

PhD course

## Surface Interactions of Biomaterials, 6 ECTS

Aalto University, School of Chemical Technology, Dept. of Forest Products Chemistry,  
Group of Forest Products Surface 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. Janne Laine, Docent Monika Österberg, and Prof. Orlando Rojas, Aalto University

### 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 24–28. 2011, Vuorimiehentie 1, Otaniemi, Espoo, Finland.  
Starting on Monday 24.10 at 12. Get-together party in Monday evening.

### 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.

### REGISTRATION

Fill in the [registration form](#) and send it to [satu.kirjoranta@helsinki.fi](mailto:satu.kirjoranta@helsinki.fi) by 7.10.2011 at the latest. Further information on the content of the course can be received from the course coordinator, Docent Monika Österberg, e-mail: [monika.osterberg@aalto.fi](mailto:monika.osterberg@aalto.fi).