Announcements

Final program + abstracts online

Conference program

Program overview

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Links

ELKIN
Ghent University
Liquid Crystals & Photonics group
The city of Ghent

Contact

Via email

Opening Reception
Reception at the City Hall

Detailed program

Tuesday May 20

Tutorial day

Download Abstracts

08:30 Reception desk open (Aula)
09:30 TL1 Tutorial Lecture: Hans Lyklema
  Principles of Electric Double Layers and Electrokinetics
10:45 TL2 Tutorial Lecture: Hiroyuki Oshidama
  Electrokinetics of Soft Particles
12:00 Lunch
13:00 TL3 Tutorial Lecture: Dennis Prieve
  Charge Effects in Doped Nonpolar Liquids
14:15 TL4 Tutorial Lecture: Oleg Lavrentovich
  Basic Properties of Liquid Crystals
15:30 Coffee Break
16:00 TL5 Tutorial Lecture: Angel Delgado
  Biological and Environmental Applications
17:15 TL6 Tutorial Lecture: Matthew Suss
  Introduction to Electro-Microfluidics: Theory and Cutting Edge Applications
18:30 Free
19:00 Opening Reception (Aula)

Wednesday May 21

Session Theory and fundamentals

Download Abstracts

08:00 Reception desk open (Aula)
08:45 Opening words (Aula)
09:00 KN1 Keynote: I. Palberg
  On the Density Dependence of the Electrophoretic Mobility
09:45 O1 B. Siboulet, J-F. Dufrêne, B. Cossne, P. Turq
  Multi-scale Modelling of Silica Surfaces for Electrokinetic Phenomena
10:05 O2 C. Chassagne, G. Stelling, Y. Tsujimoto
Role of Particle Shape in the Electrokinetic Response

Electrokinetics of Metal Nanowires

10:45 Coffee Break

11:05 O4  S. Shklov
Electro-Optic and Some Other Electrokinetic Phenomena

11:25 O5  Y. Green, G. Yossifon
Electroconvection in Heterogeneous Perselective Systems

11:45 O6  A. Yaroshchuk, M. Bondarenko
Modelling Ion Transfer through Ultra-Thin Membrane Barrier Layers: the Role of Deviations from Local Electric Neutrality

12:05 O7  H. Sugimoto
Ion-conserving Poisson-Boltzmann Theory and the Extension to the Induced-charge Electrokinetic Phenomena

Polarization and Electroosmotic Flow in Systems of Various Geometry and Physicochemical Properties

12:45 O9  J.J. López-García, C. Grosse, J. Horno
Mixed Equilibrium Electrical Double Layers: Ion Size and Effective Ion Permittivity Effects

13:05 Lunch

Session Electro-Microfluidics

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13:50 KN2  Keynote: T.M. Squires, R. Nery-Azevedo, J.S. Paustin
Electrokinetics with Tailored Porous Materials: Direct, In Situ Measurement of Phoretic Migration, and Nonlinear Electrokinetic Pumps

14:35 O10  T. Heldal, N. Mishchuk, T. Volden, J. Auerwald, H. Knapp
Microfluidic Pump Based on Concentration Polarization of Ion-Exchange Beads

14:55 O11  C.P. Nielsen, H. Bruus
Models of Hydrodynamic Dispersion in an Electrolyte Moving through a Microchannel during Concentration Polarization

15:15 O12  J. Schliffbauer, N. Liebowitz, S. Park, G. Yossifon
Probing Space Charge and Resolving Overlimiting Current Mechanisms at the Micro-Nanochannel Interface Using Electrochemical Impedance Spectroscopy

15:35 Coffee Break

15:55 KN3  Keynote: M. Suss
Novel Electrochemical Systems for Energy Storage and Water Desalination Leveraging Flow-through Porous Media

16:40 O13  P. García-Sánchez, J.J. Arcenegui, H. Morgan, A. Ramos
Suppression of Induced-Charge Electroosmosis by the Addition of Polyethylene Oxide to the Electrolyte

17:00 O14  O. Schnitzer, I. Frankel, E. Yariv
Electrophoresis of Bubbles

17:20 O16  O. Schnitzer, I. Frankel, E. Yariv
Electrokinetics of Metal Drops Revisited

18:00 Official Reception at the City Hall

Thursday May 22

Session Colloids in Liquid Crystals

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09:00 KN4  Keynote: O.D. Lavrentovich
Electrokinetics in Nematic Liquid Crystals

09:40 O16 K. Kang, J.K.G. Dhont  
Field-Induced Transitions in Suspensions of Rod-like Colloids, Association and Dissociation of Condensed Ions

10:00 O17 O. Hennich, K. Stratford, J. Lintuvuori, D. Marenduzzo, M.E. Cates  
New Soft Composite Materials Based on Blue Phases and Cholesteric Liquid Crystals

10:20 KNS E. Brasselet  
Localized Topological Structures in Liquid Crystals: Generation, Manipulation and Applications

11:00 Coffee Break

Session Nonpolar Media

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11:25 KN6 Keynote: P. Bartlett  
Colloid Electrostatics at Very Low Ionic Strengths

12:10 O18 D.S. Cho, Y.K. Suh  
Development of Two-Way EHD Pump by the Use of Four Circular Electrodes

12:30 O19 Amr Abdel-Fattah  
Colloid and Interface Science Advancing Petroleum Technology

12:50 O20 G.N. Smith, J. Eastoe  
Surfactant-Induced Charging of Colloidal Latexes in Nonpolar Solvents

13:10 Lunch

Session Soft Colloids

Download Abstracts

Electrokinetic Analysis to Reveal Charge, Structure and Biomolecular Interactions of Planar Diffuse Soft Interfaces

17:05 O21 A.V. Sybachin, O.V. Zaborova, V.N. Orlov, Y. Telman, A.A. Yaroslavov  
Complexes of Anionic Liposomes with Spherical Polycationic Brushes as Multifunctional Nanocontainers

17:25 O22 Y. Adachi, L. Feng  
Effect of Charge Density of Polyelectrolyte Chain on the Electrophoresis and Stability of PSL Particles Coated with Poly-Cation

17:45 O23 M. Rasmussen  
Non-Ionic Surfactant Adsorption on Anionic Paraffin Particles

18:05 Free

19:00 Boat Trip followed by the Conference Dinner

Friday May 23

Session Biological & Environmental Applications

Download Abstracts

08:30 Reception desk open

09:00 KN8 Keynote: R.J. Hill  
Electrokinetics of Nanoparticle Doped Hydrogels

09:45 O24 N.C. Steilwagen  
The Free Solution Mobility of DNA Charge Variants

10:05 O25 E. Chibowski, A. Szczes, M. Jurak  
Zeta Potential of Phospholipid/Cholesterol Liposomes Affected by Enzyme

10:25 O26 I. Guido, E. Bodenschatz
Migration of Amoeba Cells in an Electric Field

10:45 Coffee Break

11:10 O27 M. Rebattevel
**Negative Joule Heating In Ion-Exchange Membranes**

11:30 O28 S. Schlumpberger, M.E. Suss, D.S. Deng, A. Manl, M.Z. Bazant
**Water Purification and Brine Concentration by Shock Electrodialysis**

11:50 O29 Z. Sadowski, A. Dydyl-Mucha, I. Polowczyk
**Electrophoretic and Flotation Investigations of the Surface Properties Modification of Magnesite Using Biosurfactants and Surfactants**

12:10 O30 G. Lefèvre, A. Pia, F. Cadot, S. De launay, C. Mansour
**Effect of Water Impurities and Amine Buffers on Zeta Potential of Corrosion Products In Secondary Circuits of Pressurized Water Nuclear Reactors**

12:30 O31 R. Roa, E.K. Zhukovsky, G. Nägele
**Filtration of Soft Particles Suspensions**

**Multi-Ionic Effects on Energy Production Based on Double Layer Expansion by Salinity Exchange**

13:10 Lunch

Session Experimental Techniques

Download Abstracts

14:10 KN9 Keynote: J. Lyklema
**Electrophoresis of Homodispersed Hairy Silica Particles In Alcohol**

14:55 O33 P.J. Sides, D.C. Prieve
**Determination of the Zeta Potential and Permeability of a Porous Material by Rotation of a Disk-Shaped Sample**

16:10 O34 E. Maczka, M. Kosmulski
**Time-Dependent Electrokinetic Potentials in SDS-Hematite System**

15:35 O35 I.A. Martínez, É. Rolldin, P. Mastres, A. Ortiz, R.A. Ríca, Dmitriy Petrov
**Optical Tweezers: From Single Particle Electrophoresis to Stochastic Thermodynamics**

15:55 Coffee Break

16:20 KN10 Keynote: D. Prieve
**Debye Length, Conductivity and Permittivity of Doped Nonpolar Liquids Inferred from Electrochemical Impedance Spectroscopy**

17:05 O36 S. Gourdin, O. Bernard
**Electro-Acoustic Potential: From the Ions towards the Colloids**

17:25 O37 V. Abdoula, R.J. Hii
**Electroacoustics of Nanoparticle Doped Hydrogels**

17:45 O38 A.V. Delgado, S. Ahualli, M.A. González, R.A. Ríca, M.L. Jiménez
**Experimental Study of the Electric Permittivity Spectra and Dynamic Mobility of Suspensions of Gibbsite Nanoparticles**

18:05 Closing words (Aula)

Poster Session

Download Abstracts

P1 F. Carrillo, E. Ruiz-Reina, R. Roa, F.J. Arroyo, A.V. Delgado
**The Importance of Allowing for Realistic Conditions in Dynamic Electrophoresis of Spherical Particles In Aqueous Salt-Free Suspensions**

P2 F.A. Dissalto, A.M. Bouchet, C.L. Salcedo, A.C. Cutro, A. Hollmann and M.S. Friías
**Structural and Thermodynamic Properties of Water-Membrane Interphases: Significance for Peptide/Membrane Interactions**

P3 R. Fink, K. Bohinc
**Effects of Ethanol Based Disinfectant on Bacterial Zeta Potential**

Capacitive Energy Extraction from Salinity Differences Using Solid Carbon Electrodes

P5  T. Tanaka, H. Kato, K. Fujihara, M.S. Jami, M. Iwata
Effect of Flow Path Structure on Electroosmotic Devatering

P6  L. Lyseńko, N. Mishchuk, N. Borovitcky, E. Rynda
Electroosmotic and Pressure Driven Devatering of Clay Dispersions

P7  L. Lyseńko, N. Mishchuk, E. Rynda, A. Shen
Electroosmotic Remediation of Fine Clay Soils Polluted by Uncharged Hydrophobic Organic Compounds

P8  L. Maxwell, J. Pascal
Modeling the Effect of Alternating Applied Electrical Fields on Tumor Cell Death

P9  T. Pročančík, M. Kallay, J. Lützenkirchen
The Effect of Water on pH-Dependent Charge at Metal Oxide/Aqueous Electrolyte Interface

P10 P. Guedes, E.P. Mateus, N. Couto, Y. Rodríguez, A.B. Ribiero
Remediation of Triclosan in Soil through Electrokinetics

P11 A. Szczes, A. Jarosz-Wilkolazka, M. Czernierska, L. Holyasz
Flocculating Properties of an Extracellular Biopolymer Produced by Bacterial Strain Rhodococcus

P12 S.H. Hristova, A.M. Zhivkov
Electrophoretic and Electro-Optical Research of Montmorillonite Nanoplates

P13 P. P. Hristov, A.M. Zhivkov
Electrophoretic Mobility of Alumina Particles with Adsorbed Carboxymethyl Cellulose

P14 A. Obliger, M. Jardat, D. Coelho, S. Bekri, B. Rotenberg
Pore Network Model of Electrokinetic Transport through Charged Porous Media

P15 C. Sharma, T. Brans, S. Samal, P. Dubrueil, F. Beunis
Optical Trapping Electrophoresis of Conjugated Microparticles for Drug Delivery and Biomolecule Detection

P16 M. Canoja, M. Ravnik, S. Zumer
Light Beam Modulation Using Nematic Defect Lines

P17 W.A. Booth, B. Edwards, A. Timperman, K.D. Jo, N. Dreper
Travelling Wave Electrophoresis for Microfluidic Separations

P18 T. Brans, C. Schreuer, F. Strubbe, F. Beunis, K. Neyts
Enzyme Concentration Measurements with Optical Tweezing Electrophoresis

P19 H. J. Kel, G.Y. Chen
Transient Electrokinetic Flow in a Fibrous Porous Medium

P20 M. Stubbe, J. Gimsa
Electro-Thermal Micro-Pumps: Exploiting Structural Polarizations at Smeared Interfaces

P21 Y. Uematsu, T. Araki
Electro-Osmotic Flow of Semidilute Polyelectrolyte Solutions

P22 V. Adibria, R.J. Hill
Electroacoustics of Nanoparticle Doped Hydrogels

P23 F. Aliotta, P. Calandra, M. Pochyli, R.C. Pontierio, G. Salvato, C. Vasi
A Critical Review of the Electrospray Mechanisms

P24 M. Budden, S. Schneider, B.P. Cahill, J.M. Köhler
Electrical Switching of Droplets in Segmented Flow

Electroacoustic versus Electrophoretic Measurements on Suspensions of Nanocolloids

P26 L. Lapei, E. Otyepková, B. Lapaiková, M. Otyepka
Surface Energy Analysis (SEA) Study of Hyaluronan Powders

P27 P. Leroy, G. Mériguet, E. Zimmermann, J.A. Hulsman
Low Frequency Complex Impedance Measurements of Na-Montmorillonite Suspensions

P28 T. Leytsbacher, A. Yurechshuk
New Insights Into the Streaming Potential Analysis of Solids

P29 V. Milka
Electrical Properties of Polyelectrolyte/Nanoparticle Hybrid Films on Anisometric Colloids Studied by Electro-Optics

P30
K. Nakamura
Pore Size Monitoring of MFUUF Membranes during Filtration Processes by Streaming Potential Measurement

P31 C. Schreuer, T. Brans, S. Vandewiele, F. Strubbe, K. Neyts, F. Beunis
Alternating Zeta-Potential Pattern to Eliminate Electro-Osmotic Flow

P32 S. Vandewiele, O. Drobochak, F. Beunis, K. Neyts, F. Strubbe
Fourier-Bessel Based Image Analysis for Multi-Parameter Particle Characterization

P33 J. Vécak, L. Lapčík, B. Lapčíková
Impinging Jet Study of the Deposition of Colloidal Particles on Synthetic Polymer (Zecon)

P34 A.N. Zvykov, F.R. Gareeva, A.E. Aleksandrik
Electrokinetic Properties of Primary Particles of the Degglumated Detonation Nanodiamond In Aqueous KCl Solutions

P35 O. Drobochak, M. Karvar, E. Zago, F. Strubbe, K. Braeckmans, F. Beunis, K. Neyts
Visualization of Reverse Micelles Containing Water

P36 S.D. Finlayson, P. Bartlett
Highly Charged and Salt Free Nonpolar Colloids

P37 M. Karvar, F. Strubbe, F. Beunis, K. Neyts
Characterization of Size Inverse Micelles in Nonpolar Liquids Using Transient Current Measurements

P38 M. Prasad, F. Beunis, K. Neyts, F. Strubbe
Switching Charged Inverse Micelles in Non-Polar Liquids

P39 F. Strubbe, S. Vandewiele, O. Drobochak, F. Beunis and K. Neyts
Image Analysis for Studying Electrokinetics in Nonpolar Liquids

P40 I. Holý, A. Skrzys
Influence of DPPC Layers and PLA2 on Surface Properties of Silica Particles

P41 P. Zimmermann, S. Bartosch, U. Bonda, J. Posseckarid, U. Freudenberg, M. Merlik, C. Werner
Ionization, Structure and Biomolecular Interactions of Biophyrid Hydrosols

P42 J.J. Arconegui, P. Garcia-Sánchez, H. Morgan, A. Ramos
Electro-Orientiation of a Metal Nanowire Subjected to Thermal Fluctuations

P43 M. Queveda-Pérez, S. Ahusilla, A. Martín-Molina
Monte Carlo Simulation of Thermo-Responsive Charged Nanogels in the Presence of Salt

P44 O. Bernard, G.M. Roger, J. Aupiais, P. Turq
Electrophoretic Mobilities in Mixed Electrolytes: Effect of Ionic Strength in Concentrated Buffer Solutions. Modeling within the Mean Spherical Approximation

P45 V. Dahiel, Zhao X., M. Jardat
How Good Are Theories of Electrolyte Transport? Answers from Mesoscopic Simulations

P46 P. Leroy, N. Devreux, C. Tournassat, M. Azaroual
Modelling the Induced Polarization of Bentonite-Sand Mixtures

P47 C. Grossa
A Program for the Fitting of Debye, Cole-Cole, Cole-Davidson, and Havriliak-Negami Dispersions to Dielectric Data

P48 F. Ruiz-Reina, F. Carrille
Assessment of the validity range of the standard linear perturbation models of electrophoresis with high electric field calculations

P49 M. Tirado, S. Reat, C. Sandoval, O. Merlik, D. Comedi
ZnO Nanowire Arrays Grown by Electrophoretic Deposition Technique from Colloidal Suspensions of ZnO Nanoparticles

P50 H. Waszczu, T. Kinjo, H. Yoshida
Extended Coarse-Grain Methods for Coulomb Soup

P51 C. Zunke, F. Platten (Evers), R.D.L. Hanes, A. Yethiraj, S.U. Egelhaaf
Colloidal Dynamics in Simultaneous Electric and Optical Potentials

P52 J.J. López-García, C. Grossa, J. Horno
Influence of the Finite Size and Effective Permittivity of ions on the Equilibrium Double Layer around Colloidal Particles in Aqueous Electrolyte Solution