



LIQUID CHROMATOGRAPHY: 2D or not 2D?

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Abstract:

There are two reasons to perform comprehensive two-dimensional liquid chromatography (LCxLC). The first is to increase the number of components that may possibly be separated. The peak capacity of LC systems has been increased significantly by the advances in instrumentation and column technology. Many hundreds of peaks can be accommodated in a single LC run. Patient researchers may even reach a peak capacity of 1000 (in about a day). While impressive, these results are still well short of the most ambitious targets. For example, the human proteome is assumed to contain some 50,000 proteins. The use of LCxLC constitutes a significant step in the right direction. Using this technique a peak capacity of several thousand can be achieved within a reasonable time (one or two hours). The second reason why LCxLC may be advantageous is the possibility to generate structure chromatograms, which can be readily and rigorously interpreted. This is true for samples of polymers, which have a limited sample dimension, implying that only a few characteristics (e.g. molecular weight, end groups) differ between the different molecules in the sample. It may also be true in other situations, such as the oxidative stability of pharmaceutical preparations. In this lecture the potential and practical performance of one-dimensional LC and LCxLC will be compared. Different ways of performing LCxLC will be discussed and we will take a peek into the future. Is LCxLCxLC a realistic option?

About the Speaker:

Peter Schoenmakers obtained a Masters Degree in chemical engineering from the Technical University of Delft, The Netherlands in 1977. After a research project on reversed-phase liquid chromatography that included a year at Northeastern University (Boston, MA, USA) with Professor Barry Karger, he obtained his Ph.D. from Professor Leo de Galan in Delft (1981). After fulfilling his military service, he had a career in industrial R&D, first at Philips (Eindhoven, NL; 1983-1992) and subsequently at Shell (Amsterdam, NL and Houston, TX, USA; 1992-2002). In 1998 he became a part-time professor in Polymer Analysis at the University of Amsterdam. Since 2002 he is a full-time professor. He teaches analytical chemistry to students in the BSc chemistry and MSc analytical sciences programs, as well as to students in forensic science and art conservation. 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.

Peter Schoenmakers is active in the organization of several successful symposium series. He is a member of the permanent scientific committee of the HPLC series of conferences and chairman of the symposia on the Separation and Characterization of Natural and Synthetic Macromolecules (SCM) and Hyphenated Techniques in Chromatography (HTC). He has been editor of the Journal of Chromatography A since 2003.

Location:
ACE Center
800 Ridge Pike
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phone (610) 825-8000

Times:
Executive Mtg - 5:00 pm
Social "Hour" - 5:45 pm
Dinner - 6:30 pm
Presentation - 7:30 pm

Directions:
Below

Cost of Dinner:
\$30 or MC/Visa /AmEx

NOTE TO STUDENTS: Full-time students with valid ID may attend dinner meetings at half price. **Faculty members at colleges and universities are urged to bring one or more students to the meeting. If they do, they also can attend at half-price.**

Dinner Choices: Buffet.

For Reservations:

Please register/call before 4 p.m., **Thursday, November 12, 2009**. Please note that "no-shows" will be billed for the dinner.

Late reservations: We still want you to attend, so e-mail us now.

Contact: We strongly recommend online registration <http://www.cfdv.org> but you can also e-mail sheree@cfdv.org, or FAX 610-485-9467. For FAX/e-mail, please include your name, employer, work telephone & meal choice. Alternatively, call Ms. Sheree Gold at 610-485-3479 and provide same information.

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***** Call for Nominations *****

Chromatography Forum Award

This award is announced annually and given to a member of the **Chromatography Forum of the Delaware Valley** who has distinguished herself/himself in service to the Forum and contributions to chromatography. Each year the **Forum** seeks to select a deserving awardee.

Nominations should include a statement of the nominee's contributions to the Forum and the contributions to separation science. A seconding letter is not required by strongly recommended. There is no restriction on the length of or content of submission. The deadline for submission is November 30, 2009. Send nominations to:

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