



The Nordic Lipidforum proudly presents a seminar on

## Contemporary methodologies for analysis and characterization of lipids

**At the Arrhenius Laboratories, Stockholm University  
23 – 24 August 2016**

The seminar, which is organised in conjunction with the Dept. of Environmental Science and Analytical Chemistry (ACES), Stockholm University, will cover methodologies of selected areas important and useful for lipid analysis and characterization. The aim is to review each area with examples and applications for industrial and quality control work, as well as for research purposes.

### Selected areas:

- **Shotgun lipidomics** Direct infusion of lipid extracts or samples in the mass spectrometer allow absolute quantification of hundreds of lipid molecular species. This opens interesting possibilities for the analysis of both industrial lipid samples and basic investigation of biological tissues.
- **NMR Spectroscopy** is an excellent tool to analyse lipid composition in several ways without chemical treatment of the sample. Fatty acid composition based on unsaturation (i.e. quantitative  $\omega$ -3 determination), quantification of lipid classes (i.e. phospholipids and glycolipids), investigation of oxidation products, and presence of impurities are some examples of applications.
- **Supercritical Fluid Extraction (SFE) and Chromatography (SFC)** Recent development regarding gas-expanded liquids for chromatography and extraction has turned this field into an interesting option for fats and oils and other fatty components.
- **Oxidation** Classical methods to investigate the progress of oxidation are in many cases not conclusive or sufficient. Advanced methods such as dynamic headspace analysis can be helpful in order to design the ability for oxidation of lipid products and the strategy for their protection.
- **HPLC and GC in lipid analysis** These techniques are widely used by lipid analysts. Non-traditional packing materials have made separations of lipids easier and more versatile, which is useful for both quality control and research. Phenyl substituted silica is an example of a packing material useful for all types of lipid separation.
- **Chemometrics** Modern analytical tools provide a vast amount of data, which increasingly demands for the use of chemometrics or multivariate statistical methods. For the lipid analyst this is highly applicable in quality control work but also for design of methods and experiments.
- **Sample preparation** In the analysis of lipid samples, it is essential that the procedure does not discriminate between lipid components and is environmentally safe. This has to be achieved by the use of proper extraction and work-up techniques. The choice of solvents for chromatography needs similar consideration to maintain a safe working environment.



## Program

### Tuesday 23 August

- 10:00 - 11:30      **Registration**  
11:30              **Introduction** - Bengt Herslöf  
11:40              **Oxidation** - Charlotte Jacobsen  
12:15              Lunch  
13:30              **Shotgun lipidomics** - Christer Ejasing  
14:15              **NMR Spectroscopy** - Berndt Diehl  
15:00              Coffee break  
15:30              **Supercritical Fluid Extraction (SFE) and Chromatography (SFC)** - Charlotta Turner  
16:15              Exhibitors / posters
- 19:00                      **Seminar dinner**

### Wednesday 24 August

- 09:00              **Chemometrics** - Magnus Åberg  
09:45              Coffee break  
10:15              **Sample preparation** - Jan Holmbäck  
11:15              **HPLC** - Petter Olsson  
11:45              **GC** - Annlouise Lomnitz  
12:15              **Concluding remarks**  
12:30              Lunch – See you all at EFL 2017 in Uppsala

### Speakers:

- **Charlotte Jacobsen**, Division of Food Technology, Technical University of Denmark, National Food Institute, Kgs. Lyngby
- **Christer Ejasing**, Dept. of Biochemistry and Molecular Biology, VILLUM Center for Bioanalytical Sciences, University of Southern Denmark, Odense
- **Bernd Diehl**, Spectral Service, Cologne, Germany
- **Charlotta Turner**, Dept. of Chemistry, Center for Analysis and Synthesis, Lund University
- **Magnus Åberg**, Dept. of Environmental Science and Analytical Chemistry, Stockholm University
- **Petter Olsson**, Fresenius Kabi, Kungsängen
- **Jan Holmbäck**, Lipidor AB / Dept of Environmental Science and Analytical Chemistry, Stockholm University
- **Annlouise Lomnitz**, AAK, Karlshamn



**Seminar language:** English

**Poster presentations:**

Participants are invited to submit poster presentations linked to any of the areas described above. Abstracts are limited to 2500 characters.

**Seminar fee (SEK) which includes two lunches, coffees and seminar dinner:**

Non-members:	SEK 2700	(EUR 300)
Members of Euro Fed Lipid and Lipidforum:	SEK 2000	(EUR 220)
Students, non-members:	SEK 1500	(EUR 165)
Students, members:	SEK 1000	(EUR 110)

**Deadline for registration and poster abstract submission:** 1 August 2016

**Accommodation:** Help with hotel accommodation can be provided.

**Registration:** Fill in registration [here](#).

**For more information and questions, please contact:**

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**Public transportation:**

Information is available on the Stockholm University website [here](#).

Maps of the campus is available at [this webpage](#).



**See you in Stockholm!**

