

Co-organisers: Danish Society for Analytical Chemistry, and BioPeople

1st Nordic Symposium on Multidimensional Chromatography

Date: Friday 14th November 8.30 – 16.30, Auditorium A2-70.03

Location: University of Copenhagen, Faculty of Science, Thorvaldsensvej 40, Frederiksberg C

Organizers: Jan H. Christensen and Nikoline J Nielsen, University of Copenhagen, Tuulia Hyotylainen, Steno Diabetes Center A/S, and Asger B. Hansen, Haldor Topsøe A/S,

The peak capacity of one-dimensional chromatographic systems such as LC, GC, CE and SFC is often insufficient to provide baseline separation of compounds in complex mixtures such as in environmental, biological, petrochemical, and food samples, but also in the pharmaceutical industry one-dimensional systems are often not able to provide sufficient separation of impurities. Multidimensional chromatography allows separation of complex mixtures by using multiple columns with different stationary phases. These columns are coupled with an interface that allows the fractions from the first column to be selectively transferred to other columns for additional separation. The main topics of the 1st Nordic Symposium on Multidimensional Chromatography cover the fundamentals of comprehensive multidimensional chromatography, where all fractions from the first (or second) column are transferred to the second (or third) column for additional separation. Four international experts will give 6 hours of lectures.

Program

08.30 – 09.00 *Registration, coffee and exhibition*

09.00 – 09.05 *Welcome*

Session 1: INTRODUCTION TO COMPREHENSIVE MULTIDIMENSIONAL CHROMATOGRAPHY AND TWO-DIMENSIONAL GAS CHROMATOGRAPHY

09.05 – 10.35 **Hans-Gerd Janssen**, Unilever Research and Development, Vlaardingen, the Netherlands.

Dr. Janssen is head of the chromatography and mass spectrometry expertise group. Since 2004 he also is a part-time professor at the University of Amsterdam. Dr. Janssen's research areas include applications and theoretical aspects of all types of chromatography and mass spectrometry, especially method development for analyses using multidimensional and hyphenated liquid chromatographic, gas chromatographic and mass spectrometric techniques.

Session 2: COMPREHENSIVE TWO-DIMENSIONAL LIQUID CHROMATOGRAPHY

10.45 – 12.00 **Dwight Stoll**, Department of Chemistry, Gustavus Adolphus College, USA.

Dr. Stoll is assistant professor in the chemistry department at Gustavus Adolphus College, where he mainly teaches quantitative and instrumental analysis courses, in addition to directing a vibrant research program involving mainly undergraduate students. His active research projects include the development of rapid multidimensional liquid chromatography for targeted analysis in complex matrices, and optimization of isocratic and gradient elution HPLC.

12.00 – 13.00 *Exhibition and lunch*

Session 3: CHIP-BASED THREE-DIMENSIONAL LIQUID CHROMATOGRAPHY SEPARATIONS AND NOVEL "MODULATORS" FOR LCxLC

13.00 – 14.15 **Peter J. Schoenmakers**, van't Hoff Institute for Molecular Sciences, University of Amsterdam,

Prof. Schoenmaker is head of the Analytical Chemistry group at University of Amsterdam. His research interests include analytical separations (chromatography and mass spectrometry) and their applications to large molecules. A specific focus in recent years has been on the theory and application of comprehensive two-dimensional liquid chromatography and recently in development of novel chip-based three-dimensional separation systems. In 2011 he was awarded the Chromatographic Society Martin Medal awarded to scientists who have made outstanding contributions to the advancement of separation science.

14.15 – 15.15 *Exhibition and coffee break*

Session 4: THE COMBINATION OF SUPERCRITICAL FLUID AND LIQUID CHROMATOGRAPHY FOR COMPREHENSIVE TWO-DIMENSIONAL SEPARATIONS

15.15 – 16.30 **Isabelle François**, Separation Specialist, Waters Benelux

Dr. François conducted her PhD research in the lab of Prof. Pat Sandra at Ghent University in Belgium. During her research, she developed two-dimensional comprehensive fluid-based chromatography approaches (LCxLC and SFCxLC), focusing on the improvement of instrumental hardware. Her areas of expertise are UHPLC, SFC, comprehensive and heart-cutting 2D chromatography (LCxLC, SFCxLC) with optical detectors and MS.

16.30 – 16.35 *A few final words from the organizers*

Registration on-line: www.biopeople.dk. The symposium is free. Registration is required.