Annual Meeting of the AES Electrophoresis Society

November 14-16, 2016; Parc 55 Hotel Union Square, San Francisco, CA

THANKS to our organizers Fatima H. Labeed and Lisa A. Flanagan!

Visit www.aesociety.org for a comprehensive resource on electrokinetics, microfluidics and related techniques

MONDAY, November 14

8:45 to 11:00 AM

Electrokinetics for Cellular Analysis and Separation
Location: Parc 55 Hotel, Embarcadero Room
Chairs: Soumya Srivastava and Tayloria Adams

9:00	In Vitro Electrical Impedance Characterization of Huvecs Undergoing Hydrodynamic Shear Stress (V. Velasco)
9:15	Utilization of Direct Current Insulator-Based Dielectrophoresis in the Separation of Breast Cancer Infected Peripheral Blood Mononuclear Cells from Their Mixture with Healthy Cells (E. Adekanmbi)
9:30	3D Electrodes Integrated in Microfluidic Channels for Automated Single Cell Electrorotation Spectra Acquisition (S. Kilchenmann)
9:45	Quantifying Intracellular Mitochondrial Dynamics Based on Cytoplasmic Electrophysiology (A. Rohani)
10:00	Integrating Micro-Environmental Cues into Single-Cell Targeted Proteomics Tools (E. Su)
10:15	Dielectrophoretic Field Shaping for Enhanced Circulating Tumor Cell Isolation and Characterization (A. Abarca-Blanco)
10:30	Separation of Candida Cells Using 3D Carbon-Electrode Dielectrophoresis (J. Gilmore)
10:45	High-Throughput, Low-Loss Dielectrophoretic Cell Separation (M. Hughes)

11:30 - 12:30 PM

LUNCH WITH LEADERS $20 (payable at door)
The Daily Grill
347 Geary Street, San Francisco

1:00 – 3:00 PM

Electrokinetics for Sample Preparation
Location: Parc 55 Hotel, Embarcadero Room
Chairs: Mark Hayes and Michael Heller

1:00	Dielectrophoretic Sorting of Plasmid and Genomic DNA (P.V. Jones)
1:15	Alternating Current Electro-Osmotic Pumping at Asymmetrically Metallized Porous Membranes (J. Beharic)
1:30	Rapid Cell Separation Using 3D Carbon Electrode Dielectrophoresis (M. Islam)
1:45	New Diagnostic Paradigms Enabled By Hyperresolution Dielectrophoretic Separations (M. Hayes)
2:00	Separation of Hemocrit from Hemolymph Collected from Individual Drosophila (S. A. Shippy)
2:15	AC Electrokinetic Isolation and Detection of Cell Free DNA, RNA and Exosome Biomarkers for Sample to Answer Molecular Diagnostics (M. J. Heller)
2:30	GE HEALTHCARE EXHIBITOR PRESENTATION: Introducing the new Amersham Typhoon – a laser based imager (P. Beckett)

TUESDAY, November 15

8:45 to 11:00 AM

Electrokinetics: Advancing the Fundamentals I
Location: Parc 55 Hotel, Embarcadero Room
Chairs: Kyle Bishop and Michael Sano

9:00	Origin and Nature of Charge Carriers in Nonpolar Solvents (J. W. Schneider)
9:15	Isomotive Dielectrophoresis (isoDEP): Characterization through Particle Velocemitry (V. Velasco)
9:30	A Novel Electrokinetic-Electromechanical Microfluidic Platform Using Conductive Carbon Black Membranes (X. Fu)
9:45	Electroosmotic Flow in a Suspended Liquid Film (A. Hussein-Sheik)
10:00	Selectivity Enhancements in Gel-Based DNA-Nanoparticle Assays By Membrane-Induced Isotachophoresis: Thermodynamics Versus Kinetics (S. Marczak)
	Enjoy an early lunch and meet back at 12 pm for the AES Business Meeting!

11:30 - 12:30 PM

Business Meeting @ 12 pm
***Parc 55,** Embarcadero Room*
GET INVOLVED! Organizers of 2017 meeting:
Soumya Srivastava & Tayloria Adams

1:00 – 3:00 PM

Electrokinetics and Microfluidics for Biomolecular Analysis
Location: Parc 55 Hotel, Embarcadero Room
Chairs: Zachary Gagnon and Sagnik Basuray

1:00	Non-Optical Biomolecular Detection in Human Serum Using Interfacial Electrokinetic Transduction (N. Mavrogiannis)
1:15	A Membraneless Microfluidic Architecture for Continuous Separation of Particles and Cells (B.H. Choi)
1:30	Detecting Autologous Blood Transfusions Using Dielectrophoretic Spectroscopy (F. Crivellari)
1:45	Long-Read DNA Separations Using Micelle-Elfse in Microchip Electrophoresis (R. Gamble)
2:00	A Tunable Ionic Transistor/Diode Molecular Sensor with Adjustable Sensitivity and Dynamic Range (G. Sun)
2:15	Investigation of the Effect of Electroporation on Chemotherapeutics Delivery into a Tumor (M. Moarefian)
2:30	A High-Throughput Platform for Electrotransformation of E. coli (P. A. Garcia)

WEDNESDAY, November 16

8:45 to 11:00 AM

Electrokinetics: Advancing the Fundamentals II
Location: Parc 55 Hotel, Embarcadero Room
Chairs: Michael Hughes and Nathan Swami

9:00	Colloidal Dielectric Forces within an Electric Curtain (B. King)
9:15	In-Situ Characterization of Electrophoretic Deposition Using the Quartz Crystal Microbalance (A. Golobic)
9:30	Electrokinetics of Heterogeneous Ion-Exchange Membranes (Z. Slouka)
9:45	Mesoscale Particle-Based Model of Electrophoretic Deposition (B. Giera)
10:00	Effect of Intedigitated Electrode Asymmetry on Performance of Carbon Based AC Electroosmotic Micropumps (M. Vázquez-Piñón)
10:15	A Shear-Enhanced CNT-DEP Nanosensor Platform for Ultra-Sensitive/Selective Protein Quantification with Tunable Dynamic Range: Overcoming Thermodynamic Limitations (D. Li)
10:30	Rapid Isoelectric Focusing of Proteins in 1 Mm Long Microchannels (C. F. Ivory)
10:45	Reversible Assembly of Colloidal Particles Using Low Frequency Pulsed DC Electric Fields for Electrophoretic Displays (A. J. Pascall)

11:30 - 12:30 PM

Lunch on your own

1:00 – 3:00 PM

Soft Matter Electrokinetics: Particles, Drops and Bubbles
Location: Parc 55 Hotel, Embarcadero Room
Chairs: Stuart Williams and Christopher Wirth

1:00	Production of Nanodrops Using Interfacial Electrokinetic Polarization at a Flow-Focused Microfluidic Constriction (M. Ibo)
1:15	Placement and Separation of Colloids By Liquid Crystal Enabled Electrokinetics Controlled By Patterned Substrates (O. Lavrentovich)
1:30	Optoelectric Trapping: Effect of Electrode Material and Thickness on Light-Induced Electrothermal Flow (A. Mishra)
1:45	Dispensing Surfactant-Containing Water Droplets Using Electrowetting (B. Chock)
2:00	Electric Field-Driven Structuring in Suspensions (B. Khusid)
2:15	Electrohydrodynamics of a Viscous Drop with and without Inertia (H. Nganguia)
2:30	Nano-Crater Formation on Electrodes during the Electrical Charging of Aqueous Drops (E.S. Elton)
2:45	Addressing of Small Droplets in Systems of Two Aqueous Phases Mediated By Electric Field (M. Pribyl)

3:15-5:30 PM

Electrokinetics for Biological Separation and Analysis

Location: Parc 55 Hotel, Embarcadero Room

Chairs: Adrienne Minerick and Fatima Labeed

3:15	In-Depth Single Cell Chemical Analysis Using Nanowell-Based Sample Preparation Combined with Ultrasensitive Capillary Electrophoresis/Mass Spectrometry (R. T. Kelly)
3:30	Dielectrophoretic Based Molecular Targeting for Blood Chronobiology (F. Labeed)
3:45	Selective Enrichment of Molecular Biomarkers Under Ion Concentration Polarization in Nanochannels Using DC Versus AC Electrokinetics (N. Swami)
4:00	Protein Phosphorylation Cytometry Via Single Cell Isoelectric Focusing (S. Jeeawoody)
4:15	Preconcentration of Cardiac Troponins in Whole Serum By Isotachophoresis (C. F. Ivory)
4:30	Longitudinal Determination of Vitamin Concentrations in Tears and Blood Serum of Infants and Parents (M. Khaksari)
4:45	Improving the Understanding of Early Stage Amyloid Aggregation Using Microchannel Electrophoresis (X. Redmon)
5:00	Refinement of an Internal Standard for Phosphotyrosine Western Blotting (N. Kendrick)

Plenary Session of the AES Electrophoresis Society

Location: Parc 55 Hotel, Embarcadero Room

Chairs: Lisa Flanagan and Fatima Labeed

3:15	***Abraham P. Lee (UC Irvine):*** Microfluidic Cell Sorting and Microphysiological Circulation: From Liquid Biopsy to Vascularized Micro Tissue
3:45	***Elain Fu (Oregon State Univ):*** Engineering Paper Microfluidic Sensors for Point-of-Care Applications in Low-Resource Settings
4:15	***Utkan Demirci (Stanford Univ):*** Label-Free Magnetic Additive Biomanufacturing Technologies to Isolate and Sort Circulating Tumor Cells and Microemboli
4:45	***John O'Neill (MRC-LMB, Cambridge):*** The Cellular Circadian Clock Drives Daily Rhythms of Ion Transport
5:15	***Marina Tavares (Univ of Sao Paulo):*** Inspection of Solubilization Loci of Functional Series into Micelle Compartments As a Guide to Improve MEKC Selectivity

Award Session of the AES Electrophoresis Society in honor of Jean Louis Viovy, Institut Curie & CNRS

Location: Parc 55 Hotel, Embarcadero Room

Chairs: Rodrigo Martinez-Duarte and Christa Hestekin

3:15	***Delphine Le Roux (Univ of Virginia):*** Pushing the Limits of High Resolution Electrophoretic DNA Separations on Microdevices with Short Effective Separation Lengths
3:45	***Amit Meller (Israel Institute of Technology):*** Nanopore Sensing - Beyond DNA Sequencing
4:15	***Madhavi Krishnan (Univ of Zurich):*** Measuring Macromolecular Properties in a Field-Free Single Molecule Trap
4:45	***Yoshinobu Baba (ImPACT Research Center for Advanced Nanobiodevices):*** Nanobiodevice-Based Electrophoretic Separations of Single Biomolecule, Exosome, and Cell for Medical Innovations
5:15	***Jean-Louis Viovy (Institut Curie & CNRS):*** From Electrokinetics to Microfluidics and Back

5:45-7:30

Poster Session

Location: Parc 55 Hotel, Embarcadero Room

Chairs: Blanca Lapizco-Encinas and Victor Ugaz

AWARDS GIVEN TO BEST STUDENT POSTER!

6-9 PM

AES Gala. $60 (payable at door) @ Un-Scripted, 533 Sutter St.

Mingle as you enjoy appetizers and drinks then be entertained by an improv show!

7-8 PM

Informal Meet and Mingle @ Bartlett Hall

242 O'Farrell Street, San Francisco

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VISIT OUR EXHIBITORS: