



**PhD-course, May 30 - June 3, 2016, 4 ECTS**

## **“Advanced experimental techniques for characterising interactions of water with wood”**

It is important to consider interactions of water with wood and other biomaterials when using these materials for structural applications, physical/chemical modification processes, intentional degradation (biofuel), or when trying to prevent unwanted degradation (decay). This PhD-course offers a chance for young researchers to be updated with state-of-the-art techniques for characterisation of water in wood.

The course is held at University of Copenhagen and is given by experienced researchers from Denmark, Sweden and USA. Furthermore, this course is a chance to network with fellow young researchers from across Europe while enjoying springtime in Southern Scandinavia.

We look forward to welcoming you in Copenhagen!

### **Lecturers**

**Tina Jeoh, University of California Davis**

is a pioneer within advanced Low-field NMR methods for detailed characterisation of water in biomass.

**Lars Wadsö, Lund University**

has for 25+ years worked with micro-calorimetric techniques for investigating energy aspects of water interactions with wood and other materials.

**Maria Fredriksson, Lund University**

is specialised in water interactions with wood at very high water activities using Pressure Plate techniques.

**Lisbeth G. Thygesen, University of Copenhagen**

has for 20+ years used and developed spectroscopic techniques for characterising physical and chemical properties of biomass and its interaction with water.

**Emil E. Thybring, University of Copenhagen**

is specialised in effects of water on wood properties on nano-, micro- and macro-scales, and in using advanced Dynamic Vapour Sorption techniques.

### **Tentative program**

<b>Day 1</b>	Course introduction and participant presentations Lecture: Basic theory of interactions of wood with water
<b>Day 2</b>	Lecture: Dynamic Vapour Sorption and Infrared Spectroscopy Hands-on: Lab-work and data analysis
<b>Day 3</b>	<i>Excursion to Lund University, Sweden</i> Lecture: Micro-calorimetry and Pressure Plate Techniques Hands-on: Data analysis
<b>Day 4</b>	Lecture: Low-field NMR Hands-on: Lab-work and data analysis  <i>Dinner in downtown Copenhagen</i>
<b>Day 5</b>	Lecture: Advanced 2D Low-field NMR Hands-on: Data analysis

UNIVERSITY OF COPENHAGEN  
DEPARTMENT OF GEOSCIENCES AND  
NATURAL RESOURCE MANAGEMENT

**Interested?**  
Send a mail to [eet@ign.ku.dk](mailto:eet@ign.ku.dk)  
to receive updates about  
course program, registration,  
accommodation, etc.

