

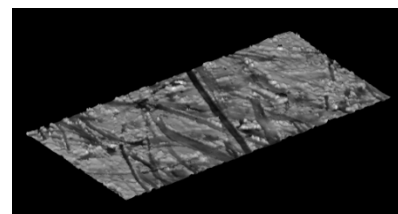
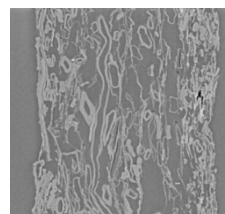
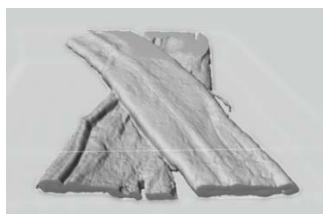
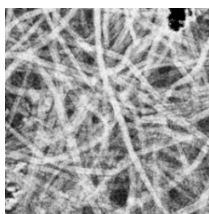
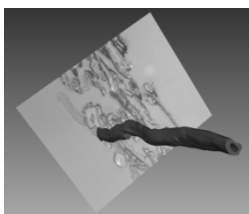
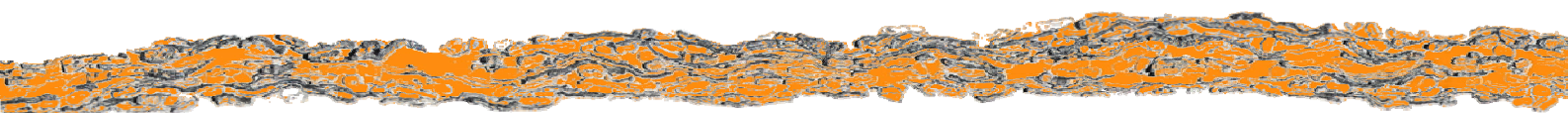


Progress in Paper Physics Seminar

September 5-8
Graz 2011

Conference Program

Final Program as of August 5, 2011



Venue

The Symposium will be held at the new chemistry building at Graz University of Technology, Lecture Hall H (Hörsaal H).

Graz University of Technology
Kopernikusgasse 24
8010 Graz
Austria / Europe

A Google Maps link to the venue can be found here: <http://bit.ly/ppps-2011>

Social Program

Monday, September 5

18:00-20:00 **Welcome Reception** at the seminar venue.

Wednesday, September 7

17:00-19:00 **Guided City Tour**, Meeting point is the seminar venue.

20:00-23:00 **Conference Dinner** at Schlossberg Restaurant.

Friday, September 9

09:30-12:00 **Mill Excursion Sappi Gratkorn**, one of the largest European paper mills producing wood free coated grades. The tour includes bus transfer. Meeting Point is at the seminar venue. Please register per email ppps2011@tugraz.at before August 1, 2011.

Registration

Early Registration (before July 7, 2011)	Regular Registration (after July 7, 2011)
Regular: € 550.-	Regular: € 650.-
Student: € 450.-	Student: € 550.-
Additional ticket conference dinner: € 75.-	Additional ticket conference dinner: € 75.-

Please register online via <http://www.ppps2011.com/registration.php>

Cancellation and Refund Policy: Registration fees, less a €100.- administration charge, will be refunded if cancellation notice is received via email to ppps2011@tugraz.at before August 15, 2011. After this date registration fees are non-refundable. However a substitute person may be nominated to attend the seminar. All refunds will be processed after the seminar.

Accommodation and Travel

Participants in the seminar are kindly requested to make their own hotel and travel arrangements. A taxi from Graz Airport to downtown is approximately €20.-.

We have reserved blocks of rooms at reduced rates in different hotels close to the venue. Please refer your booking to „TU Graz PPS 2011“ to obtain the reduced rate. Please note that reduced room rates are only available on booking before June 30, 2011. For information about the rates and reservations please use the following link: <http://www.ppps2011.com/accomodation.php>

Homepage

For additional information please visit the seminar homepage at www.ppps2011.com.

Seminar Special Sessions: 'Where is the future of paper physics?'

Two keynote lectures and a panel discussion are adding a different focus to the conference: the future development of pulp and paper related research. The keynote lectures will address industry requirements as well as trends in pulp and paper research in Europe. The keynote lectures are aimed to discuss the future of paper research under the perspective of long term economic trends as well as from the view of top management of a large paper producer. The panel discussion will address the current situation, the economic context and the perspectives of applied- and basic research.

Keynote Lectures

September 6, 09h00

'Trends in European Pulp and Paper Research'

W. Förster and S. Schabel

The lecture presents the result of a strategic study on the development of paper industry and the research agendas of large institutions in Europe.

September 7, 09h00

'What does the Industry Need and Expect from the Paper Research Community?'

C. Skilich

C. Skilich is CEO of Mondi Kraft Paper. His keynote lecture will address the requirements to R&D and the trends in pulp and paper research from a top management perspective.

Panel Discussion: 'Where is the future of paper physics?'

September 7, 09h30

The discussion panel is aimed to provide a good balance of representatives in different R&D related functions. It includes researchers from universities and large research institutions as well as industry representatives in technology- and management positions.

<u>Discussion Chairman</u>	C. Naydowsky	Voith Paper	Vice President Chemical Technology
<u>Research Community Representatives</u>	W. Batchelor	Monash University	Senior Lecturer
	S. Schabel	Darmstadt University	Full Professor
	W. Sampson	Manchester University	Senior Lecturer
	N. Gurnagul	FP Innovations	Principal Researcher
<u>Industry Representatives</u>	T. Kraschitzer	Norske Skog	R&D Manager
	C. Skilich	Mondi	CEO Mondi Kraft Paper
	F. a Campo	Stora Enso	Research Advisor
	M. Pichler	Andritz Pulp & Paper	Division Manager Paper Technologies

Scientific Committee

Seminar Chair:

Wolfgang Bauer *Graz University of Technology, Austria*

Program Secretary:

Ulrich Hirn *Graz University of Technology, Austria*

Program Committee:

Warren Batchelor *Monash University, Australia*

Doug Coffin *Miami University, USA*

Jari Hämäläinen *Lappeenranta University of Technology, Finland*

Thad Maloney *Aalto University, Finland*

Samuel Schabel *Technische Universität Darmstadt, Germany*

Tetsu Uesaka *Mid Sweden University, Sweden*

Organizing Committee

Ulrich Hirn
Christoph Knauer
Rene Eckhart
Wolfgang Bauer
Claudia Bäuml

Monday, September 5

09:00	Opening and Welcome	W. Bauer, Ø. W. Gregersen
Session 1	Fiber Properties and Refining	Chair: H.-F. Jang
09:15	Energetic Optimization for Assessing the Shortening Kinetics of Fibres in Pulp Refining	J.-C. Roux, J.-F. Bloch, P. Nortier
09:45	The Role of Multiple Loading Cycles on Pulp in Refiners	J. Heymer, J. Olson, R. Kerekes
10:15	The Impact of Cell Wall Irregularities on the Mechanical Properties of Softwood Fibers	R. Eskola, J. Hämäläinen, T. Leppänen
	Coffee Break	
Session 2	Fiber Network Modeling	Chair: S. Lindström
11:15	Elasticity and Stiffness of Paper: A Model Based Study of the Influence of Fibers	S. Lavrykov, K. Singh, B. Ramarao
11:45	Multi-Scale Simulation of Paperboard Edge Wicking Using a Fiber-Resolving Virtual Paper Model	A. Mark, R. Sandboge, A. Berce, F. Edelvik, E. Glatt, S. Rief, A. Wiegmann, M. Fredlund, J. Amini, R. Lai, L. Martinsson, U. Nymann, J. Tryding
12:15	Micromechanical Network Model for the Evaluation of Quality Controls of Paper	H. Andrä, F. Edelvik, M. Fredlund, E. Glatt, M. Kabel, R. Lai, A. Mark, L. Martinsson, U. Nymann, S. Rief
	Lunch	
Session 3	Printing and Paper Optics	Chair: L. Yang
13:45	Ink Pigment Penetration on Different Surface Sized Papers	T. Costa, J. Gamelas, I. Moutinho, A. Lourenço, M. Margarida Figueiredo, P. Ferreira
14:15	Micro-fluidics in Printing Nip - Liquid Transfer on Random Fibre Network Surface	M. Holmvall, F. Drolet, T. Uesaka, S. Lindström
14:45	A Novel Method for the Determination of Linting Propensity of Paper	A. Gerli, L. Eigenbrood, S. Nurmi
15:15	Paper Dust Determination via Acoustic Waves – A New High Precision Method	A. Kornherr, P. Achatz, G. Drexler
	Coffee Break	
16:15	Kubelka Munk Model in Paper Optics: Successes, Limitations and Improvements	L. Yang
16:45	Effect of Moisture on Paper Color	T. Shakespeare, J. Shakespeare
17:15	Theory on Print Through Caused by Ink Oil. Its Application to Low Basis Weight Newsprints	I. Vadeiko
18:00	Welcome Reception	

Tuesday, September 6

09:00	Keynote Lecture: Trends in European Pulp and Paper Research	W. Förster, S. Schabel
Session 4	Paper and Web Mechanics	Chair: D. Coffin
09:35	Explicit Analysis of the Lateral Mechanics of Web Spans	B. Fu, R. Markum, A. Reddy, S. Vaijapurkar, J. K. Good
10:05	Movement of Layers and Induced Tension in the Nip Area between Drum and Paper Layers	P. Hoffmann, S. Schabel
	Coffee Break	
11:00	Transverse Compression of Paper and Coating	R. Farnood, M. Kortschot, T. Lu and S. Nunnari
11:30	Discriminating Between Different Mechanosorptive Creep Hypotheses	S. B. Lindström, E. Karabulut, A. Kulachenko, L. Wågberg
	Lunch	
Session 5	New Cellulose Based Products	Chair: J. Pawlak
12:50	Swelling of Nanofibrillated Cellulose	M. Manninen, K. Nieminen, T. Maloney
13:20	Elastic Properties of Cellulose Nanopaper vs. Conventional Paper	T. Denoyelle, A. Kulachenko, G. Syvain, S. Lindström
13:50	Intriguing Structural and Strength Behavior in Foam Forming	T. Hjelt, K. Kinnunen, J. Lehmonen, N. Beletski, E. Hellén, V. Liljeström, R. Serimaa, A. Miettinen M. Kataja
14:20	Paper Characteristics Influencing the Deep Drawing Ability of Paper	P. Post, D. Huttel, P. Groche, S. Schabel
14:50	Crash of a Molded Pulp Package	B. Künne, D. Stracke, B. Palm
	Coffee Break	
	Poster Session	
15:45	Poster Slide Presentations	
17:15	Poster Presentation	
19:00	International Paper Physics Committee Meeting	

Wednesday, September 7

09:00	Keynote Lecture: What does the Industry need and expect from the paper research community?	C. Skilich
09:30	Panel Discussion: Where is the Future of Paper Physics?	The panel will comprise representatives from the industry as well as the academic community.
	<i>Coffee Break</i>	
Session 6	Theory of Paper Strength	Chair: W. Sampson
11:30	The Hyperbolic Theory of Light Scattering, Tensile Strength and Density in Paper	G. J. F. Ring
12:00	An Epidemiological Approach Applied on the Break Behavior of the Dry Paper Web	F. W. a Campo
	<i>Lunch</i>	
Session 7	Web Consolidation and Drying	Chair: A. Kulachenko
13:30	Micro-Fluidics of 'Water Bond'	H. Wiklund, T. Uesaka
14:00	Consolidation and Dewatering Mechanisms in Papermaking	A. Tanaka, N. Beletski, S. Haavisto, J. Ketoja
14:30	Paper Machine Simulation with a Modified Servohydraulic Test Rig	H. Rud, C. Frietsch, T. Kasah, J. Rolefs, A. Eichler, M. Feichtinger
15:00	Shear Strength Development Between Couched Paper Sheets During Drying	M. Gimåker, M. Nygård, L. Wågberg and S. Östlund
17:00	Guided City Tour	
20:00	Conference Dinner	

Thursday, September 8

Session 8	Fiber – Fiber Bonding	Chair: S. Östlund
09:00	Insights into Single Fiber-Fiber Bonds Using Atomic Force Microscopy	F. Schmied, C. Ganser, W. Fischer, U. Hirn, W. Bauer, R. Schennach, C. Teichert
09:30	Measuring Bond Strengths of Individual Paper Fibers Using Microrobotics	P. Saketi, P. Kallio
10:00	Inter-Fibre Bond Strength and Combined Normal and Shear Loading	M. Magnusson, S. Östlund
	Coffee Break	
11:00	Effect of Drying and Refining on the Fibre-Fibre Shear Bond Strength Measured through Acid Exposure	K. Joshi, W. Batchelor, K.-A. Rasid
11:30	A Model Approach to Understand the Fiber – Fiber Bond in Paper	R. Schennach, U. Hirn, A.E Horvath, F.J. Schmied, C. Teichert
12:00	Extending the Insight into Fiber-Fiber Bonding by the Use of Cellulose Model Films	E. Gilli, M. Djak, E. Kontturi, R. Schennach
	Lunch	
Session 9	Paper Structure	Chair: J.-F. Bloch
13:30	Revisiting the Voidal Continuum Model for Tensile Strength of Paper: The Interdependence of Pore Size and Relative Bonded Area	W. Sampson, J. Waterhouse
14:00	Quantification of the Web Structure in Relation to Process Conditions During Wet Pressing and Furnish Composition	C. Hii, Ø. Gregersen, G. Chinga-Carrasco, Ø. Eriksen, K. Toven, F. Rosén, H. Vomhoff
14:30	Comparison of Registered Paper Surface Representations from Microtomography and Photometric Stereo	M. Mettänen, M. Jukola, A. Miettinen, H. Ihalainen, T. Turpeinen, J. Timonen
	Coffee Break	
15:30	Image Analysis Technique for the Characterization of Tissue Softness	J. Pawlak, A. Elhammoumi
16:00	Mapping the Compressive Properties of Low Density Fibrous Web Materials	S. Keller, Y. Huang, J. Hyland
16:30	Closing Comments	U. Hirn

Poster Papers (1)

Pulping and Stock Preparation

Cyclic Loading and Fatigue of Wood

L. Salminen, A. Salmi, B. Engberg,
T. Björkqvist, E. Hæggsström and
M. Lucander

Effects of Dry Milling on Physical and Chemical Properties of Pulp

Y.-J. Joung, T. Kim and S. Lee

Influence of Beating and Chemical Modification on the Structural Characteristic of Cellulose

M. Filipi and V. Hejlová

Effect of Recycling on Fibre Morphology

I. Ali, R. Passas, J.-F. Bloch

Effects of Enzymatic Deinking of Mixed Office Wastes on the Deinked Pulp Mechanical Properties

M. H. Aryaie Monfared and
H. Resalati

Fiber Suspensions and Paper Making

Furnish Composition of Newsprint – Effects on Pressability, Paper and Print Quality

Ø. Eriksen, K. Aasarød, G. Chinga-Carrasco and Ø. W. Gregersen

A New Method for Characterizing Turbulent Mixing in Semi-Concentrated Suspensions

P. Krochak, L. Thomsson

Microstructure Simulation of Early Paper Forming Using Immersed Boundary Methods

A. Mark, E. Svenning, R. Rundqvist,
F. Edelvik, E. Glatt, S. Rief,
A. Wiegmann, M. Fredlund, R. Lai,
L. Martinsson and U. Nymann

High and Low Speed Fourdriniers: New Aspects to Consider

J. Cecchini, J. Muhonen,
A. Poikolainen and A. Puurtinen

FiberXPress - A New Device for Evaluating the Press Dewatering Ability of Furnish

S. Plobner, A. Eichler, J. Kritzinger
and W. Bauer

Simulation of Press Dewatering

S. Probst-Schendzielorz, S. Rief,
A. Wiegmann, H. Andrä,
M. Schmitt

Modeling and Optimization of Paper Drying for Optimum Strength Properties

M. H. Ekhtera, K. Villforth and
S. Schabel

Model-Based Optimization in Papermaking Process Design

M. Linnala and J. Hämäläinen

Poster Papers (2)

New Pulp and Paper Products

Multi-Scale Modelling of Cellulose Nanofibers in Paper-Like Applications

J. Ketoja, E. Hellén, J. Lappalainen, J. Sorvari, A. Kulachenko, A. Puisto, M. Alava, A. Penttilä, K. Lumme, S. Paavilainen, L. McWhirter, T. Róg, I. Vattulainen, D. Vidal, T. Uesaka

Vulcanized Fiber as a High-Strength Construction Material for Highly Loaded Construction Units

B. Künne, U. Willms, C. Stumpf

Forming of Double-Curved Paperboard Structures for Packaging Applications

S. Östlund, M. Östlund, S. Borodulina

Improvement of Conductivity of Paper through Layer-by-Layer Multilayering of PEI and PEDOT:PSS

H. J. Youn, J. Lee, J. Ryu, K. Sim, H.-L. Lee

Paper Properties

2D Fibre and Filler Grammage Maps Using Movable Radiation Emitters and Detectors

M. Lucisano, P. Krochak, Å. Hansson, L. Thomsson, J. Lofthus, Bo Norman

Advanced Wire Marks Analysis – A Powerful Tool for Paper Inspection

K. Villforth and S. Schabel

Direct Measurement of Calendar Blackening

J.-K. Bösner and S. Schabel

Ink Penetration in Uncoated Paper Using Immuno-Gold Labeling: Intra-Fiber Diffusion and Wicking.

B. Arthur, R. Smith, S. Lavrykov, B. Ramarao

Influence of Accelerated Aging on Properties of Office Copy Paper

K. Itrić, V. Džimbeg-Malčić, T. Cigula, Z. Barbarić-Mikočević

Paper Mechanics

Numerical Simulation of Tensile Testing Using Stochastically Produced Fibre Networks of Paper

J. Matheas, M. Erdt, S. Altmann

On the Fracture Behavior of Paper

D. Coffin, K. Li

Development of a Tensile Tester with Liquid Applicator and Dryer Unit

J. Kouko

Numerical and Experimental Investigation of Paperboard Folding

H. Huang and M. Nygård

The Effect of Polyethylene on Hygroexpansion of a PE Coated Laminated Packaging Board

S. Paunonen, Ø. W. Gregersen