



# WORKSHOPS 2009

June 11-12



## **WS 03: Industrial Glass Coating Technologies and Systems Powered by Nanotechnology (Beneq)**

**Presenter: Mikko Saikkonen, Beneq Oy**

### **Course Summary**

The latest development of glass coating technologies will be presented by Beneq specialists. Visit at Beneq R&D-facility for Aerosol Coating and Atomic Layer Deposition (ALD) demonstrations.

Emphasis of the presentations and demonstrations will be focused on the processing technologies and the systems for TCO coatings on glass and the novel Atomic Layer Deposition for large area glass substrates.

The workshop will be organized at Beneq's facilities in Vantaa, Finland. Transportation will be organized to/from Vantaa/Tampere.

### **Bullet Point Summary**

- Atmospheric nHALO® & nAERO™ aerosol coating technologies
- TCO coatings for PV and low-E glass
- Large area batch and in-line ALD coating solutions
- Process demonstration at Beneq R&D-facility



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### **Course timetable - 11.6.2009 at Vantaa**

- 13.00 Welcome (working lunch, sandwiches & refreshments)
- 14.00 Technology presentations
  - Beneq aerosol coating technologies nHALO® & nAERO™
  - Beneq Atomic Layer Deposition(ALD) technology for glass
- 15.30 Break
- 15.45-17.30 Process Demonstrations for nHALO® & nAERO™ and ALD
- 18.00 Dinner
- 21.00 Transportation to Tampere (arrival time 23.00)

**Registration for Workshops at [www.gpd.fi](http://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-Savikota, 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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