Thin-Film Compound Semiconductor Photovoltaics—2007

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Thin-Film Compound Semiconductor Photovoltaics—2007

Symposium held April 9–13, 2007, San Francisco, California, U.S.A.

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PREFACE

This volume contains papers from Symposium Y, "Thin-Film Compound Semiconductor Photovoltaics," held April 9–13 at the 2007 MRS Spring Meeting in San Francisco, California. The symposium was one of a regular sequence of international meetings on thin-film solar cells and materials held alternately between the European MRS (E-MRS) and the MRS Spring Meetings.

At the present time, research on advanced photovoltaic cells is gaining increased momentum and popularity as materials solutions to a global energy problem stemming from reliance on fossil fuels are sought. This process starts at the nano-scale where the understanding of atom migration, defect creation, and electrical junction formation forms the base of technology, as emphasized by H-W. Schock (Hahn-Meitner-Institut, Berlin) and S. Shirakata (Ehime Univ., Japan).

It continues at the device scale, where improved efficiencies and new device engineering are implemented notably on flexible substrates as described by A.N. Tiwari (ETH) for bifacial CdTe cells on polymer substrates. Device modeling, presented by J.R. Sites (Colorado State Univ.), and *in situ* monitoring of materials properties such as ellipsometry, presented by R.W. Collins (Univ. of Toledo), are also a key component toward achieving high efficiency. This work effort culminates at the mega- to giga-watt power generating scale, with module manufacturing. D. Eaglesham (First Solar) and C. Eberspacher (Nanosolar) presented the results of their companies on CdTe and Cu(In,Ga)Se_2, respectively, emphasizing the importance of materials science even at that scale.

In several open discussion sessions, the connections between science and industrial practice were highlighted: the enthusiastic participation in all of the oral presentations, poster and discussion sessions of Symposium Y emphasized the importance of exchange and communication, beyond the science.

The organizers were particularly pleased by the success of the Young Scientist Tutorial. Its philosophy was to promote questions and discussion from young researchers and those new to the field, and to have experienced researchers present the tutorial lectures. This format was a resounding success—there were over 200 attendees, many coming from other symposia at the Spring Meeting.

On behalf of all who attended, the organizers offer their thanks to all those who made oral and poster presentations at the symposium, and to the MRS staff who handled the practical arrangements at the Meeting. Thanks also to Sergiu Vatavu and Joel Duenow who were so kind as to act as symposium assistants. We especially appreciate the efforts of those who submitted manuscripts for publication, and to those who participated in the refereeing process. We are also grateful to the MRS publication team who facilitated that process and the publication of this proceedings volume. Daniel Abou-Ras deserves particular thanks for his efforts in organizing the Young Scientist Tutorial, and we thank all the speakers for their superb contributions and course notes.

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