Advances in Liquid-phase Separation Techniques for Metabolomics

21 May 2016, 10:00 – 16:00
Leiden University, Leiden

Content

Liquid chromatography-mass spectrometry (LC-MS) and capillary electrophoresis-mass spectrometry (CE-MS) have emerged as powerful complementary analytical separation techniques in the field of metabolomics. This course will provide an overview of the main principles governing modern liquid-phase separation techniques hyphenated to high-end MS instruments. New column technologies and miniaturized systems that enhance peak capacity, selectivity and sample throughput will be considered with a special focus on their potential for large-scale biomedical/clinical studies. Novel interfacing techniques for coupling CE to MS will also be discussed. Representative examples will exemplify the potential of the recent developments in LC-MS and CE-MS for metabolomics. Overall, the primary objective of this workshop is to highlight the current state-of-the-art regarding separation techniques in metabolomics.

Target audience

The course is taught in the framework of the MSc+ program for talents in Master education (University). Therefore, the course is well fit for employees at that level.

Topics & Agenda

- Metabolomics: concepts and analytical workflows
- Developments in LC column technology
- Capillary electrophoresis-mass spectrometry
- Representative metabolomics applications

09.30-10.00: Arrival, coffee & tea
10.00-11.00: Metabolomics: general introduction and workflows
11.00-12.00: Advanced LC systems for metabolomics
12.00-13.00: Lunch
13.00-14.30: Capillary electrophoresis-mass spectrometry for metabolomics
14.30-15.00: Coffee/tea
15.00-16.00: Metabolomics applications

Lecturer

Dr. Rawi Ramautar, Assistant Professor, Division of Analytical Biosciences, Leiden Academic Center for Drug Research, Leiden University, the Netherlands

Rawi Ramautar received his M.Sc. degrees in Pharmacochemistry and Analytical Sciences from the Vrije Universiteit Amsterdam. He obtained his doctoral at the Utrecht University on the development of capillary electrophoresis-mass spectrometry (CE-MS) methods for metabolic profiling studies. Currently, he is an assistant professor in the Analytical Biosciences division of prof. dr. Hankemeier at Leiden University. His current research interests include the development of nanoscale separation techniques and workflows for metabolomics studies. Dr. Ramautar has co-authored more than 40 peer-reviewed articles and given over 60 (invited) lectures at conferences, universities and companies.

At the end of the course, the candidate is able:

- to explain the concept of metabolomics and how to set-up an analytical workflow to address a biological/clinical question
- to explain the basics of modern liquid-phase separation techniques
- to select on the basis of the acquired separation science principles a proper separation technique for a given metabolomics study
- to discuss the strengths and limitations of modern liquid-phase separation techniques for clinical/biomedical metabolomics studies

Course duration and time investment

Course duration:	1 day from 10:00 till 16:00
Company time:	0 hours (as this course is on a Saturday)
Participant's investment:	1 day + optional self-study

Extra Information

This course is part of the Saturday's program of MSc+ and is taught every two years.

Course fees:

- €800 (ex. BTW/VAT) per day
- COAST members pay a reduced fee of €400 per day (ex. BTW/VAT) or use a wildcard
- ASTP / MSc+ students: Free

Special fees can be offered to PhD students and companies registering for three or more persons.

For up-to-date information about the course program visit our website at www.ti-coast.com/L3.

Please contact us for more information.

Registration

To register fill out, sign and email the form attached to lifelonglearning@ti-coast.com .

Registration Form

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Name	
Organization	
Address	
Billing address (if different from above)	
Educational background	
Email address	
Phone number	

Payment

☐ I will pay the full course fee of €800 per day (ex. BTW/VAT)
☐ I qualify for 50% discount, because my employer is a COAST participant, and will pay €400 per day (ex. BTW/VAT)
☐ I am a PhD student and will pay €400 per day (ex. BTW/VAT)
☐ I am a PhD student from a group participating in COAST and will pay €200 (ex. BTW/VAT) per day
☐ I have received a wildcard from: …….. Therefore, I will follow this course for free (note: this person must receive a copy of your registration mail, to indicate approval)

Date: **Place:**

Signature:

To register, please email the duly signed registration form to lifelonglearning@ti-coast.com