

## Programme

Version October 31

# Lund Laser Centre Research and Strategy Day

November 3, 2010

Star Hotel, Glimmervägen 5, Lund

Welcome to a day of science, interaction and inspiration! The LLC arranges this event for sharing of results and ideas, fostering of collaboration and furthering the goals and vision of the LLC and its Linnaeus programme. The LLC Research Committee is working on a Linnaeus supported research programme for the coming three years, and is supported in this effort by our International Advisory Committee. The goal of the day is to strengthen the LLC ambitions to serve as a base for continued excellence in the fields of lasers, spectroscopy and photonics - basic, applied and interdisciplinary. The meeting is thus also instrumental in shaping our future activities.

08:45 Registration

09:00 Opening and welcome  
Presentation of the Research Committee and the  
International Advisory Board C.-G. Wahlström

09:05 The LLC and its Linnaeus Grant Past - Present - Future Sune Svanberg

### **Spectroscopy and diagnostics**

9.30 *Introduction* Marcus Aldén

*Fundamental spectroscopy:*  
9.40 Atomic astrophysics Hampus Nilsson

*Diagnostic applications:*  
9.55 Combustion diagnostics Zhongshan Li

10:15 **Coffee break**

*Diagnostic applications, cont'd*  
10.45 Multi-disciplinary diagnostics Gabriel Somesfalean

*Soot/ macromolecule diagnostics and climate influence:*  
11.00 Diagnostics of soot properties Per-Erik Bengtsson  
11.15 Formation and dynamics of macromolecules Frederik Ossler

### **Biophotonics**

11:30 Cross-disciplinary spectroscopy in biophotonics Stefan Andersson-Engels

11:45 Clinical laser medicine applications  
in a multi-disciplinary setting Katarina Svanberg

**12:00 Lunch**

**Accelerator related technique developments**

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|-------|---|-----------------|
| 13:15 | Introduction                                  | C.-G. Wahlström |
| 13:20 | Laser-driven beams of electrons and X-rays    | Olle Lundh      |
| 13:35 | High-harmonic seeding of free electron lasers | Erik Mansten    |

**Structural dynamics**

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|-------|--|---------------------------------|
| 13:50 | Structural dynamics – Issues and tools       | Villy Sundström                 |
| 14:10 | Structural dynamics in chemistry and physics | Arkady Yartsev<br>Sophie Canton |

**14:45 Coffee**

**Structural dynamics, cont'd**

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|-------|---|----------------|
| 15:15 | New radiation sources for structural dynamics | Jörgen Larsson |
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**Multi-dimensional spectroscopy and single molecule detection**

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|-------|--|-----------------------------|
| 15:35 | Coherent multidimensional spectroscopy at LLC:<br>Recent achievements and future perspectives:<br>Attochemistry with UV pulses | Tonu Pullerits              |
| 15:55 | Advanced pulse trains for photon echo spectroscopy   | Lars Rippe                  |
| 16:05 | Why do we want to detect single ions in quantum computing?<br>How do we detect single molecules at Chemical Physics?           | Yan Ying<br>Ivan Scheblykin |

**16:20 General discussion:**

How to achieve the goals of the LLC Linnaeus programme and to make the LLC as successful as possible

**17:00 End of Meeting**