AES Electrophoresis Society Program Grid
Annual Meeting 2013, San Fancisco CA, November 3-8

Monday, November 4

8:30 AM to 11:00 AM

Room Continental 5, Hilton

(#34) - Advances in Electrophoretic Protein Separation and Analysis

Chairs: Tom Berkelman and Phil Beckett

N. Kendrick	Identification of Activated Receptor Tyrosine Kinases Using 2DE Western Blot Image Overlays
Y. Qu	On-Chip Protein Extraction and Albumin Exclusion From Plasma and Serum Using Isotachophoresis
C.N. Hestekin	Microchannel Electrophoresis Analysis of Amyloid Protein Aggregation
A. Ros	Fractionation of Nanocrystals for Femtosecond Nanocrystallography of Membrane Proteins
F. Jahnke	Human Fluid Sample Pretreatment for Biomarker Discovery
R. Yanashima	Using Gradient Insulator-Based Dielectrophoresis to Capture Small Molecular Weight Proteins

SUNDAY WORKSHOPS
November 3
Serrano Hotel, Rooms TBA

9:00 AM - 12:00 PM

1: Microfluidics and Electrokinetics with LabSmith
Dr. Yolanda Fintschenko, LabSmith

1:00 PM - 4:00 PM

2: Mathematical Modeling of Microfluidics & Electrokinetic Problems Employing COMSOL
COMSOL Instsructor TBA

3: Gel Electrophoresis of Proteins and Western Blotting
Dr. Thomas Berkelman, Bio-Rad Laboratories

12:30 PM to 3:00 PM

Room Continental 7, Hilton

(#102) - Advances in Electrokinetics and Electrophoresis: Bioanalytical, Biosensing, and Biomedical Applications

Chairs: Cullen R. Buie and Alireza Salmanzadeh

Z.R. Gagnon	Fluidic Dielectrophoresis: Polarization, Manipulation and Biosensing At Electrical Liquid Interfaces
Q. Wang	Continuous Particle Sorting Using Three Dimensional Insulator Based Dielectrophoresis
S. Kilchenmann	Electrorotation As a Tool to Study Interaction Kinetics Between Proteins and Cells in Real-Time
A. Salmanzadeh	Studying the Effects of Sphingolipid Metabolites On Cells' Dielectrophoretic Properties Using Contactless Dielectrophoresis
N. Swami	Dielectrophoretic Separation of Microorganisms Based On Speciation and Life-Cycle Stage
Z. Slouka	An Integrated Electrokinetic Chip Platform for Point-of-Care Nucleic Acid Diagnostics
S. Parlia	A Novel Method for Measuring Proteins Zeta Potential Using Electroacoustics

Room Continental 1, Hilton

(#131) - Microfluidics: Bioanalytical Applications

Chairs: Edgar D. Goluch and Yong Zeng

A. Ros	Insulator Based Dielectrophoresis for the Manipulation of DNA Origami
P.V. Jones	Bioparticle Differentiation in An Insulator-Based Dielectrophoretic Microchannel
T. Narahari	Fabric Microfluidics for Low-Cost Protein Separations
J.A. Kenis	Microfluidic Approach for Antibiotic Susceptibility Testing of Polymicrobial Cultures
S. Senapati	A Low-Cost Nucleic Acid Biosensor for Point-of-Care Application
S.J.R. Staton	Pico-Force Optical Exchange (pico-FOX): Separation of Particles From Molecular Components Utilizing Optical Forces With Orthogonal Fluid Flow With Applications to Malaria
J.P. Houston	Single Cell Analysis Using Time-Resolved Spectroscopic Measurements in Flow Cytometry

Room Continental 1, Hilton

(#134) - Nanomaterials for Energy Storage II

Chairs: Yong L. Joo and Prashant Nagpal

R.J. Messinger	Identifying Defect Sites in Lithium-Ion Battery Materials: Local Disorder in LiVPO4F and Its Influence On Bulk Properties
A. Langrock	Nanocomposite Conversion-Reaction Cathode for Next Generation Li Ion and Na Ion Batteries
X. Zhang	Atomic Layer Deposition (ALD) On the Nanostructured Li-Mn-Rich Composite Li1.2Ni0.13Mn0.54Co0.13O2 Cathode Powder
C.M. Hayner	Metal Fluoride/Graphene Composites for High-Performance Li-Ion Cathodes
K. Han	Nanostructured Li2S-Graphene Composites As Cathode for High Energy Density Li-S Batteries
Y. Li	Carbon/Sulfur Microspheres With Multi-Modal Pore Structures for Lithium-Sulfur Battery Cathodes
J. Yin	Nanofiber-Based Cathode Electrocatalysts Supported On Carbon Substrates for Lithium-Air Rechargeable Batteries
J.W. Lee	Low-Temperature Dehydrogenation From Aminoborane Complexes Under Carbon Dioxide Atmospheres
W. Arlt	Intermittent Electrical Energy Storage By Liquid Organic Hydrogen Carriers
P. Cappillino	Synthesis of Nanoporous Palladium Powder With Controlled Pore and Particle Size for Hydrogen Storage Applications

3:15 PM to 5:45 PM

(#196) - Plenary Session: American Electrophoresis Society

Chairs: Rafael V. Davalos and Amy E. Herr

S.L Anna	Microfluidic Droplet Dehydration For Separation and Purification Of Biomolecules
C. Harnett	Electrodes for Microfluidic Control and Sensing
M.J. Madou	Merging Electrical and Centripetal Forces With An Enzyme Cascade On a Compact Disc for the Ultimate in Analytical Performance in Molecular Diagnostics
D. Arnold	Electrokinetics and High Pressure Liquid Chromatgraphy
S. Quake	Invited Talk for Plenary Session -- Professor Stephen Quake

Informal Networking Party

Monday, November 4
6:00 PM - 7:00 PM
Location TBA

Join your AES colleagues for some fun and informal fellowship.
Cost: Free (cash bar).

(#192) - Nanomaterials for Energy Storage III

Chairs: Vibha Kalra and Prashant Nagpal

V. Kalra	Fabrication of Porous Carbon Nanofibers With Adjustable Pore Sizes As Electrodes for Supercapacitors
K.T. Nicol	Enhanced Energy Storage By Tunable Electrolyte Confinement in Structure-Directed CNT Arrays
Y. Chen	Multifunctional Nitrogen-Rich "Brick-and-Mortar" Carbon As High Performance Supercapacitor Electrodes and Oxygen Reduction Electrocatalysts
H. Wei	Multiwalled Carbon Nanotubes With Tuned Surface Functionalities for Electrochemical Energy Storage
Y. Mao	Three-Dimensional Core@Shell Nanostructured Array for Microscale Electrochemical Energy Storage
A. Armutlulu	Microfabricated Nickel Oxide Supercapacitors Based On High Aspect Ratio Concentric Cylindrical Electrodes
A. Djire	Pretreatment Effects On Charge Storage of Early Transition-Metal Carbides and Nitrides
P. Jampani	Doped Transition Metal Oxide Composite Electrodes for Supercapacitor Applications
L. Wang	Novel 3-D MnO2/Holey Graphene Nanostructure for Supercapacitor Applications With Enhanced Electrochemical Performances
J. Zhu	Electrochemical Energy Storage of Magnetic Carbon Nanocomposites: Role of Magnetocapacitance and Magnetohydrodynamics
A.A. Arie	Synthesis and Characterization of Orange Peel As Electrodes in Li-Ion Capacitors

(#358) - Electrokinetic Behavior of Micro- & Nano-Particles: Directed Assembly Under Electric Fields

Chairs: Stuart J. Williams and Christopher L. Wirth

O.I. Bernal	Directed Dielectrophoretic Assembly of Thin Highly Organized Photoreactive Biocoatings of Cyanobacteria
A.J. Pascall	Co-Electrophoretic Deposition of Composites: Understanding Deposition Mechanisms
I. Kretzschmar	Assembly of Janus Particles In Combined Electric and Magnetic Fields
F. Ma	The Impact of Geometric Anisotropy On Colloids Under Electric Fields
S.J. Williams	Effects of Microtopography On Two-Dimensional Electrokinetic Patterning of Colloids On An Electrode Surface
C.L. Wirth	Electrolyte Dependence of Particle Motion Near An Electrode During AC Polarization
P.J. Beltramo	Predicting the Disorder-Order Transition of Dielectrophoretic Colloidal Assembly With Dielectric Spectroscopy
H. Liu	The Preparation of Environmental Friendly Gelatin-Gum Arabic Microcapsule for Electrophoretic Display

6:00 PM to 8:00 PM

(#392) - Poster Session: American Electrophoresis Society

Chairs: Blanca H. Lapizco-Encinas and Victor M. Ugaz

Want to get involved with AES Programming?

Attend the business meeting and volunteer by contacting our 2014 organizers:
Cullen Buie crb@mit.edu
Rodrigo Martinez Duarte drmartnz@gmail.com

Tuesday, November 5

8:30 AM to 11:00 AM

Room Continental 5, Hilton

(#252) - Ionic Fluxes At Interfaces, Electrohydrodynamics, and Electrospinning

Chairs: Shengnian Wang and Aytug Gencoglu

K. Bengtsson	Low-Cost 3D-Printed Electrokinetic Systems
S.J. Williams	Inexpensive Electrokinetic Microfluidic Systems Using Printed Circuit Board Substrates
M. Vázquez-Piñón	A Comparative Study of AC Electroosmotic Micropumps By Computational Modeling of Non-Equilibrium Electrokinetics
A. Gencoglu	Effect of Insulating Post Shape On Particle Trapping With Insulator-Based Dielectrophoresis
N. Swami	Frequency-Selective Polarization of the Electrical Double-Layer Around Nano-Colloids
A.S. Khair	Unsteady Electrohydrodynamic Drop Deformation
S. Wang	Hybrid-Field Microfluidics Enhanced Polyplex Synthesis and Delivery

AES Business Meeting
Wednesday, November 6
6:00-6:45 pm
Hilton Continental 5

12:30 PM to 3:00 PM

Room Continental 7, Hilton

(#301) - Electrokinetics in Non-Polar Media

Chair: Paul Sides

B. Yezer	A Study of Doped Nonpolar Liquids Using Electrochemical Impedance Spectroscopy
J. Lee	Surfactant-Mediated Electrophoretic Properties of Non-Polar Dispersions
M.M. Gacek	Factors Influencing Particle Charge in Apolar Media
A. Dukhin	Why Ionic Surfactants Exhibit Linear Conductivity-Concentration Dependence in Non-Polar Liquids
J-P Hsu	Electrophoresis Of pH-Regulated Particles In The Presence Of Multiple Ionic Species

Room Continental 7, Hilton

(#320) - Nanoscale Electrokinetics

Chairs: Nathan Swami and Fernanda Camacho

J. Thomas	Ratchet Nanofiltration of DNA
Y. Qu	Simultaneous Purification and Fractionation of Nucleic Acids and Proteins From Complex Samples Using Isotachophoresis
S.M. Davidson	Direct Numerical Simulation of Electrokinetic Chaos Near Ion-Selective Surfaces
J. Hrdlicka	Numerical Simulations of Traveling Wave Electroosmosis At Nanoscale
G. Hu	Electrokinetic Translocation of Nanoparticles Through Nanopores Under Concentration Gradients
L-H. Yeh	Stern Layer Effect On the Field Effect Regulation of Surface Charge Property and Electroosmotic Flow in a Silica Nanochannel
N. Shi	An Electrokinetic Probe of DNA Binding Interactions Via Resonant Entropic Trapping

3:15 PM to 5:45 PM

Lunch with Leaders

Tuesday, November 5
11:00 AM - 12:30 PM
Daily Grill

Students, meet and mingle with leaders in the field over lunch. Tickets to attend the banquet can be purchased along with your AICHE registration or by contacting AES Executive Director Matt Hoelter matt-aes@tds.net

AES Poster Session
Tuesday, November 5
6:00 PM - 8:00 PM
Hilton Continental 5

Awards given to the best student posters.
Please contact Blanca Lapizco (bhlbme@rit.edu) and Victor Ugaz (ugaz@tamu.edu)

Wednesday, November 6

8:30 AM to 11:00 AM

Room Continental 5, Hilton

(#403) - Advances in Electrokinetics and Electrophoresis: Fundamentals

Chairs: Aditya S. Khair and Hadi Shafiee

J.S. Paustian	Rapid Dialysis in Microfluidic Devices Using Hydrogel Membrane Micro-Windows: Phoretic Migration Under Imposed Gradients
A. Tripathi	The Electrokinetic Properties of Cationic Surfactants Adsorbed On a Hydrophobic Substrate: Effect of Chain Length and Concentration
M.B. Andersen	Spatial and Temporal Analysis of 2nd-Kind Electro-Osmotic Instability in Cross-Flow
H. Zhao	The Influence of Dielectric Decrement On Electrokinetics
K.D. Dorfman	Tilted Post Arrays: DNA Electrophoresis in Anisotropic Media
K.S. Koppula	Advancement in the Modeling of Insulator Based Dielectrophoresis
N. Neehar	Theoretical Investigation of Polarizability of Soft Biological Particles

AES
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Matt Hoelter
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12:30 PM to 3:00 PM

Room Continental 7, Hilton

(#482) - Electroporation, Electrophysiology and Cell Electrokinetics

Chairs: Rafael V. Davalos and Chang Lu

M. Bonakdar	Characterization of the Permeability of the Brain Endothelium Due to Electroporation Using a Dynamic Microengineered Model
M.B. Sano	Electroporation of Cells On Chip Using High Frequency Electric Fields Without Electrode-Sample Contact
S. Wang	Aunps-Polyplex-Electroporation Enhanced DNA and RNA Delivery
D.N. Loufakis	Cell Allignement Under Unidirectional Electropulsation In A Microfluidic Device
S.W. Joo	Cell Electrofusion Chip Based On Micro-Cavity Microelectrodes
J. Cemazar	Dielectrophoretic Separation of Electroporated Cells
F. Labeed	Dielectrophoretic Detection Of Human Oral Cancer Using 3D Well Electrodes

Room 7 Continental, Hilton

(#481) - Electrokinetics for Sample Preparation

Chairs: Rodrigo Martinez-Duarte and Michael Hughes

S. Angione	Investigation of a Novel Platform for Manipulation of Microparticles Using Dielectrophoresis
S.J. Williams	Design of Electrothermal Pumps Using Resistive Heaters
Z. Qian	Design and Simulation of An Automated Rare Blood Cell Detector
L.A. Marshall	An Injection-Molded Device for Purification of Nucleic Acids From Whole Blood Using Isotachophoresis
R. Sierra	Microfluidic Electrokinetic Sample Holder for Serial Femtosecond Crystallography
R.J. Meagher	Semi-Preparative Isotachoporesis for Fractionation of RNA From Blood
M.J. Heller	DEP Isolation of Cancer Related Circulating Cell Free (CCF) DNA Biomarkers Directly From Blood

3:15 PM to 5:45 PM

(#527) - Award Session of the American Electrophoresis Society

Chairs: Adrienne R. Minerick and Edgar D. Goluch

R. Muller	Big Advantages of Thinking Small
W. Patton	Novel Molecular Probes for Functional Proteomics
S. Sweinberger	CE, MALDI, SELDI, and Biosensor Technology
C. Lu	Electroporation for Extraction of Intracellular Proteins and Genes
V.M. Ugaz	A Microfluidic Toolbox To Experimentally Probe Macromolecular Transport During Gel Electrophoresis: Insights and Opportunities
D.E. Garfin	Reminiscences About Electrophoresis

AES Banquet
Wednesday, November 6
7:00 PM - 10:00 PM
Grand Café, Hotel Monaco

Cost: $55/person
tickets to attend the banquet can be purchased along with your AICHE registration or by contacting AES Executive Director Matt Hoelter matt-aes@tds.net.

Thanks to our organizers Rafael V. Davalos and Amy E. Herr!