potential as a thin film photovoltaic absorber material. Several papers are discussing e.g. the phenomena of self-compensating in connection with DX-centers in heavily In-doped CdTe and ZnTe. The paper (and also several others) "The Dynamics of CdTe etching" given by K. D. Dobson et al. is not only interesting for "photovoltaic people" but also for scientists who are working in other fields of CdTe applications, like detectors for X- and Γ-rays.

Other materials which are discussed in the frame of solar cell applications are: III-V materials like GaSb, InGaAsSb, InGaAsN, InP/Si and HgCdTe, and ZnO.

This volume contains well selected papers focused on basic and applied materials research related to compound semiconductors. This book may be recommended to scientists and engineers working in the field of semiconductor materials and device technology as well as in the field of crystal growth and epitaxy.

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