



Advanced Courses at  
Åbo Akademi Process Chemistry Centre

# Modern Analytical Tools for Pulp and Paper

November 28-December 2, 2011  
Turku / Åbo

In cooperation with



International Doctoral Programme  
in Bioproducts Technology



# Modern Analytical Tools for Pulp and Paper

This course will present the most recent analytical techniques for pulp and paper. It is a combined course for PhD students and researchers from industry and research institutes. For students, who want to earn 8 credits (ECTS) for the course, there will be lectures and workshops starting on Monday the 28<sup>th</sup> of November and ending at noon on Friday the 2<sup>nd</sup> of December. For industry representatives, that want to learn about the top-of-the-art analytical tools but do not need credits, the course begins at Tuesday the 29<sup>th</sup> and ends at noon on Thursday the 1<sup>st</sup> of December.

## Course leaders:

Prof. Stefan Willför, Docent Anna Sundberg,  
Laboratory of Wood and Paper Chemistry

## Course Secretary:

Ekaterina Korotkova

## Contact information:

Ekaterina Korotkova  
Åbo Akademi  
Laboratory of Wood and Paper Chemistry  
Porthansgatan 3  
FIN-20500 Turku  
ekorotko@abo.fi  
phone +358-2-2154626  
fax +358-2-215 4868

## Course venue:

Åbo Akademi University, Gadolinia, Porthaninkatu 3.

## Course fee:

- PhD-students (also PaPSaT) from Finnish universities with the JOO-agreement Free
- Representatives from industry and research institutes 850 €
- Others, please contact Ekaterina Korotkova

The course fee includes lectures, course material, coffee & tea during the breaks, and course dinner (on Tuesday evening).

## Registration:

- Representatives from industry and research institutes, register by *November 18, 2011* by e-mail to [ekorotko@abo.fi](mailto:ekorotko@abo.fi)
- PhD-students (also PaPSaT) from Finnish universities with the JOO-agreement, register to the course by filling in the *electronic* JOO-application at [www.joopas.fi](http://www.joopas.fi). If you come from a university that does not yet use the *electronic* JOO-application, fill in the application in *paper* form (can also be found at [www.joopas.fi](http://www.joopas.fi)), get your own university to recommend you, and then send the *signed, recommended* form to Ekaterina Korotkova.
- Others, register by *November 18, 2011* by e-mail to [ekorotko@abo.fi](mailto:ekorotko@abo.fi)

## Accommodation:

Moderate-price hotels at walking distance are:

Scandic Julia, <http://www.scandic-hotels.com/julia>

Scandic Plaza, <http://www.scandic-hotels.com/plazaturku>

For cheaper accommodation alternatives, please contact Ekaterina Korotkova.

## Links:

- o Homepage of the Laboratory of Wood and Paper Chemistry: <https://www.abo.fi/student/en/traochpapperskemi>
- o Information about Turku/Åbo can be found at [www.turku.fi](http://www.turku.fi)

Ekaterina Korotkova will try to answer all your questions, do not hesitate to ask!

See you in November/December in Turku!

# Preliminary Course Programme

Tuesday, 29.11.

9.30 Registration and coffee

10-12 Sampling, pre-treatment and extraction of different samples  
(wood, pulp, paper, waters, deposits)  
Stefan Willför, ÅA

12.00 Lunch

13.30 - Analysis methods for industry  
17.30 Dr. Eija Bergelin, Nab Labs Oy

Lipophilic and hydrophilic extractives – a mess without  
appropriate analyses  
Stefan Willför, ÅA

Analysis of cellulose, hemicelluloses and pectins: cleaving and  
chromatography  
Anna Sundberg; ÅA

19.00 Course dinner

Wednesday, 30.11.

9.00-12      Near infrared (NIR) spectroscopy of wood, pulp and paper for  
research and industry  
Dr. Karin Fackler, Vienna University of Technology

Physico-chemical properties of hemicelluloses  
Chunlin Xu, ÅA/KTH

12.00        Lunch

13.30-  
17.30        SPME – A versatile technique for methanol, volatile terpenes,  
odorous compounds, cognac aroma etc  
Andrey Pranovich, ÅA

Surface analysis of pulp and paper: XPS, TOF-SIMS, AFM, and  
SEM-EDXA  
Elena Tokareva, ÅA

Analysis of DisCo in papermaking  
Anna Sundberg, ÅA

Flow cytometry  
Lari Vähäsalo, ÅA

Thursday, 1.12.

9.00-12.30 Raman Spectroscopy  
Anna-Stiina Jääskeläinen, VTT

ICP-MS and other techniques for inorganic substances  
Ari Ivaska, ÅA

## PhD STUDENTS´ PART INCLUDES ALSO

Monday, 28.11.

10.00- Welcome  
12.30 Introduction  
Stefan Willför

Chemical microanalytical techniques  
Andrey Pranovich, ÅA

Pyrolysis and thermal chemolysis combined with GC and GC-  
MS  
Andrey Pranovich, ÅA

12.30 Lunch

13.45- NMR spectroscopy  
15.15 Patrik Eklund, ÅA

15-17 Initialization of workshops

Thursday, 1.12.

13.30- Workshops

Friday, 2.12.

9-12 Presentation of workshops