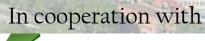
Johan Gadolin Process Chemistry Centre

Advanced Courses at Johan Gadolin Process Chemistry Centre, Åbo Akademi University

# Modern Analytical Tools for Pulp and Paper

November 25-29, 2019 Turku / Åbo







Graduate School in Chemical Engineering

## Modern Analytical Tools for Pulp and Paper

This course will present 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 5 credits (ECTS) for the course, there will be lectures and workshops starting on Monday the 25<sup>th</sup> of November and ending at noon on Friday the 29<sup>th</sup> of November. We strongly recommend that students should have at least a basic knowledge of wood/biomass chemistry and analytical methods before registering.

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  $26^{th}$  and ends at noon on Thursday the  $28^{th}$ .

#### Course leaders:

Docent Chunlin Xu, Docent Anna Sundberg, Laboratory of Natural Materials Technology, research group of Wood and Paper Chemistry

#### Contact information:

Docent Chunlin Xu Åbo Akademi Laboratory of Natural Materials Technology, research group of Wood and Paper Chemistry Porthansgatan 3, FIN-20500 Turku Chunlin.Xu@abo.fi

#### Course venue:

Åbo Akademi University, Gadolinia, Porthaninkatu 3.

#### Course fee:

-PhD students from GSCE and other Finnish Universities with JOO-agreementFree-PhD students from other countries200€-Representatives from industry and research institutes500€-Others, please contact Docent Chunlin Xu500€

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

## Registration:

-Representatives from industry and research institutes, register by *November* 15<sup>th</sup> by e-mail to <u>Chunlin.Xu@abo.fi</u>

- Students at Åbo Akademi register through Peppi and by sending an e-mail to Chunlin.xu@abo.fi

- PhD students from Finnish universities with the JOO-agreement: Register to the course by *November 15<sup>th</sup>* by e-mail to <u>Chunlin.Xu@abo.fi</u> and by filling in the *electronic* JOOapplication at <u>www.joopas.fi</u> and then send the *signed and recommended* form to Chunlin Xu. 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), get your own university to recommend you, and then send the *signed*, *recommended* form to Chunlin Xu. -Others, register by *November* 15<sup>th</sup> by e-mail to Chunlin.Xu@abo.fi

## Accommodation:

Moderate-price hotels at walking distance are:

Hotel Hamburger Börs, https://www.sokoshotels.fi/en/turku/sokos-hotel-hamburger-bors

Centro Hotel, <u>http://www.centrohotel.com/en/</u>

Hotel Helmi, http://www.hotellihelmi.fi/en

Omena Hotel, <u>http://www.omenahotels.com/our-hotels/finland/turku/</u>

Scandic Julia, www.scandichotels.com/Hotels/Finland/Turku/Scandic-Julia/

 $Scandic Plaza, \underline{www.scandichotels.com/Hotels/Finland/Turku/Scandic-Plaza-Turku/}$ 

#### Links:

- Homepage of the Laboratory of Wood and Paper Chemistry: <u>http://www.abo.fi/fakultet/traochpapperskemi</u>
- Information about Turku/Åbo can be found at <u>http://www.turku.fi/</u> and <u>http://www.visitturku.fi/</u>

Questions? Do not hesitate to contact Docent Chunlin Xu! See you in November!

Confirmed speakers:

- Docent Chunlin Xu
- Docent Anna Sundberg
- Docent Andrey Pranovich
- Jonas Konn, Kemira
- Lari Vähäsalo, CH Bioforce
- ...

**Preliminary Lecture Topics** 

- Sampling, pre-treatment and extraction of different samples (wood, pulp, paper, waters, deposits)
- Analysis methods for industry from a chemical company's point of view
- Lipophilic and hydrophilic extractives a mess without appropriate analyses
- Polymerized extractives
- Flow cytometry
- Analysis of DisCo in papermaking
- SPME A versatile technique for methanol, volatile terpenes, odorous compounds, cognac aroma etc
- Fiber properties -standard and advanced analysis of fibers, pulp and paper
- ICP-OES, ICP-MS and microwave digestion in elemental analysis
- Analysis of cellulose, hemicelluloses and pectins
- Lignin analysis and some microanalytical techniques
- Pyrolysis and thermal chemolysis combined with GC and GC-MS
- NMR spectroscopy