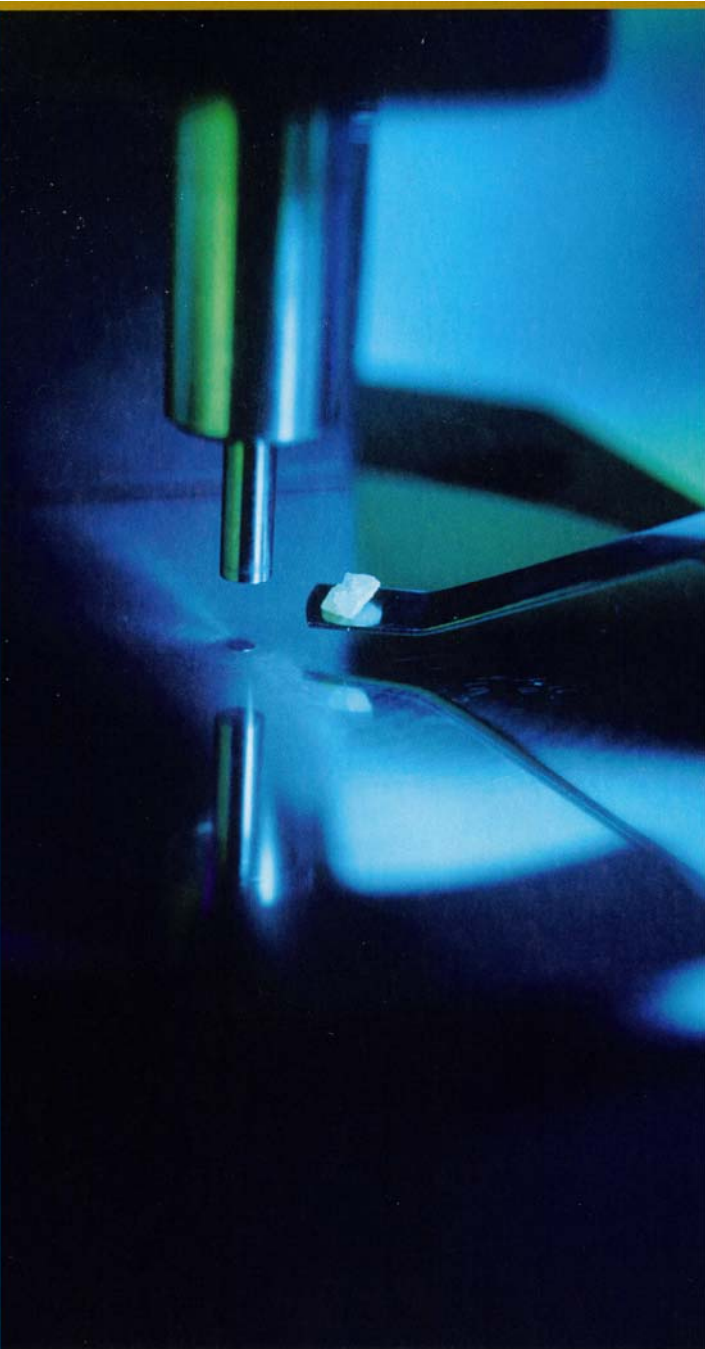


FINAL PROGRAM

March 8-13, 2009
McCormick Place South
Chicago, Illinois USA
www.pittcon.org



PITTCON
CONFERENCE & EXPO 2009

Pittcon 2009 Technical Program

(1340-6 P) **Characterization of the Dielectrophoresis Crossover Frequency and Binding Affinity of Phalloidin-Conjugate Microspheres and Actin** CHRISTIAN WHITE, West Virginia University, Lisa Ann Holland, Parviz Farnouri

(1340-7 P) **Achieving Small Uncertainties in Ion Chromatography Using a High-Performance Methodology** MICHAEL R WINCHESTER, NIST, Therese A Butler, Michael S Rearick

(1340-8 P) **Structural Radial Heterogeneity at the Exit Cross Section of a Silica-Based Semi-Preparative Monolithic Column** JUDE A ABIA, University of Tennessee, Khaled Mriziq, Georges Gulochon

(1340-9 P) **Classic Immunoprecipitation Kit Revamped For Broad Range Application** STEPHANIE KAY ANDERSEN, Trinity International University

(1340-10 P) **Enhanced in vitro Microdialysis Sampling Recovery of Heparin-Binding Cytokines** WILLIAM HENRY NEWHART, Missouri Western State University, Tory Herbaugh, Jia Duo, Julie Stenken

(1340-11 P) **Fabrication of a Hybrid Nano-Pore that Mimics the Nuclear Pore Complex** SEAN BIRD, Indiana University

(1340-12 P) **Newly Developed High Strength and Chemically Stable Silica Gel Based Preparative Reversed Phase Packing Materials** MASAKATSU OMOTE, YMC Co., Ltd., Yosuke Matsushita, Tomohiro Kinoshita, Kazumichi Takahashi, Noriko Shoji, Naohiro Kuriyama

(1340-13 P) **Next Generation Hybrid Silica Gel for the Wide pH Range HPLC Separations** MASAKATSU OMOTE, YMC Co., Ltd., Takatomo Takai, Yayoi Hiyoshi, Akiko Kashida, Yuko Kato, Noriko Shoji, Naohiro Kuriyama

(1340-14 P) **New High Performance Separation Tools** LYNDA TREMBLAY, SiliCycle Inc., François Béland, Olivier Marion

(1340-15 P) **Evaporative Light-Scattering Detection - A Universal, Powerful and Cost-Effective Solution for Multi-Element Analyses in Liquid Chromatography** ERIC VERETTE, SEDERE, Michel Dreux

(1340-16 P) **Mixed Surfactant Systems as Pseudostationary Phases in Micellar Electrokinetic Chromatography** CEVDET AKBAY, Fayetteville State University, David Ahlstrom, Hakan Arslan, Yatzka Hoyos

(1340-17 P) **New Method for Rapid Determination of Partition Coefficients Between n-octanol and Water using Gemini Surfactants in Micellar Electrokinetic Chromatography** HAKAN ARSLAN, Mersin University, Yatzka Hoyos, David Ahlstrom, Cevdet Akbay

(1340-18 P) **Chiral Discrimination of Ru(II) Polypyridyl Complexes using Derivatized Cyclodextrins by 1H NMR Spectroscopy and HPLC** PING SUN, University of Texas at Arlington, T Sampath S Perera, Frederick MacDonnell, Daniel W Armstrong

(1340-19 P) **Novel Porous SPME Fibers based on Monolithic Silica Technology** FRANCOIS BRETON, University of Waterloo, Maria Rowena Monton, Wayne M Mullett, Janusz Pawliszyn

POSTER SESSION

Session 1350

All posters are to be mounted by 10:00 AM and remain on display until 4:30 PM. You cannot get onto the exposition floor until after 9:00 AM. Authors must be present from 10:00 AM to 12:00 PM. Location of the posters is on the center of the Exposition Floor - Aisles 2400-3700.

Teaching Analytical Chemistry

Tuesday Morning

(1350-1 P) **Development and Application of a Portable X-Ray Fluorescence Instrument** SCOTT CARR, Anderson University, Chad Wallace, Chris Green, Nicolas Villelli

(1350-2 P) **Discovery-Based Learning Centered on Student-Built Instrumentation** PAT GRAU, Butler University, Michael J Samide

(1350-3 P) **A Tool for Teaching Nanotechnology Applications** ROLF SCHLAKE, Applied Separations, Al Kazianus

(1350-4 P) **Voltammetric Analysis of DA and DOPAC: For the Everyday Analytical Student** KATHERINE LYNNETTE LOGAN, Wayne State University, Francis K Maina, Tiffany A Mathews

(1350-5 P) **An Investigation of Phosphate Levels in Human Hair Due to Consumption of and Exposure to Fast Food** MARK T STAUFFER, University of Pittsburgh at Greensburg, Christina M Miller

(1350-6 P) **Further Explorations of Differences in Metal Concentrations between Caffeinated and Decaffeinated Types of Coffee: Assessment of the Harmful Metals in Coffee** MARK T STAUFFER, University of Pittsburgh at Greensburg, Chaza Alhaj

(1350-7 P) **Comparisons of Laboratory and Field Results for Determination of Selected Metals and Anions in Water from Selected Streams in Southwestern Pennsylvania** MARK T STAUFFER, University of Pittsburgh at Greensburg, Victoria A Rifenburg, Brandon S Humberger

(1350-8 P) **Characterization of the Quality of Susquehanna River Water at Selected Locations, Based on Determinations of Aluminum, Iron, Manganese, pH, and Other Interesting Analytes** MARK T STAUFFER, University of Pittsburgh at Greensburg, Tara J Parente

(1350-9 P) **Micro-Total Analysis System in Undergraduate Biochemistry and Analytical Chemistry** JOHN J HARWOOD, Tennessee Technological University, Matt Mancuso, Thurston Banks, Jeffrey O Boles

CONFERENCE NETWORKING

Tuesday, March 10, 2009
9:00 - 11:00 AM

State of Supercritical Fluid Chromatography

Facilitated by: Larry T Taylor, Virginia Tech and J David Pinkston, Procter & Gamble Co., Room N426A

Analysis of Counterfeit and Substandard Drugs

Facilitated by: Perry G Wang, U.S. FDA, Room N426B

In-House Training for High School Graduates to Use HPLC

Facilitated by: Harold McNair, Virginia Tech and Lee Polite, Axion Lab, Room N426C

LIMS/LI: Management, Project, Implementation and Maintenance Issues

Facilitated by: Gloria Metrick, GeoMetrick Enterprises and LIMS Consultant, Room N427A

TUESDAY, MARCH 10, 2009 AFTERNOON

AWARD

Session 1360

Pittsburgh Spectroscopy and Maurice F Hasler Awards - arranged by Joanne H Smith, Edinboro University of Pennsylvania

Tuesday Afternoon, Room S401a

Joanne H Smith, Edinboro University of Pennsylvania, Presiding

1:30 **Introductory Remarks - Joanne H Smith**

1:35 **Presentation of the 2009 Pittsburgh Spectroscopy Award to Ira W Levin, National Institutes of Health, by David F Pensenstadler, 2009 Chairman, The Pittsburgh Spectroscopy Society**

1:40 (1360-1) **Interlacing Basic Biophysical Research with Translational Clinical Studies: From Bench to Bedside and Back** IRA W LEVIN, National Institute of Health, Tsoching Chen, Nicole J Crane, Zachary D Schultz

2:15 (1360-2) **Electrospun Collagen Fibers: Characterization of Bioscaffolds** BRUCE CHASE, DuPont, John F Rabolt

Recess

3:05 **Introductory Remarks - Joanne H Smith**

3:10 **Presentation of the 2009 Maurice F Hasler Award to Gary M Hieftje, Indiana University, by Edward P Ladner, 2009 President, The Pittsburgh Conference**

3:15 (1360-3) **Metallomics, Molecular Ions, and Multichannel Detection** GARY M HIEFTJE, Indiana University, Steven J Ray, Francisco A Andrade, George Chan, Carsten Engelhard, Gerardo Gamez, Duane A Rogers, Arnold Rubinshtein, Gregory D Schilling, Jacob T Shelley, Michael R Webb, M Bonner Denton, Roger Sperline, David W Koppelaar, Charles Barinaga

3:50 (1360-4) **Mass Cytometer: An ICP-MS Technology for Real-Time Multi-Parameter Analysis of Single Cells and Particles** SCOTT D TANNER, University of Toronto, Olga Ornaty, Vladimir I Baranov, Dmitry R Bandura

Tuesday, a.m. / p.m., March 10

ABSTRACT[Back](#)**Basic Information****Abstract Number:** 1340-17**Author Name:** Cevdet Akbay**Affiliation:** Fayetteville State University**Session Title:** Separation Science**Event Type:** Poster**Event Title:** New Method for Rapid Determination of Partition Coefficients Between n-octanol and Water using Gemini Surfactants in Micellar Electrokinetic Chromatography**Presenter(s):****Start Time:** (Slot # 17)**Date:** Tuesday, March 10th, 2009**Location:****Keywords:** Capillary Electrophoresis, Drugs, Separation Sciences, Surfactants**Co-Authors**

Name	Affiliation
Ahlstrom, David	Fayetteville State University
Arslan, Hakan	Fayetteville State University
Hoyos, Yatzka	Fayetteville State University

Abstract Content

The *n*-octanol/water partition coefficient, $\log P_{ow}$, is related to the hydrophobicity of chemicals and shows a good correlation with a variety of pharmacological properties of drugs. $\log P_{ow}$ values are usually determined with standard shake-flask method, liquid chromatography such as high-performance liquid chromatography and different mathematical models. Another very rapid and effective technique for the determination of $\log P_{ow}$ is micellar electrokinetic capillary chromatography, MEKC. This technique is based on the differential partitioning of analytes between micellar and aqueous phases. In present study, benzene derivatives with known $\log P_{ow}$ values were used to determine the partition coefficient values, $\log K_{mic-aq}$, of test analytes. Two approaches were applied; in the first one, relationship between the capacity factors, k' , of individual benzene derivatives obtained in MEKC and the partial specific volume, PSV, of surfactants ($k' = K_{mic-aq} \cdot PSV \cdot (C_{surf} - CMC)$) was used. In the second approach, a calibration curve of $\log P_{ow}$ versus $\log k'$ was used. Four novel gemini surfactants, 1,1'-(but-2-yne-1,4-diyl)bis(1-dodecylpyrrolidinium) bromide, N^1, N^4 -didodecyl- N^1, N^1, N^4, N^4 -tetramethylbutane-1,4-diaminium bromide, N^1, N^4 -didodecyl- N^1, N^1, N^4, N^4 -tetramethylbut-2-yne-1,4-diaminium bromide, and N^1, N^3 -didodecyl- N^1, N^1, N^3, N^3 -tetramethylpropane-1,3-diaminium bromide, with different head groups and spacers were used as pseudostationary phases in MEKC for determination of $\log k'$ values. High correlations were observed between the experimental $\log K_{mic-aq}$ obtained with gemini surfactants and literature values of $\log P_{ow}$. Based on our findings, the use of gemini surfactants for determination of hydrophobicity of variety of chemicals was found to be advantageous.

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