

ELKIN 2026

THE HAGUE

16th INTERNATIONAL SYMPOSIUM
ON ELECTROKINETICS

 23–25 JUNE, 2026
 THE HAGUE, THE NETHERLANDS

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Welcome to ELKIN 2026

Dear Participants,

It is our pleasure to welcome you to the beautiful city of The Hague for the 16th International Symposium on Electrokinetics (ELKIN 2026).

Over the years, ELKIN has grown into a renowned international forum for discussion and for sharing the latest advances in electrokinetics, spanning both fundamental research and real-world applications. We are pleased to welcome more than 150 participants from 40 countries who will present their latest research contributions.

The theme of ELKIN 2026, “Electrokinetics for Industrial Transformation,” reflects our ambition to emphasize the translation of electrokinetics research into emerging industrial applications.

We sincerely hope that you enjoy your stay in The Hague and that this symposium will provide you with an inspiring and memorable experience, fostering valuable discussions and networking opportunities.

On behalf of the ELKIN 2026 Organizing Committee,

The ELKIN 2026 Conference Co-Chairs

Jouke Dykstra, Wageningen University

Michele Tedesco, TNO

Program at a Glance

22 June (Monday)

18:00 – 20:00 Welcome Reception

23 June (Tuesday)

Conference day 1

08:00 – 08:50 Registration

08:50 – 09:00 Opening

09:00 – 16:30 Presentations

16:30 – 18:00 Poster sessions

24 June (Wednesday)

Conference day 2

08:30 – 09:00 Welcome Coffee

09:00 – 17:45 Presentations

16:15 – 16:55 IES Awards and Lyklema Lecture

19:00 – 22:00 Gala Dinner at Madurodam

25 June (Thursday)

Conference day 3

08:30 – 09:00 Welcome Coffee

09:00 – 16:00 Presentations

14:00 – 14:40 Dukhin Lecture

16:30 – 17:00 Poster Awards, General Assembly IES & Closing

26 June (Friday)

08:00 – 14:30 Industry Excursion

15:00 – 17:00 The Hague boat tour

Gala Dinner: The Gala Dinner will be held at Madurodam in the evening of **Wednesday, June 24**. See page 12 of the programme book for details. At 19:00 there will be a visit to the Madurodam attraction park. Dinner buffet will be serving from 19:30 to 22:00.

Industry Excursion: Technical tour to TNO's Faraday Lab in Petten will be held in the morning of **Friday, June 26**. See page 13 of the programme book for details. Those delegates who purchased tickets in advance for this event must board the bus at the back of Den Haag Centraal Station. The bus will leave at 08:00 SHARP!

TIME	Tuesday (June 23)	
08:00 – 08:45	Registration and welcome coffee	
08:45 – 09:00	Opening	
09:00 – 09:40	Juan Santiago (Plenary) A stirred-tank flow-electrode reactor for lithium extraction from brines	
	Colloids & Bio-electrokinetics I (Room 2.1 + 2.2, chair: Angel V. Delgado)	Flow batteries (Room 2.3, chair: Michele Tedesco)
09:45 – 10:15	Maarten Biesheuvel – The theory of colloidal interactions should not be called DLVO theory but is the Hamaker theory	Simone Dussi – Transport modelling across different architectures of organic redox flow batteries
10:15 – 10:30	Luis Rosa – Microbial influenced corrosion of stainless steel by Geobacter bacteria: direct electron transfer mechanism	Federico Paratore – Rethinking flow batteries: replacing membranes with liquid-liquid interfaces
10:30 – 10:45	Pedro de Souza – Charge stabilization and dynamics in polyelectrolyte phase separation	Ameya Bondre – Exploring strategies to improve dispersion and performance of slurry electrodes in all-iron redox flow batteries
10:45 – 11:15	Coffee break	
	Bio-electrokinetics II (Room 2.1 + 2.2, Maarten Biesheuvel)	Fundamentals of electrokinetics I (Room 2.3, chair: Iryna Zenyuk)
11:15 – 11:45	Evan Spruijt – Measuring and controlling the surface charge of coacervate droplets	Ankur Gupta – Diffusiophoresis in the presence of multiple electrolytes
11:45 – 12:00	Amit Meller – Nanopores and nanofluidics for single-molecule sensing: from basic science to clinical applications	Boris Louis – M ³ Scope: a Multiplane, Multicolor Microscopy platform for 3D optical reconstruction of electrokinetic flows
12:00 – 12:15	Anneline Hegelund Christensen – Effects of electrical interactions on the transport through plasmodesmata nanopores in plants	Flip de Jong – Real-time observation of nanoscale colloidal electrokinetics in 3D: what do we see?
12:15 – 12:30	Caglar Elbuken – Microfluidic electro-viscoelastic migration and applications in bionanoparticle separation	Daniel Markiewitz – Theory of macroscopic properties of concentrated electrolytes from short-ranged associations
12:30 – 12:45	Paul Takhistov – Electro-ionic transport origin of the impedance response in label-free biosensors	Georgina Ryan – Intermediate-current transitions in asymmetric binary electrolytes
12:45 – 13:00	Jennifer Tersteegen – Electric control of protein condensates	Yuki Uematsu – Zeta potentials of cotton membranes in acetonitrile solutions

TIME	Tuesday (June 23)	
13:00 – 14:15	Lunch	
14:15 – 14:55	Iryna Zenyuk (Plenary) Streaming current method for Metal–Electrolyte charge quantification	
	Electro–microfluidics I (Room 2.1 + 2.2, chair: Antonio Ramos)	Capacitive electrodes (Room 2.3, chair: Christian Linnartz)
15:00 – 15:15	Raul Fernandez–Mateo – Electrohydrodynamics of charged dielectric objects in electrolyte conductivity gradients	Angel V. Delgado – Electrokinetic manifestations of CO ₂ capture by electrical double layers
15:15 – 15:30	Andrés Rodríguez–Galán – The microfluidic oscilloscope: a Matlab–based tool for analyzing periodic flows	Adrian Usler – A deliberately biased study of electric double–layer capacitors
15:30 – 15:45	María L. Jiménez – Electrolyte–modulated, light–driven aggregation of microparticles via negative thermophoresis	Zakhar Maletskyi – Charging nanoporous capacitors: modelling in homogeneous approximation
15:45 – 16:00	Jungyul Park – Plasmon–activated light–to–ionic energy conversion via surface–charge engineering and nanochannel design	Aaron Ratschow – Convection can enhance the capacitive charging of porous electrodes
16:00 – 16:15	Lijing Xu – Tuning electro–osmotic water transport via ion dehydration in electrochemical desalination	Dan Ito – Coupled ion–electron transport in Prussian Blue and their framework dynamics
16:15 – 16:30	Suriya Dhakshinamoorthy – High–fidelity numerical models for porous electrokinetics	Cansu Kök – Interalkyl–MXene electrodes for selective and stable Lithium–ion extraction from aqueous solutions
16:30 – 18:00	Poster session & Networking drinks (Foyer & Room 2.4)	

ELKIN 2026

16th INTERNATIONAL SYMPOSIUM ON ELECTROKINETICS

TIME	Wednesday (June 24)	
08:30 – 09:00	Registration and welcome coffee	
09:00 – 09:40	Lyderic Bocquet (Plenary) Ionic transport in nanochannels, from fundamentals to real world applications	
	Fundamentals of electrokinetics II (Room 2.1 + 2.2, chair: Yoav Green)	Electrodialysis (Room 2.3, chair: Xiao Su)
09:45 – 10:00	Nataliya Mischuk – Theoretical basis for investigating electrokinetic processes in natural disperse systems	Christian Linnartz – Visualizing the local ion concentration in electrodialysis cells via magnetic resonance imaging
10:00 – 10:15	Advait Gangal – Electrostatic interactions between charged spheres: revisiting Russel and Saville's critique of the Derjaguin approximation	Amit N. Shocron – Interfacial calcium accumulation in monovalent-selective electrodialysis
10:15 – 10:30	Sudharshan Anandan – Decoupling photothermal and light-induced electrokinetic mechanisms in UV-driven self-pumping janus membranes	Alaaeldin Elozeiri – Effect of solution pH on phosphate transport in anion-exchange membranes: anion mobility and equilibria
10:30 – 10:45	Pablo Diez Silva – UAMMD-Electrokinetics: simulation tools to model electrokinetic and dielectrophoretic phenomena in nanoparticle manipulation into UAMMD multiphysics library	Sheng Wang – Rapid and low-energy boron removal enabled by carbon cloth-integrated bipolar membrane electrodialysis
10:45 – 11:15	Coffee break	
	Electro-microfluidics II (Room 2.1 + 2.2, chair: Klaus Mathwig)	Advanced desalination (Room 2.3, chair: Alaaeldin Elozeiri)
11:15 – 11:45	Isaac Rubinstein – Finite-time dehydration as a chemical reaction	Frank Marken – Ionic diodes in membranes for desalination and electroosmotic water transport
11:45 – 12:00	John Sebastian – Electrokinetic constraints on intercellular signalling in plants	Hidetoshi Matsumoto – High-flux carbon nanotube array membranes for water treatment: insights into water permeation mechanisms
12:00 – 12:15	Juan Antonio Lirio Piñar – Tuning ion concentration polarization shock waves via polyelectrolyte-coated porous electrodes	Li Wang – Decoupling osmosis and electroosmosis in electrified desalination processes
12:15 – 12:30	Boris Zaltzman – The interaction between the Rayleigh-Bénard and the electroconvective instability in concentration polarization	Xiao Su – Controlling redox-electrochemistry for selective ion separations in critical element recovery
12:30 – 12:45	Somnath Bhattacharyya – Electrokinetics of soluble ionized surfactant laden droplets in multivalent electrolytes	Birger Horstmann – Thermodynamically consistent modeling of ion exchange membranes in multi-ionic solutions

TIME	Wednesday (June 24)	
13:00 – 14:15	Lunch	
14:00 – 14:40	Martin Z. Bazant (Plenary) Advanced Lithium Extraction using Battery Electrodes	
	Active particles (Room 2.1 + 2.2, chair: Michele Tedesco)	Selective ion separations (Room 2.3, chair: Amit Shocron)
14:45 – 15:00	Alicia Boymelgreen – Wall accumulation of active particles: an experimental realization	Alon Herman – Ratcheting up selectivity: a new paradigm in ion separation
15:00 – 15:15	Ido Rachbuch – Hybrid magnetic–electric actuation for enhanced motion control and multi–surface operation of janus microrobots	Rui Wang – Preferential selectivity of mono– and divalent ions in positively and negatively charged polyamide nanofiltration membranes
15:15 – 15:30	Ana Cazorla del Águila – On–demand chirality switching for efficient navigation of Janus rod–like colloids in porous media	Yun Guo – Electrostatically regulated tradeoff between ion partitioning and migration in polyamide membranes
15:30 – 15:45	Venkata Manikantha Sai Ganesh Tanuku – Active particles in tunable compressible environments	Arjun Yennemadi – Continuum modeling of coupled electrokinetic, electrochemical, and speciation control for Co/Ni separation
15:45 – 16:15	Coffee break	
16:15 – 16:55	IES Awards and Lyklema Lecture by Yoav Green (Plenary, chair: Martin Bazant)	
	Electrophoresis I (Room 2.1 + 2.2)	Electrosorption (Room 2.3, chair: Anett Georgi)
17:00 – 17:15	Nader Nekoubin – Ionic current rectification and blue energy generation in pores coated with a polyelectrolyte layer	Weiyi Pan – Surface–engineered electrodes for sustainable boron removal via bipolar membrane–assisted electrosorption
17:15 – 17:30	Merete Seyfried – Confined weak electrolytes show a strong thermoelectric response	Paul Westerfeld – LiMn ₂ O ₄ in intercalation flow electrodes: introducing lithium selectivity to FCDI
17:30 – 17:45	Yuanze Chen – Self–assembly of colloidal particle patterns in planar electrophoretic cells	Kaiyue Li – Concentration–dependent switching to near–infinite selective separation in multi–ion mixtures
19:00 – 22:00	Conference dinner (Madurodam)	

TIME	Thursday (June 25)	
08:30 – 09:00	Registration and welcome coffee	
09:00 – 09:40	Matthias Wessling (Plenary) From Membranes to Electrodes: Visualizing Electrohydrodynamic Transport	
	Electrophoresis II (Room 2.1 + 2.2, chair: Robbyn Anand)	Electrochemical separation of organics (Room 2.3, chair: Weiyi Pan)
09:45 – 10:00	Aaron Timperman – Microfluidic transverse AC electrophoresis with an integrated binding assay for single cell phenotyping	Anett Georgi – Electrosorption of short-chain perfluoroalkyl acids on activated carbon felts – a strategy for more sustainable water treatment
10:00 – 10:15	Tudor Filip – Printed flexible electrodes as accessible platform for dielectrophoretic manipulation of MXene nanoflakes	Connie Au – Reversing adsorption: revealing PFAS desorption behavior by electro-regeneration
10:15 – 10:30	Claire Chassagne – A new analytical formulation for the electrophoretic mobility of a colloidal sphere	Mahsa Kianinia – Modeling reversible protein capture and release in inverted capacitive deionization process
10:30 – 10:45	Rajnandan Borthakur – Electrophoretic motion of non-uniformly charged particles suspended in arbitrary background flows: an exact reduced-order approach	Pegah Fatehbasharzar – Mechanistic insights into the electrosorption of diverse organic compounds: is molecular structure a barrier?
10:45 – 11:15	Coffee break	
	Electro-microfluidics III (Room 2.1 + 2.2, chair: Claire Chassagne)	Electrokinetics in novel applications (Room 2.3, chair: Li Wang)
11:15 – 11:45	Antonio Ramos Reyes – Influence of concentration polarization electroosmosis on the AC electrokinetic manipulation of microparticles	Willem van Roy – DEP on the (sub-)100 nm scale: crossing the boundaries from life sciences to information technologies
11:45 – 12:00	Carlos Vargas – Analysis of diffusion-controlled current of redox soluble species at interdigitated array electrodes with overlapping electrical double layers	Nasim Heydari – Multiphysics insights into water balance in CO ₂ electrolyzer MEAs: interplay of transport mechanisms and homogeneous reactions
12:00 – 12:15	Robbyn Anand – Tunable in-droplet enrichment and pinch-off driven by electrokinetically generated viscosity gradients	Yoav Green – Goldman-Hodgkin-Katz equation, reverse electrodialysis, and everything in between
12:15 – 12:30	Alper Tunga Celebi – Molecular insights into ion-specific adsorption and electroosmotic flow at charged interfaces	Sai Manoj Gali – Impact of membrane spatial structure and electro-osmotic flux on the performance of alkaline water electrolyzers: insights from modelling

TIME	Thursday (June 25)	
12:30 – 12:45	Etienne Niemiec – EHD–driven micro–cones dynamic patterns in a confined non–polar fluid mixture	Mikolaj Kozak – Tailor your nanomaterial: controlled topography by electrodeposition on active spots.
12:45 – 13:00	Pramod P. Kothmire – Advancing electrocoalescer performance through electrohydrodynamic design and process intensification	
13:00 – 14:00	Lunch	
14:00 – 14:40	Dukhin Lecture by Nataliya Mishchuk (Penary, chair: Martin Bazant)	
	Fundamentals of electrokinetics III (Room 2.1 + 2.2, chair: Angel V. Delgado)	Electro–microfluidics IV (Room 2.3, chair: Frank Marken)
14:45 – 15:00	Tim Kamsma – Nonlinear surface charging dynamics for chemical–electrical synaptic plasticity in a fluidic microchannel	Hans–Georg Steinrück – Modelling cyclic voltammetry during solid electrolyte interphase formation
15:00 – 15:15	Vasily Artemov – Electrodynamics of water in single–digit nanoconfinements and its energy applications	
15:15 – 15:30	Satarupa Dutta – Electroosmotic flow rectification under coupled thermal and electric fields	Gilad Yossifon – From iontronic components to integrated ionic circuits: logic, memory, and molecular gating in polyelectrolyte microfluidic systems
15:30 – 15:45	Srikanta Debata – Independent parallel and collective control of electrically actuated Janus particles using a programmable optoelectronic platform	Ayelet Ben Kish Sharvit – Towards a unified mechanistic understanding of the electrical response of bipolar nanofluidic systems
15:45 – 16:00	Pablo García–Sánchez – Lateral migration of microparticles driven by concentration polarization	Makrand A. Khanwale – Resolving extreme multiscale effects of electroconvective instability for small Debye lengths
16:00 – 16:30	Coffee break	
16:30 – 17:00	Poster Awards, General Assembly IES & Closing	

Gala dinner

The Gala Dinner will take place in the evening of **Wednesday, June 24th**.

This will be a buffet dinner at **Madurodam**:

<https://www.madurodam.nl/en>

Madurodam is a unique and captivating miniature park located in The Hague, showcasing the Netherlands' most iconic landmarks, historical cities, and major innovations on a 1:25 scale.

Our evening will begin at **19:00** with an exclusive opportunity to explore the park. At 19:30, a buffet dinner will be served in a beautiful event space overlooking the miniature landmarks. Guests are welcome to enjoy the park at their leisure until 21:00.

The park is easily accessible by public transport. Take tram line 9 from Den Haag Centraal station and disembark at the Madurodam stop (15 minutes of travel time).



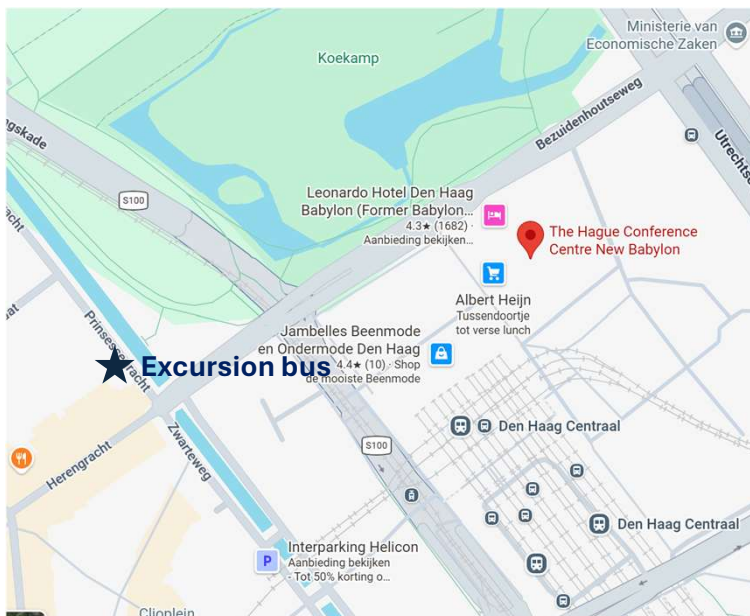
Industry Excursion

We will offer an excursion to **TNO's Faraday Lab** in Petten on **Friday morning, June 26** (lunch included). Below is the schedule:

- 08:00 Bus departure from The Hague Central
- 10:00 Arrival at TNO Petten, passport control, house rules
- 10:30 Presentation: Green hydrogen research at TNO's Faraday Lab
- 11:00 Faraday Lab tour
- 12:00 Lunch
- 12:30 Bus departure
- 14:30 Arrival at The Hague Central

The bus will leave at **08:00** sharp at Prinsessegracht 4.

The Faraday Lab is Europe's largest Hydrogen Research Facility, where TNO works together with electrolyser manufacturers and their suppliers on technological breakthroughs to scale up and optimize electrolysis technologies (PEM, alkaline, SOEC and AEM). At the Faraday Lab, manufacturers can develop and test new materials, components and applications with TNO, with all the necessary facilities and under different testing conditions.



Social Activity: Canal Boat Tour

The afternoon of **Friday, June 26th** offers a chance to unwind together with a relaxed boat tour through the historic canals of The Hague.

We will set off at **15:00** and return by **16:30** for a 90-minute cruise along the city's old canals. Each boat has its own skipper and guide, locals who know the city inside out and will share stories of The Hague as we pass its sights from the water.

Both departure and arrival take place at the **Pier at the Koekamp**, on the grass field next to The Hague Central Station.



The Hague Conference Centre

