Abo Akademi University is arranging the ECS Short Course on June 6-7th 2011, in conjunction with the European Coating Symposium (ECS) 2011 in Åbo/Turku, Finland. The course is designed for both industrial professionals who are engaged in coating and thin film technology or printed and organic electronics. During the two days, detailed lectures will be given on coating and drying technologies, characterization of coating fluids, simulation of coating processes, and fundamentals and production of organic solution-processable devices. The course should benefit a wide range of people working in the fields of thin film technology and printed electronics, as well as new personnel wishing to become familiar with these topics. The course is also appropriate for doctorate level university students and successful completion will yield 4 ECTS credits. Written examinations for students will be arranged after the course at times and places that will be decided during the course. The course language is English.

**Detailed Course Program**

**Monday, June 6**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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</thead>
<tbody>
<tr>
<td>08:00-08:15</td>
<td>Welcome and course material handout</td>
</tr>
<tr>
<td>08:15-10:00</td>
<td>Pre-metered coating methods</td>
</tr>
<tr>
<td>10:00-10:15</td>
<td>Coffee Break</td>
</tr>
<tr>
<td>10:15-12:00</td>
<td>Physico-chemical characterization of coating fluids</td>
</tr>
<tr>
<td>12:00-13:00</td>
<td>Lunch</td>
</tr>
<tr>
<td>13:15-15:00</td>
<td>Drying of coatings</td>
</tr>
<tr>
<td>15:00-15:15</td>
<td>Coffee Break</td>
</tr>
<tr>
<td>15:15-17:00</td>
<td>Simulation and scale-up of industrial dryers</td>
</tr>
</tbody>
</table>

**Tuesday, June 7**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>08:15-09:45</td>
<td>Organic solution-processable devices: transistors, memory devices and sensors</td>
</tr>
<tr>
<td>09:45-10:00</td>
<td>Coffee Break</td>
</tr>
<tr>
<td>10:00-11:00</td>
<td>Coating, wetting and drying issues in roll-to-roll processing of organic photovoltaic</td>
</tr>
<tr>
<td>11:00-12:00</td>
<td>Structure formation of organic semiconductors</td>
</tr>
<tr>
<td>12:00-13:00</td>
<td>Lunch</td>
</tr>
<tr>
<td>13:00-15:00</td>
<td>Fundamentals and processing of organic light emitting diodes and organic photovoltaic</td>
</tr>
<tr>
<td>15:00-15:15</td>
<td>Coffee Break</td>
</tr>
<tr>
<td>15:15-17:00</td>
<td>Self-metered coating methods</td>
</tr>
</tbody>
</table>

**June 6 - 7, 2011**

Åbo/Turku, Finland
Dr. Peter M. Schweizer received his Ph.D. in mechanical engineering from the Swiss Federal Institute of Technology in 1979. His career includes, besides post-doctoral research in coating flows at the University of Minnesota with Prof. Scriven, positions in industry including Kodak, ILFORD, and TSE Troller Schweizer Engineering. Since 2001, Dr. Schweizer is responsible for process development at Polytype Converting in Fribourg, Switzerland, a supplier of coating and drying processes and a manufacturer of coating machines. He is co-editor of the book entitled Liquid Film Coating, which appeared in 1997. In 2006, he received the John A. Tallmadge Award for Contributions to Coating Technology from the International Society for Coating Science and Technology (ISCST).

Dipl.-Ing. ETH Gilbert Gugler received his diploma degree in material science and engineering at the Swiss Federal Institute of Technology Zurich in 1992. After graduation he worked in the area of CVD (chemical vapour deposition) and PVD (physical vapour deposition) for space navigation applications. Since 1998, Mr. Gugler works at Ilford Imaging Switzerland GmbH, a coating manufacturer and specialist for high-end photo and inkjet papers. Since 2000 he is responsible for the production technology department at Ilford dealing with new technology development and its transfer to production in the field of multi layer slide die and curtain coating technology. Mr. Gugler is an expert in multi layer curtain coating technology, from the preparation of coating fluids, characterisation of fluids, processing, to the multi layer curtain coating and drying.

Prof. Dr.-Ing. Wilhelm Schabel is head of the Thin Film Technology Group at the Karlsruhe Institute of Technology (KIT). In 2004, Wilhelm Schabel received his doctoral degree in Chemical Engineering in the area of thin film drying. Besides his academic experience and skills, he served as a project engineer at LOFO High Tech Film close to Basel (now belongs to Shinkong Group/Taiwan) in 2007-2008. Dr. Schabel was granted the Carl Freudenberg Prize in 2006, the Arnold Eucken Prize 2007 by the Federation of German Chemical Engineers (VDI-GVC) and in 2008, the L.E. Scriven Award by the International Society of Coating Science and Technology (ISCST). Prof. Schabel is an expert in mass transfer and drying, analytical techniques and a specialist for thin films and industrial coating applications.

Dr.-Ing. Philip Scharfer is head of the group Thin Film Technology (TFT) at Germany’s esteemed Karlsruhe Institute of Technology (KIT) together with Prof. Wilhelm Schabel. The group is supported by KIT’s Elite Future Concept program along with a consortium of industrial organizations including Bayer, BASF and Roche. In 2009, Philip Scharfer received his doctoral degree in Process Engineering at KIT with the highest distinction. Besides his practical skills and his competence as a consultant, Dr. Scharfer is an expert in mass transfer and thermodynamics in thin polymeric films, analytical techniques and numerical simulation tools for industrial film drying applications.

Ir. Ike de Vries studied Chemistry and Biology at the Wageningen University, Netherlands. After graduation in 1985 he was during a period of 3 years a researcher at the Wageningen University. From 1988 to 2006 Ike de Vries was a project leader and process/research engineer in the field of extrusion coating and substrate development for ink jet/photographic paper at Fuji Photo Film. Since 2006, he is a research scientist at the Holst Centre Institute in Eindhoven, The Netherlands. He utilizes his experience to develop new R2R processes for the manufacturing of Organic light emitting diodes (OLED’s) and Organic Photovoltaic (OPV).

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Prof. Ronald Österbacka is currently a Professor of physics at Åbo Akademi University. He is also the co-chair of the Academy of Finland appointed Center of Excellence for Functional Materials and Graduate School of Materials Research. His research interests include electro-optical properties of disordered organic materials and printed organic electronics. He has co-authored more than 130 papers and holds three patents.

Dipl.-Ing. Lukas Wengeler received his Master degree from the University of Aachen (RWTH) in 2008 after investigating coating of porous substrates with ionic liquids for application in liquid (gas-permeation) membranes. Currently he works on his PhD in the Thin Film Technology (TFT) Group at the Karlsruhe Institute of Technology (KIT). His research focuses on processing of functional films for organic electronics. In 2009 he conducted a joint research project at the Holst Centre in Eindhoven on impingement drying of functional films for OLED and OPV applications.

Dipl.-Ing. Benjamin Schmidt-Hansberg is investigating the structure formation in organic photovoltaics within his PhD in the Thin Film Technology (TFT) Group at the Karlsruhe Institute of Technology (KIT) in collaboration with the Light Technology Institute (LTI) and Institute of Nanotechnology (INT). His research focuses on the drying process-structure-material property relationship of solution cast polymer-fullerene films for organic solar cells. For his joint research together with Monamie Sanayi (Max-Planck-Institute of Metals Research) on in-situ investigations of film structure evolution he was awarded the Edward. D. Cohen Innovative Technology Award of the International Society of Coating Science and Technology (ISCST) in 2010.

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Professor Hadj Benkreira (CEng, FIChemE) is currently Vice-President of the International Society of Coating Science and Technology (ISCST) and a founder member of the European Coating Group which organises the biennial series of European Coating Symposia (ECS). He was endowed with a Personal Research Chair at Bradford University, United Kingdom in 1998 for research in Thin Film Coating and in Polymer Processing and has published widely on roll coating flows, including forward, reverse, deformable and gravure and in recent years in Dynamic Wetting in Coating Flows.
### Location

The short course will be held at the Radisson Blu Marina Palace hotel. The hotel is located in the center of Turku along the Aura river. For participants of the ECS Short Course rooms are available at reduced rates:

- **Standard single room**: € 96.00
- **Standard double/twin room**: € 116.00
- **Superior single room**: € 116.00
- **Superior double/twin room**: € 136.00
- **Business single room**: € 176.00
- **Business double/twin room**: € 196.00

All prices include breakfast, taxes, and sauna.

**IMPORTANT** - To benefit from the reduced rates please book your room directly at Radisson Blu before **May 11, 2011** under the reference “ECS2011”.

Radisson Blu Marina Palace Hotel  
Linnankatu 32  
20100 Turku  
Phone: +358 20 1234 700  
Fax: +358 20 1234 740  
Email: reservations.finland@radissonblu.com  
http://www.radissonblu.fi/hotelli-turku/

### Fees

**ECS Short Course Fee**  
**before Feb 15, 2011**  
**after Feb 15, 2011**

- Short Course in Coating Technology: € 550.00  
- Coating and Drying of Thin Films - Fundamentals & Applications with a Special Topic on Printed and Organic Electronics: € 750.00

Please note that the fee does not include Symposium Registration. PaPSaT and FPIRC students pay fees according to their respective doctorate schools.

### Payment and Cancellations

The total amount can be paid by credit card via on-line registration [http://www.ecs2011.eu/](http://www.ecs2011.eu/) or by requesting an invoice.

For cancellations received by **May 20, 2011**, the participation fee will be reimbursed less a processing charge of € 50.00. After this date, no reimbursements can be made. However, it is still possible to nominate a replacement.

### ECS Symposium Chair

Prof. Martti Toivakka  
Center for Functional Materials  
Laboratory of Paper Coating and Converting  
Åbo Akademi University  
Porthansgatan 3  
FI-20500 Åbo / Turku  
FINLAND

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- Martti Toivakka  
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- Jarkko J. Saarinen  
- Pauliina Saloranta  
- Mari Nurmi

### Web site