

Thin-Film Industry Forum 2010

Thursday, 22nd April 2010

Plenary Session

- 9.00** Welcome and opening words
Karl-Heinz Remmers, Solarpraxis AG
- 9.10** Research for next generation technologies: thin-film perspectives within the German innovation system
State Secretary Dr. Georg Schütte, Federal Ministry of Education and Research
- 9.30** Thin-film industry: Another turbulent year ahead?
Dr. Peter Fath, centrotherm photovoltaics AG
- 9.50** Thin-film and PV markets: Market update – Germany and global
Markus A.W. Hoehner, EuPD Research
- 10.10** Costs and efficiency in thin-film photovoltaics: Impact of the current market environment
Wolfgang Seeliger, LBBW Research Analyst
- 10.25** Hot topics of the moment: What's shaping the thin-film industry in April 2010?
Bernhard Dimmler, Würth Solar GmbH & Co KG
- 10.40** Questions and discussion
- Chair:** *Hans-Christoph Neidlein, chief editor pv magazine*
- 11.00** Coffee break
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Plenary Session

Market perspectives: Technologies, potentials, companies, status, markets, costs

- 11.30** Technology overview: The technologies, differentiators & effects on costs: What happened during the last 12 months? What are the expectations for 2010?
Rutger Schlatmann, PVcomB
- 11.45** Cadmium Tellurid (CdTe)
Florian Holzapfel, Calyxo GmbH
- 12.00** Technology Potential and Market Opportunities for CIS-based Solar Modules
Franz Karg, Avancis GmbH & Co. KG
- 12.15** Amorphous and micromorphous silicon
N.N.
- 12.30** New technologies: Flexible solar cells
Leonie Stigter, Nuon Helianthos
- 12.45** Questions and discussion
- Chair:** *Willi Ernst, CENTRO-SOLAR Group AG*
- 13.00** Lunch
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Forum 1

Production matters: Challenges & optimization potential – Part-I (a-Si/ μ c-Si)

- 14.30** Recent developments in the application of glass for thin-film technology
Jeroen Schotsaert, Asahi Glass Co.,Ltd. (AGC)
- 14.50** Improved TCO (transparent conductive oxides) for thin-film silicon solar cells
Dr. Martin Dimer, VON ARDENNE
- 15.10** a-Si/ μ c-Si tandem junction technology: Towards 10 % efficiency outside the lab
N.N., Applied Materials Inc.
- 15.30** Thin-film silicon deposition – The new KAI MT
Arno Zindel, Oerlikon Solar AG
- 15.50** Switching to fluorine: Greenfield and conversion projects for using on-site generated fluorine as a cleaning gas for thin-film PV
Andreas Weisheit, Linde Electronics, a division of Linde AG
- 16.10** Questions and discussion
- Chair:** *Dr. Olga Papathanasiou, Photovoltaic consultant
Rutger Schlatmann, PVcomB*
- 16.30** Coffee break
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Forum 1

Production matters: Challenges & optimization potential – Part-II (CIGS)

- 17.00** Deposition equipment and processes for CIGS solar cells on rigid and flexible substrates
Dr. Michael Liehr, Leybold Optics GmbH
- 17.20** Laser machining of thin-film CIGS solar cells using ultrashort pulsed laser
Tino Petsch, 3 D Micromac AG
- 17.40** ILGAR: New buffer deposition techniques for volume CIGS production
Jens Eckstein, STANGL Semiconductor Equipment AG
- 18.00** Manufacturing advances in CIGS thin-film deposition equipment
Adelbert Dorotik, Veeco Solar Equipment Inc. AG
- 18.20** Questions and discussion
- Chair:** *Dr. Olga Papathanasiou, Photovoltaic consultant
Rutger Schlatmann, PVcomB*
- 19.00** Dinner
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Forum 2

Module power rating indoor

- 14.30** Power rating of multi-junction devices: Focus on thin-film
Prof. Dr. rer. nat. Franz Baumgartner, School of Engineering ZHAW Winterthur
- 14.50** Thin-film module testing: Simulator / flasher requirements beyond Class A
Ph.D. Harvey Serreze, Spire Solar, Inc
- 15.10** Mastering the spectrum in class-A pulsed solar simulators
Pierre-René Beljean, Pasan SA
- 15.30** Precise measurement of PV products
Detlev Berger, Berger Lichttechnik GmbH & Co. KG
- 15.50** Using Variable Illumination Measurements (VIM) for the in situ monitoring of outdoor degradation of thin-film modules
Dr. Jens Merten, Laboratoire des systèmes Solaires (L2S), Institut National de l'Energie Solaire (INES)
- 16.10** Questions and discussion
- Chair:** *Luc Feitknecht, goMicromorph GmbH*
- 16.30** Coffee break
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Forum 2

Module energy rating outdoor

- 17.00** Errors and uncertainties in kWh/kWp modelling, predictions and measurements
Steve Ransome, Consultant SRCL
- 17.20** Long-term stability and energy yield of a-Si tandem junction modules
Peter Lechner, Schott Solar AG
- 17.40** Measured and Predicted Energy Yield of PV Modules
Sebastian Dittmann, SUPSI
- 18.00** Temperature and irradiance effects on outdoor field performance
Bastian Zinsser, ipe Institut für Physikalische Elektronik
- 18.20** Experience with different solar module technologies in large-scale systems
Manfred Bächler, Phoenix Solar AG
- 18.40** Questions and discussion
- Chair:** *Luc Feitknecht, goMicromorph GmbH*
- 19.00** Dinner
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Thin-Film Industry Forum 2010

Friday, 23rd April 2010

Forum 1

Financing and Bankability

- 9.00** Project finance for thin-film PV:
A leasing company's view
Martin Mayr, UniCredit Leasing S.p.A. – Vienna Branch
- 9.20** Bankability of thin-film PV projects, system installers and modules
Matthias v. Armansperg, ACCELIOS Solar GmbH
- 9.40** Operational strategy drives bankability and facilitates financing for further growth
Hans Kühn, PRTM Management Consultants
- 10.00** Project and corporate equity finance for mid-sized PV companies
Heinz Luchterhand, Kompass Corporate Finance
- 10.20** Performance guarantee for thin-film modules
Steffen Müller, TRUST AG
- 10.40** Questions and discussion
- Chair:** *Michael Fuhs, chief editor photovoltaic*
- 11.00** Coffee break
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Forum 1

Thin-film applications: Challenges and pitfalls – Thin-film in large-scale plants and BIPV

- 11.30** Large-scale applications of thin-film PV around the world
Stephan Hansen, First Solar
- 11.45** Challenges and opportunities of thin-film in the BIPV market
Veit Otto, EuPD Research
- 12.00** The role of the industry's players in North America now and in the future: Focus on thin-film in large-scale plants and BIPV
Thomas Maslin, EER's North America Solar Power Advisory - canceled
- 12.15** State of play for thin-film BIPV worldwide
Claudia Hemmerle, Technische Universität Dresden
- 12.30** Inverters and sub-structures: What matters in thin-film MWp projects?
Christian Dürschner, Solarpraxis AG
- 12.45** Questions and discussion
- Chair:** *Jens Altevogt, RENAC*
- 12.50** Closing remarks
- 13.00** Short lunch break with snacks

Forum 2

Quality assurance and life cycle management

- 9.00** Quality assurance as a means to attract customers
Dr. Gerwin Dreesmann, Business Institute Solar Strategy
- 9.20** QA for adhesives and sealants throughout the assembly process of photovoltaic modules
Ernst Semar, Kömmerling Chemische Fabrik GmbH
- 9.40** QA through to final system commissioning: Experiences, lessons from final acceptance testing, typical problems
Christian Schram, 8.2 Ingenieurpartnerschaft Obst & Ziehmann
- 10.00** Results of the European PERFORMANCE project: QA for output power measurements on PV modules
Dr. Werner Herrman, TÜV Rheinland Immissionsschutz und Energiesysteme GmbH
- 10.20** Experiences with product registration of thin-film products
Stephan Hansen, First Solar
- 10.40** Questions and discussion
- Chair:** *Jürgen Arp, abastrial GmbH*
- 11.00** Coffee break
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Forum 2

Thin-film company round up: Germany and international

- Key issues:** Where do German and international thin-film companies stand? How's the outlook for 2010? What will distinguish the year? What projects are underway and what investments are planned? What's the forecast production capacity for 2010/11?
- 11.30** Nikolaus Meyer, Sulfurcell Solartechnik GmbH
- 11.40** Michael Povlin, Abound Solar
- 11.50** Flora Kuo, NexPower Technology Corporation
- 12.00** Dr. Franz Karg, AVANCIS
- 12.10** Oleg Shutkin, Hevel LLC
- 12.20** Thorsten Ronge, Inventux Technologies AG
- 12.30** Questions and discussion
- Chair:** *Henning Wicht, iSuppli Deutschland GmbH*
- 12.50** Closing remarks
- 13.00** Short lunch break with snacks