



WORKSHOPS 2009

June 11-12



WS 19: Solar Power - opportunities for the glass industry

Presenters: *Ippo Hiekkanen, Glaston Finland Oy, Raimo Nieminen, Glaston America Inc; Markku Rajala, Beneq Oy; Andreas Karpinski, Kuraray Europe GmbH; Olivier Mal, AGC Flat Glass; Bernd Szyszka, Fraunhofer IST; Stephen Byers, Ritec International Ltd; Volker Geyer, Scheuten Solar; Gerhard Stryi-Hipp, BSW Solar*

Course Summary

The course is intended mainly for glass producers and glass processors who wish to learn the solar technologies, opportunities and requirements of various solar applications.

Solar power is currently the fastest growing renewable energy sector and significant glass consumer. This course will provide basic knowledge about the technologies in photovoltaic, solar thermal heating/cooling and solar thermal power generation. We will go through the basic PV and thermal collector types and manufacturing processes and explain how glass is used in these applications. We will go through requirements of PV and solar collector producers for solar glass in number of applications.

Bullet Point Summary

- Solar market review
- Photovoltaic PV technologies
- TCO coatings
- Thermal collectors
- CSP solar thermal power generation
- Surface protection
- Economics of solar power
- Building Integrated PV (BIPV)
- Solar glass performance and processing

Course timetable - Friday 12.6.2009

- 8.30 Welcome
- 8.35 Solar market information
- 9.30 Photovoltaic technologies
- 10.15 Coffee/tea
- 10.30 TCO Coatings
- 11.00 Thermal collectors
- 11.30 CSP solar thermal power generation
- 12.00 Solar glass performance and processing
- 12.30 Lunch
- 13.15 Surface protection
- 13.45 Building integrated PV
- 14.15 Lamination
- 14.45 End of Workshop



solar | glass



Scheuten

TROSIFOL
PVB FILM FOR LAMINATED SAFETY GLASS



WORKSHOP LOCATION:
UNIVERSITY OF TAMPERE, PINNI B
KANSLERINRINNE 1

Registration for Workshops at www.gpd.fi





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THURSDAY 11 June

Structural Properties of Laminated Glass

Presenters: S. J. Bennison & I. Stelzer,
E.I. DuPont de Nemours & Co. Inc

Milestones to better understand the Flat Glass Business (history - today - tomorrow)

Presenter: B. Savaëte, BJS. Différences

Industrial Glass Coating Technologies and systems powered by nanotechnology (Beneq)

Presenter: M. Saikkonen, Beneq Oy

Glass Tempering Process (level1): Fundamental steps in tempering and machine test runs

Presenters: V-J. Kuusiniemi & T. Pesonen & M. Äppelqvist & S. Suominen, Glaston Finland Oy

Glass Bending & Tempering process: Theory and machine test runs

Presenters: V-J. Kuusiniemi & T. Pesonen & M. Äppelqvist & S. Suominen, Glaston Finland Oy

Laminating of Heat treated and other speciality glass

Presenters: M.P. Verleyen, Solutia Europe; M. Rantanen & J. Ala-Savikola, Glaston Finland Oy; R. Giovannini, Glaston Italy; A. Uusikartano, Suomen Turvalasi Tambest; C. Bostick, Consulting Architects; J. Gilleeney, Independent Glass

Glass processing basics for Solar industry specialists

Presenters: R. Nieminen, Glaston America Inc.; I. Hiekkanen & T. Pesonen, Glaston Finland Oy

Understanding glass strength, stress analysis and design methodologies for architectural glass

Presenter: Dr. L. Jacob, Jacob & Associates Pty Ltd.

FRIDAY 12 June

Cutting, Grinding, Washing: Three fundamental steps in Float Glass Processing

Presenters: P. Pokoern, Bohle AG; M. Emonds, ACW

Coated Glass - Applications and markets

Presenter: S. Nadel, Applied Materials

Seeing Through Glass Design

Presenter: C. Bostick, Consulting Architects

Basics of Glass Coating Processes and Coated Glass

Presenters: P. Vuoristo & T. Mäntylä,
Tampere University of Technology

Digital Printing on Glass

Presenters: Y. Ninyo & T. Salenius, DIP Tech Ltd.

Glass Tempering Process (level2): Glass Factory profitability and tempering technology know-how

Presenters: V-J. Kuusiniemi & T. Pesonen & M. Äppelqvist, Glaston Finland Oy; F. Serruys, Saint-Gobain Glass Solutions

Profitability of a Glass Processing Factory

Presenter: K. Heikkilä, Glaston Singapore

Solar Power - Opportunities for the glass industry

Presenters: R. Nieminen, Glaston America Inc.; I. Hiekkanen, Glaston Finland Oy; M. Rajala, Beneq Oy; A. Karpinski, Kuraray Europe GmbH; O. Mal, AGC Flat Glass; B. Szyszka, Fraunhofer IST; S. Byers, Ritec International Ltd.; V. Geyer, Scheuten Solar; G. Strij-Hipp, BSW Solar

New trends in the Infrared Non-contact Temperature Measurement for the glass industries

Presenters: R. Gärtner & E. Drews, Raytek GmbH

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