

## *Separation Science in the Petroleum Industry*

Frank P. Di Sanzo  
ExxonMobil Research & Engineering  
Annandale & Paulsboro, New Jersey

**Abstract:** Chromatography plays an important role in the petroleum industry due to the complexity of mixtures involved and the variety of compound types. Currently the state-of-the-art in chromatography for the petroleum industry has concentrated on the use and further development of comprehensive 2D-GC, fast gas chromatography, new applications in SFC, liquid chromatography and selective detection of heteroatoms. Specifically, the presentation will focus on the recent development in 1) comprehensive 2D-GC; 2) newer techniques, such as ultrafast GC (UFGC) and its optimization for wide ranging boiling point applications; 3) newer selective detection in liquid and vapor phases, such as HPLC/nitrogen selective detection, LC/MS, GC/sulfur and nitrogen chemiluminescence detection (GC/SCD and GC/NCD); 3) extension of supercritical fluid chromatography for determination of biodiesels in diesels and 4) state-of-the-art applications in hydrocarbon streams ranging from complex naphthas to boiling point distributions of higher boiling streams up to C100-120. Applications from routine industry use as well as developments in standardizing some of the methodologies by consensus bodies, such as ASTM, will be reviewed. Finally, some new developing trends will be briefly presented such as Ion Mobility Detection, micro-GC's etc.

**About the Speaker:** Frank P. Di Sanzo is currently a Distinguished Research Associate with ExxonMobil Research and Engineering, acting as a team leader in the Chromatography and Organic Analysis groups at the Analytical Science laboratories in Annandale and Paulsboro in New Jersey. Frank obtained his Ph.D. from the University of Massachusetts and has approximately 45+ publications in the petroleum/chemical area. He is also very active with the American Standard Testing Materials (ASTM). At ASTM D02.04 group Frank is the chairman of the mass spectrometry group and the vice-chairman of the gas chromatography group. In addition, he has actively participated in the development of regulatory test methods with the American Petroleum Institute (API) and Western States Petroleum Association (WSPA). He has contributed to several EPA and CARB (California Air Resource Board) approved regulatory test methods for gasolines, diesels currently in use by the industry. Frank currently serves as a reviewer for several journals and is on the editorial board of *Journal of Chromatographic Science* for which he has been the guest editor of several issues related to the state-of-the-art chromatography developments in the petroleum industry.

**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.eas.org/cfdv>

**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  
(856) 351-2818  
**President - Emeritus:** Ed Carenzo - Merck & Co.  
(215) 652-8539

**Dinner Choices:** Chicken Marsala, Flounder Stuffed with Crab Cake, or Eggplant Parmesan. Please specify choice of entree when making dinner reservations.

**For Reservations:**

Please call before 4 p.m., **Tuesday, January 2.** 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](mailto: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. Brian Bidlingmeyer  
Agilent Technologies, Inc  
2850 Centerville Road  
Wilmington, DE 19808  
Or email to: [brian\\_bidlingmeyer@agilent.com](mailto:brian_bidlingmeyer@agilent.com)

