

Chiral Bonded Phases- Choosing RPLC, NPLC or SFC?

Dr. Richard A. Henry
The Pennsylvania State University

Abstract: Excellent enantiomer separations can be accomplished under normal phase or reversed phase HPLC conditions using modern bonded chiral stationary phases (CSPs). Some packed columns even work well in both modes. Separation mechanisms are often described in terms of stationary phase 3-D cavities that snugly fit certain molecules and provide different complexation energies for left-handed and right-handed isomers. Since polar functional groups are required in order for a bonded phase to interact effectively in this manner, normal phase HPLC, where polar interaction controls retention, has remained more popular than other types of HPLC such as reversed-phase or ion-exchange. This talk will review recent developments in bonded CSPs, including Cyclodextrins, Macrocylic Glycopeptides, and Polycyclic Amines, and compare results under reversed-phase and normal-phase operating conditions. SFC experiments with high fluidity mobile phases using the same columns will also be described and compared. Some unique advantages of SFC for both chiral and achiral separations will be discussed and weighed against the disadvantages.

About the Speaker: Dr. Richard A. Henry received his B.S. degree in Chemistry from Juniata College, Huntingdon, PA and Ph.D. in Analytical Chemistry from Penn State University, University Park, PA. After a teaching appointment and postdoctoral position in separations with Professor L. B. Rogers at Purdue University, he joined DuPont at the Experimental Station in Wilmington, DE in 1967, where he worked at Caruthers Lab and Central Research before becoming one of the first employees of the Analytical Instrument Products Division. Dick worked closely with Dr. Jack Kirkland in the development of novel LC packing materials. After building a strong LC applications group at DuPont Instruments, Dick joined Spectra-Physics in the San Francisco Bay Area, where he helped establish their presence in the HPLC Market. In 1985, he founded Keystone Scientific, Inc., in Bellefonte, PA to serve the column needs of the analytical HPLC community with a particular emphasis on reduced-bore technology. The Keystone philosophy was unique at the time in that the company supported a sophisticated machine shop that manufactured many of its own parts to prepare custom and novel LC column designs. In addition to LC hardware and columns, Keystone also manufactured special LC bonded phases that imparted extra selectivity for different analytical applications. Dick retired from Keystone in 2002 after it was sold to Thermo Corporation. Dick was also Professor of Analytical Chemistry (retired emeritus) and Director of Analytical Laboratories at Penn State University in University Park, PA from 1985-2001, and taught a two-semester Instrumental Analysis Course to chemistry majors. He is currently active as a consultant in liquid phase separations and can be reached at rhenry@psualum.com.

Location:
D'Ignazio's Towne House
117 Veterans Square
Media, PA 19063

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

Below is a current list of the 2006/2007 CFDV Executive Committee. Please contact any member of the committee for information about the Forum or to find out how to participate in the Forum or to find out how to participate in Forum Activities. The CFDV website is <http://www.cfdv.org>

President: Bill Barber - Agilent Tech.
(302) 633-8309

Program Chair: Mike Koenigbauer - AstraZeneca
(302) 886-8186

Treasurer: Dave Kohler - ES Industries
(856) 753-8400

Secretary: Carole Crowe - GlaxoSmithKline
(610) 879-1722

President - Emeritus: Ed Careno - Merck & Co.
(215) 652-8539

Dinner Choices: Chicken Breast with Wild Rice Stuffing, Baked Salmon, or Eggplant Parmesan with marinara Sauce
Please specify choice of entree when making dinner reservations.

For Reservations:

Please call before 4 p.m., **Wednesday, May 30**. Please note that "no-shows" will be billed for the dinner.

Late reservations: We still want you to attend, so call now. However, we cannot guarantee your entrée selection for dinner.

Contact: Sandy Huff at (800) 356-6140, Fax (856) 753-8484 or Email at esindustries@msn.com. Please include your name, employer and work telephone number.

Directions to the Towne House

Take I-95 to the Blue Route, I-476; take Exit 3 (Media). Go west on Baltimore Pike past intersection of Rt. 252. The Towne House is 10 blocks further, on the right corner of Veterans Square.

Please note:

In inclement weather, cancellations will be accepted up to 3:00 pm on the day of the meeting. If the meeting is cancelled, you will be notified by phone

***** 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 himself/herself in service to the Forum and contributions to chromatography. Each year the **Forum** seeks to select a deserving awardee.

Nominations should include an accurate statement of the nominee's contributions to the Forum and the contributions to separation science. A seconding letter is not required but strongly recommended. There is no restriction on the length of or content of submission. The deadline for submission is July 31, 2007. Send nominations to:

Dr. Matthew Przybyciel
ES Industries
701 South Route 73
West Berlin, NJ 08091
or email przybyciel@earthlink.net

