VA 3: Challenging vacuum applications

Time: Monday 14:00–15:30 Location: HSZ 101

Invited Talk VA 3.1 Mon 14:00 HSZ 101

Thin Film Silicon Solar Cells and Modules: From R&D Lab Developments to Large-area Production Tools — •Ulrich Kroll et al. — Oerlikon Solar-Lab SA, Rue du Puits-Godet 12a, CH-2000 Neuchâtel

Up-scaling of thin film silicon solar cells to industrial commercial products of 1 m2 module area is a highly challenging task. Hereby, the transfer of high efficiency device results obtained in small area research-type equipments to large area high performance R&D and high productivity mass fabrication equipment are important issues needed to be solved. Especially the PECVD (Plasma Enhanced Chemical Vapor Deposition) equipment in the thin film production line is one of the most important key elements to bring the module efficiency up and to reduce manufacturing costs.

In a first step, deposition processes are developed and optimized in smaller R&D KAI systems. These process parameters are then transferred to industrial size reactors of 1.4 m2. Following this strategy we achieved recently amorphous silicon p-i-n single-junction and Micromorph (amorphous/ microcrystalline silicon) tandem junction 1.4 m2 R&D solar modules with initial aperture module efficiencies of 9.63% respectively of 9.6 %. These remarkable efficiencies clearly demonstrate the high potential of our PECVD systems.

Based on these results, Oerlikon Solar as an equipment manufacturer is installing production facilities for amorphous silicon and Micromorph PV modules in the range well above several 100 MW capacities for all its customers worldwide.

Invited Talk VA 3.2 Mon 14:45 HSZ 101

Singulus Bluline II BD50 Enabling the Blu-ray Future with Unlimited Space — •Stephan Hotz — Singulus Technologies AG, Hanauer Landstrasse 103, 63796 Kahl am Main

BLULINE II BD50 Enabling the Blu-ray Future with Unlimited Space Hollywood Studios want to take advantage of the enormous storage capacity of a BD50 disc in order to deliver an unprecedented video and audio experience to the home consumer. For this reason, the availability of 50GB dual layer Blu-ray discs is a clear must for pre-recorded formats. The Blu-ray format has definitively established itself as the new standard in the market. High-definition television, HDTV (HD Ready and Full HD), combined with the Blu-ray video format, is the new technology of the media sector. The market introduction of the 50 GB dual layer Blu-ray disc was a show-stopper for the entertainment industry. The high storage capacity of the format enables optimum audio and video high-definition quality and also offers the ability to store bonus material such as additional trailers, interviews with directors and stars as well as BD-Java-based applications, enabling viewers to enjoy an interactive movie experience never before possible. SINGULUS' experience in the field of Blu-ray goes back to its early, exclusive partnership with the format developer Sony in 2005. SINGULUS has also already installed several Blu-ray production lines at the biggest independent disc manufacturers. The SINGULUS Blu-ray Disc production system BLULINE II is designed for the economical production of Blu-ray Discs (BD ROM Single Layer and Dual Layer (BD ROM SL/DL)) according to the specifications issued by the BDA.