

12th International Symposium on Electrokinetic Phenomena
September 10 to 12, 2017

update: Sept. 7, 2017, subject to changes

PROGRAM

Sunday, Sept. 10, 2017

16:30 *Registration*

17:50 **Opening**

Chair: Carsten Werner

18:00	Martin Bazant	Massachusetts Institute of Technology, USA	Electrokinetic control of interfacial instabilities
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18:45 **Get-together**

21:00 *End Get together*

Monday, Sept. 11, 2017

08:00 *Registration*

08:50 **Opening remarks / technical information**

09:00 **Basic principles of electrokinetic phenomena**

Chair: Brian Kirby

09:00	Antonio Ramos	Departamento de Electronica y Electromagnetismo, Universidad de Sevilla, Spain	A survey of AC electrokinetics of conducting microparticles
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09:30	Jean-François Dufrêche	University of Montpellier, France	Diffusiophoresis of charged colloidal particles in the limit of very high salinity
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09:50	Ángel V. Delgado	University of Granada, Spain	AC electrokinetics of salt-free suspensions: model and experiments
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10:10	Yuki Uematsu	Kyushu University, Japan	Electrokinetic power law and capacitance analyzed by double-layer model with interfacial box layer
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10:30 *Break*

10:50 **Molecular theories**

Chair: Martin Bazant

10:50	Christian Holm	Institut für Computerphysik, Universität Stuttgart, Germany	Simulating electrokinetic effects in soft matter systems
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11:20	Laurent Joly	Université Lyon 1 - Institut Lumière Matière, France	Molecular views on surface-driven flows: the crucial role of interfacial hydrodynamics
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11:40	Vladimir Lobaskin	University College Dublin, Ireland	Electrophoresis of Janus particles: A molecular dynamics simulation study
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12:00 **Rapid fire poster presentation I (topic "Basic principles of electrokinetic phenomena" and "Molecular theories")**

12:35 **Lunch buffet & poster session I (topic "Basic principles of electrokinetic phenomena" and "Molecular theories")**

14:00 **Electrokinetic assembly**

Chair: Frieder Mugele

14:00	Alexander Kuhn	Université de Bordeaux, France	Opening new pathways for advanced surface modification with bipolar electrochemistry
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14:30	Oleg D. Lavrentovich	Kent State University, USA	Sorting and separation of microparticles by surface properties using liquid crystal-enabled electro-osmosis
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14:50	Alicia Boymelgreen, Tov Balli, Touvia Miloh and Gilad Yossifon	Technion - Israel Institute of Technology, Israel	Un-fixing the electric field gradient: Active colloids as mobile floating microelectrodes
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15:10	Steffen Hardt	TU Darmstadt, Germany	Pattern formation of DNA molecules at the interface between two immiscible electrolytes
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15:30 *Break*

15:50 **Ion-specific effects in materials sciences**

Chair: Paul Dubin

15:50	Pavel Jungwirth	Institute of Organic Chemistry and Biochemistry, Academy of Sciences of the Czech Republic	Beyond Hofmeister: Interactions between ions and proteins/peptides in aqueous solutions
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16:20	James D. Sterling	Keck Graduate Institute, USA	Lyotropy in biohydrogels
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16:40	Natalie Malikova	UPMC-CNRS, Sorbonne Université, Paris, France	Model polyelectrolytes in the bulk and at charged mineral surfaces
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17:00 *End of the program*

19:00 **IAB Meeting**

19:30 **Conference dinner**

Tuesday, Sept. 12, 2017

09:00 Charge regulation, binding and electrokinetics in living matter

Chair: James D. Sterling

09:00	Paul Dubin	University of Massachusetts, USA	Heparin and heparan sulfates: The polyelectrolytes that aren't
09:30	Nancy C. Stellwagen	University of Iowa, USA	The electrophoretic mobility of charge variants of DNA and other polyions
09:50	Ralf Zimmermann	Leibniz-Institut für Polymerforschung Dresden e. V.	Modulation of cellular response by biomolecular gradients in glycosaminoglycan-based hydrogels with variable sulfation pattern

10:10 *Break*

10:30 Ionic transport in polyelectrolyte complex materials

Chair: Pavel Jungwirth

10:30	Monika Schönhoff	Westfälische Wilhelms-Universität, Münster, Germany	Ionic transport in polyelectrolyte complexes and battery electrolyte materials
11:00	Matthias Wessling	DWI – Leibniz Institute for Interactive Materials, Germany	Overlimiting currents at ion exchange membranes
11:30	Hidetoshi Matsumoto	Tokyo Institute of Technology	Quasi-solid electrolytes based on ionic liquids containing inorganic nanofibers for energy devices

11:50 Rapid fire poster presentation II (all other topics except "Basic principles.." and "Molecular theories")

12:20 Lunch buffet & poster session II (all other topics except "Basic principles.." and "Molecular theories")

13:40 Advanced methods

Chair: Antonio Ramos

13:40	Patrick R. Unwin	University of Warwick, UK	Multifunctional ion conductance microscopy: Physicochemical characterisation of charged interfaces and ion fluxes
14:10	Denis Botin	Johannes-Gutenberg-Universität Mainz, Germany	Multiple scattering free SHDLV for measuring electrophoretic mobilities over a wide range of particle concentrations
14:30	Frieder Mugele	University of Twente, Netherlands	Probing dissipation in confined films of aqueous electrolytes by Atomic Force Microscopy
14:50	Filip Strubbe	Ghent University, Belgium	Electrokinetic trapping aiding the analysis of single colloidal particles

15:10 *Break*

15:30 Electrokinetics in bioanalytical applications and bioseparation

Chair: Alexander Kuhn

15:30	Brian Kirby	Cornell University, USA	Electrokinetic readouts of glycoprotein expression and drug resistance in cancer cells
16:00	Juan G. Santiago	Stanford University, USA	Capacitive deionization (CDI) of water: How much energy is dissipated and how much is stored?
16:30	Hideyuki Sugioka	Shinshu University, Japan	Bio-mimic devices using induced-charge electro-osmosis with the fundamental analysis on ion diffusion phenomena
16:50	A. Yaroshchuk	Universitat Politècnica de Catalunya, Spain	Theoretical optimization of micro/nano-channel systems for counter-gradient sample pre-concentration in (bio)-chemical microanalysis

17:10 Concluding remarks

17:20 *End of the conference*