

## PhD course

**Surface Interactions of Biomaterials (6 ects)**

Aalto University, School of Chemical Technology, Dept. of Forest Products Chemistry,

The course is arranged in collaboration with  
The Graduate School for Biomass Refining and  
The NordForsk network Refining Lignocellulosics to Advanced Polymers and Fibers

**CONTENTS**

Principles of surface and colloid chemistry. How the surface properties of biomaterials affect their behavior. Dispersion stability including the surface forces affecting stability and how the stability of particles can be affected by surface modification. Important research tools used in surface chemistry, such as atomic force microscopy and quartz crystal microbalance. Polymer adsorption.

**LEARNING OUTCOME**

After the course the student has a general understanding of interfacial science. He/she understands the main factors that affect particle stability and flocculation and is familiar with some common surface sensitive research tools. The student understands the importance of surface chemistry in their own research area.

**Lecturers:**

Prof. Monika Österberg, Prof. Janne Laine, and Prof. Orlando Rojas, Aalto University, Finland

**REQUIREMENTS**

One-week intensive course that includes lectures, seminar and practical demonstrations. Written exam.

**LITERATURE**

Barnes and Gentle "Interfacial Science" and course notes.

**DATE AND PLACE**

October 7-11, 2013. Starting Monday October 7th at 12.

Otaniemi, Espoo, Finland (exact place to be announced later).

**REMARKS**

It will be assumed that students have a basic knowledge of physical chemistry. The student should be prepared to give a 20 min seminar on their own research and how the content of this course relates to their research. Maximum number of students on the course is 30.

**REGISTRATION**

Further information on the course content can be received from the course coordinator, Prof. Monika Österberg, e-mail: [monika.osterberg@aalto.fi](mailto:monika.osterberg@aalto.fi).

For students outside Helsinki, accommodation will be organized in Töölö Towers:  
<http://www.helsinki.fi/international/unihome.html>. Those who need accommodation during the course should contact Satu Kirjoranta latest on September 2<sup>nd</sup>.

Registration on the course latest on September 23<sup>rd</sup> to [satu.kirjoranta@helsinki.fi](mailto:satu.kirjoranta@helsinki.fi)