

| Monday       | IAP 1 – Rabobank zaal  | IAP 2 – Nivo Noord zaal   | CDI Symposium – Bentacera zaal  |
|--------------|--|---|---|
| 8.30         | Registration desk open and coffee  |   |   |
| 9.30-9.40    | Welcoming ceremony ( <b>Bert Hamelers, Cees Buisman, David Waite</b> ) (Rabobank zaal)   |   |   |
| 9.40-10.20   | <b>Paul Tratnyek</b> - Oregon Health and Science University, USA - Reactivity of Iron Nanoparticles: Spectroscopy, Electrochemistry, Kinetics, and Environmental Implications (page 14) (Rabobank zaal, chair: Bert Hamelers)  |   |   |
| 10.20-11.00  | Coffee   |   |   |
| 11.00 -12.20 | <b>Catalysis and electrochemistry: carbon materials</b><br>Chair: <i>David Wesolowski</i>  | <b>Adsorption in environmental processes: analytical methods &amp; organic chemistry</b><br>Chair: <i>Ellen Graber</i>  | <b>Processes in CDI</b><br>Chair: <i>Bert van der Wal</i>   |
|              | <b>Mickaël Gineys</b> - Reversible trapping of water contaminants on nanoporous carbon electrodes (page 22)<br><b>Laurent Duclaux</b> - Adsorption kinetics and isotherms of micropollutants onto activated carbon fabric and felt (page 23)<br><b>Xu Zhao</b> - Electrochemical reduction of haloacetic acids in a three-dimensional electrochemical reactor with Pd-GAC particles as fixed filler and Pd-modified carbon paper as cathode (page 25)<br><b>Yael Mishael</b> - Developing Efficient Polycation-Clay Sorbents for the Removal of Pharmaceuticals and Dissolved Organic Matter (page 26) | <b>Soraya Heuss-Abichler</b> - Mineralogical investigations of precipitates obtained by treatment of Cu-rich waste water by Ferrite process (page 27)<br><b>He Zhao</b> - Cross-coupling oxidation of bisphenol A during electro-enzymatic oxidative process (page 28)<br><b>Benedicte Prelot</b> - Interactions of organic dyes with layered double hydroxides (page 29)<br><b>Manuel Nuño</b> - Study photocatalytic reactions for pollution remediation by electron ionisation mass spectrometry (page 30) | <b>Xiaowei Sun (k)</b> - Applications of electrosorption systems for waste water recovery (page 31)<br><b>Slawomir Porada (k)</b> - Electrodes in motion for water desalination and energy harvesting (page 32)<br><b>Kelsey Hatzell (k)</b> - CDI based on flowable electrodes (page 33)<br><b>Eran Avraham (k)</b> - Water desalination by CDI – advantages and limitations (page 34) |
| 12.20-13.00  | Lunch  |   |   |
| 13.00-13.40  | <b>Hans Lyklema</b> - Wageningen University, The Netherlands - Models of colloids and models for interpretation. A bit of history. (page 15) (Rabobank zaal, chair: Maarten Biesheuvel)  |   |   |

|             |   |   |   |
|-------------|---|---|---|
| 13.50-15.10 | <b>Catalysis and electrochemistry</b><br>Chair: <i>Paul Tratnyek</i>  |   | <b>New materials in CDI</b><br>Chair: <i>Maarten Biesheuvel</i>   |
|             | <b>Yi-Fan Han (k)</b> - Free Radicals Generating from Catalytic Decomposition of H <sub>2</sub> O <sub>2</sub> : New Strategies and Applications (page 35)<br><b>Rob Lammertink</b> - Fast Degradation In Immobilized Photocatalytic Microreactors (page 37)<br><b>HansPeter Zöllig</b> - Fast inhibition of direct ammonia oxidation on thermally decomposed iridium oxide films through a change in local pH (page 38)  |   | <b>Jieshan Qiu (k)</b> - Carbon Nanofiber and Graphene Composites made by Electrospinning for CDI (page 39)<br><b>Volker Presser</b> - Effect of pore size and its dispersity of porous carbon on capacitive deionization (page 40)<br><b>Chengzhi Hu</b> - Preparation of a MnO <sub>2</sub> /Carbon Composite Electrode for Electrosorptive Removal of Heavy Metal from Water (page 41)<br><b>Karthik Laxman</b> - Zinc oxide nanorods coated carbon electrodes for improved energy efficient CDI of brackish water (page 42) |
| 15.10-15.30 | Coffee  |   |   |
| 15.30-16.50 | <b>Catalysis and electrochemistry</b><br>Chair: <i>Huub Rijnaarts</i>   | <b>Adsorption in environmental processes: analytical methods &amp; organic chemistry</b><br>Chair: <i>Yi-Fan Han</i>  | <b>Applications of CDI</b><br>Chair: <i>Jieshan Qui</i>   |
|             | <b>Nora Sutton</b> - Geochemical and microbiological characteristics during in situ chemical oxidation and in situ bioremediation at a diesel contaminated site (page 43)<br><b>Loes Fasotte</b> - Removal of MTBE from groundwater by adsorption and catalyzed ozonation (page 44)<br><b>Elena Mejia Likosova</b> - An Innovative 2-Stage Process for the Recovery of Phosphorus and Recycling of Ferric from Ferric Sludges Generated in Water and Wastewater Treatment (page 45) | <b>He Jie</b> - Heterogeneous Fenton oxidation of catechol and 4-chlorocatechol catalyzed by nano-magnetite: role of the interface reaction (page 46)<br><b>Julien Muller</b> - Synthesis and complexation properties of new polyvinyl alcohol (PVA)-based chelating polymers (page 47)<br><b>Gaëlle Gassin</b> - Non linear optical tools to study ions remediation processes (page 48)<br><b>Jie Ye</b> - Preparation of γ-ALOOH loaded-zeolites and characteristics for phosphate adsorption (page 49) | <b>Jihun Kim</b> - Removal efficiency of high concentration waste water using Capacitive Deionization Process (page 50)<br><b>Alexandra Rommerskirchen</b> - Batch mode and continuous membrane capacitive deionization using flowing carbon electrodes (page 51)<br><b>Patrick Curran</b> - Hyper Salinity Desalination using Atlantis RDI Capacitive Deionization Technology (page 52)<br><b>Cleis Santos Santos</b> - Capacitive Deionization for Waste Water Re-use: Energy Efficiency Considerations (page 53)             |
| 17.00-18.00 | Poster session + drinks   |   |   |
| 18.00-19.30 | Reception   |   |   |

| Tuesday      | IAP 1 – Rabobank zaal   | IAP 2 – Nivo Noord zaal  | CDI Symposium – Bentacera zaal   |
|--------------|---|--|--|
| 8.30         | Coffee  |  |  |
| 9.00-9.40    | <b>Michael Sander</b> – ETH Zürich, Switzerland – Should I stay or should I go now: assessing electron transfer properties of organic and mineral phases using analytical electrochemistry (page 16) (Rabobank zaal, chair: David Waite)  |  |  |
| 9.50-11.10   | <b>Adsorption to engineered surfaces</b><br>Chair: <b>Alberto Tiraferri</b><br><br><b>Ellen Graber</b> - Role of Surfaces in the Biochar Effect (page 56)<br><b>John Gregory</b> - Phosphate adsorption on hydrous ferric oxide and its effect on the re-growth of broken flocs (page 57)<br><b>Dung Viet Pham</b> - Effect of phosphate sorption on Ferralsol dispersion: Evaluation with stability ratio and repulsive potential energy (page 58)<br><b>Behnam Akhavan</b> - Plasma Polymer Coated Particles: A New Class of Adsorbents for Water Purification (page 59)  | <b>Transport and mass transfer at interfaces</b><br>Chair: <b>Amy Tsai</b><br><br><b>Luewton L. Agostinho (k)</b> - Characterization of droplets produced by electrospray emulsification (page 60)<br><b>Norbert Kuipers</b> - Simultaneous production of high quality water and electrical power from aqueous feedstocks and waste heat by high pressure membrane distillation (page 61)<br><b>Krzysztof Trzaskus</b> - Investigating the fouling stages during membrane filtration of silica nanoparticle solutions (page 62)<br><b>Maïke Gröschke</b> - Transport of Sewage-borne Ammonium in a Floodplain Aquifer: Column Experiments with Aquifer Materials from the Yamuna Floodplain in Delhi (India) (page 63) | <b>Desalination</b><br>Chair: <b>Bert Hamelers</b><br><br><b>Frieder Mugele</b> - Ion adsorption at mineral-electrolyte interfaces probed by high resolution Atomic Force Microscopy (page 64)<br><b>Thomas Sweijen</b> - Pore-scale study of processes and transport in porous media; an overview (page 65)<br><b>Joeri de Valenca</b> - The Dynamics of Micro-vortices During Overlimiting Electrodialysis (page 66)<br><b>Sven Schlumpberger</b> - Water Purification and Brine Concentration by Shock Electrodialysis (page 67)  |
| 11.10-11.40  | Coffee  |  |  |
| 11.40 -13.00 | <b>Adsorption to engineered surfaces</b><br>Chair: <b>Rob Lammertink</b><br><br><b>Helene Fallou</b> - Dynamic adsorption of pharmaceutical residues at trace concentrations onto activated carbon cloths (page 68)<br><b>Alberto Tiraferri</b> - Adsorption of chitosan from aqueous solutions onto silica (page 69)<br><b>Shazia Ilyas</b> - Sacrificial polymer layers for easy membrane cleaning (page 70)<br><b>Yasuhisa Adachi</b> - Colloidal flocculation of PSL particle induced by an adsorption of polyelectrolyte studied in relatively concentrated suspension (page 71)   | <b>Transport and mass transfer at interfaces</b><br>Chair: <b>Luewton L. Agostinho</b><br><br><b>Norazanita Shamsuddin</b> - Effects of MF membranes deformation and permeability on filtration of clay suspension and its solution chemistry (page 72)<br><b>Stylianou Stylianos</b> - Modified Hydrophobic Ceramic Membranes: Use For Ozone Transfer To Water (page 73)<br><b>Barbara Liszka</b> - A pneumatic micro-fluidic device for in-situ detection of mineral scaling at a membrane surface (page 74)<br><b>Amy Tsai</b> - Momentum and mass transport over a superhydrophobic bubble mattress: the influence of interface geometry (page 75)   | <b>Capmix / New materials</b><br>Chair: <b>Slawomir Porada</b><br><br><b>Angel Delgado</b> - Temperature effects on energy production by salinity exchange (page 76)<br><b>Lorenza Misuri</b> - Functionalized activated carbon for “capacitive mixing” energy production (page 77)<br><b>Sangho Chung</b> - Ultrathin metal oxide coated mesoporous carbon material for enhanced capacitive deionization (page 78)<br><b>Jianyun Liu</b> - Mesoporous carbon nanofiber fabrication and its capacitive desalination application (page 79)<br><b>Park Namsoo</b> - CDI carbon electrode coated with ion selective layer (page 80)   |
| 13.00-14.00  | Lunch   |  |  |
| 14.10-14.50  | <b>Akram Alshwabkeh</b> – Northeastern University, Boston, USA - Electrochemical transformation of contaminants – electrode interface and beyond (page 18) (Rabobank zaal, chair: Raewyn Town)  |  |  |
| 15.00-16.20  | <b>(Bio-)polymer/water interaction and charge effects</b><br>Chair: <b>Luuk Koopal</b><br><br><b>Jerome Duval (k)</b> - Dynamics of metal uptake by biointerfaces (page 81)<br><b>Oane Galama</b> - Validity of the Boltzmann equation to describe Donnan equilibrium at the Membrane-Solution Interface (page 82)<br><b>Josep Galceran</b> - Recent advances in diffusive gradients in thin films (DGT). The role of electrostatic effects and dissolution of metal nanoparticles (page 83)<br><b>Louis de Smet</b> - Capacitive Response of PDMS-coated IDE Platforms Directly Exposed to Aqueous Solutions Containing Volatile Organic Compounds and Salts | <b>Case studies, transport and conversion</b><br>Chair: <b>Oane Galama</b><br><br><b>Yassine Bentahar</b> - Comparison of Arsenic Adsorption on clays from Morocco (page 93)<br><b>Juan Antelo</b> - Attenuation of metal cations by iron oxide minerals from acid mine drainage (page 94)<br><b>MA Weifang</b> - Adsorption and aerobic biodegradation of three selected endocrine disrupting chemicals in artificial groundwater recharge with treated reclaimed municipal wastewater (page 95)  | <b>New materials in CDI / characterization of CDI</b><br>Chair: <b>Volker Presser</b><br><br><b>Jeyong Yoon (k)</b> - The importance of carbon electrode material affecting the maximum deionization performance in CDI process (page 85)<br><b>Li-Ching Chung</b> - Insight in TiO <sub>2</sub> /AC electrodes prepared by a microwave-assisted ionothermal synthesis method for CDI (page 86)<br><b>Heena Mutha</b> - Vertically-Aligned Carbon Nanotube Electrodes for CDI (page 87)<br><b>Florian Schipper</b> - The Influence of Heteroatom Doping of Porous Carbon on the Salt Adsorption Capacity and Kinetics in CDI (page 88)<br><b>Yatian Qu</b> - Characterization of Internal Resistance for Capacitive Deionization Systems (page 89) |
| 16.20-16.50  | Coffee  |  |  |
| 16.50-17.50  | <b>(Bio-)polymer/water interaction and charge effects</b><br>Chair: <b>Michael Sander</b><br><br><b>Luuk Koopal</b> - Protein humic acid interaction (page 90)<br><b>Elise Rotureau</b> - A biophysicochemical approach for assessing the dynamics of metal uptake by microorganisms (page 91)<br><b>Mikhail Borisover</b> - Sorption of organic molecules on environmental sorbents: driving water molecules in or out? (page 92)  | <b>Characterization of CDI</b><br>Chair: <b>Jouke Dykstra</b><br><br><b>Chia-Hung Hou</b> - Study of Electrosorption Performance of Nanostructured Carbon Electrodes in CDI (page 96)<br><b>Doo-Hwan Jung</b> - Pore-structure of Activated Carbon Fibers on CDI (page 97)<br><b>James Landon</b> - Capacitive Deionization with PZC-Modified Carbon Xerogel: Half-Cell and System Analysis for Long-Term Operation (page 98)  |  |
| 18.30        | Dinner in De Grote of Jacobijnerkerk (location indicated on the map, which you can find on the back cover of this book)   |  |  |

| Wednesday    | IAP 1 – Rabobank zaal   | IAP 2 – Nivo Noord zaal   | CDI Symposium – Bentacera zaal   |
|--------------|---|---|--|
| 8.00         | Coffee  |   |  |
| 8.30-9.10    | <b>Liane Benning</b> – University of Leeds, UK - The Birth and Life Cycle of a Nanoparticle or how to make crystals from ions (page 19) (Rabobank zaal, chair: Erwin Klumpp)  |   |  |
| 9.20-10.40   | <p><b>Adsorption in environmental processes: Interaction and processes</b><br/>Chair: Yasuhisa Adachi</p> <p><b>Romain Dagnelie</b> - Diffusion Of Anthropogenic Organic Matter In Clay Rock (page 100)<br/><b>Olga L. Gaskova</b> - Uranium migration at nuclear waste management facilities: experimental versus thermodynamic modeling (page 101)<br/><b>Munehide Ishiguro</b> - Adsorption of sodium dodecylbenzene sulfonate in highly humic volcanic ash soil (page 103)<br/><b>Salini Sasidharan</b> - Coupled Effects of Hydrodynamic and Solution Chemistry Conditions on Long-Term Nanoparticle Transport and Deposition in Saturated Porous Media (page 104)</p> | <p><b>Nanoparticles, materials, effects, transport</b><br/>Chair: Philippe Behra</p> <p><b>Mieke Kleijn</b> - Coverage and disruption of phospholipid membranes by oxide nanoparticles (page 105)<br/><b>Wenfeng Tan</b> - Shape evolution synthesis of crystalline hematite (<math>\alpha\text{-Fe}_2\text{O}_3</math>) nanoparticles using ascorbic acid and tartaric acid (page 106)<br/><b>Toshio Sakai</b> - Removal of organic pollutants from water by <math>\text{TiO}_2/\text{CnTAB}</math> Nanoskeleton (page 107)<br/><b>Stéphane Daniele</b> - Smart Hybrid Nano-Composite Devices for Removal of PAH Micro-pollutant from Wastewaters (page 108)</p> | <p><b>Theory of CDI</b><br/>Chair: Matthew Suss</p> <p><b>Mathijs Janssen</b> - Temperature and size effects on the desalination of water (page 109)<br/><b>Andreas Haertel</b> - Structural and size effects on the desalination cycle of water (page 110)<br/><b>Maarten Biesheuvel</b> - Membrane CDI: definitions, and double layer modeling (page 111)<br/><b>Dennis Cardoen</b> - Multiphysics simulation of Membrane CDI for mixed streams (page 112)<br/><b>Announcements CDI conferences 2015, 2016</b></p> |
| 10.40-11.10  | Coffee  |   |  |
| 11.10 -12.10 | <p><b>Adsorption in environmental processes: Interaction and processes</b><br/>Chair: Mieke Kleijn</p> <p><b>Jerome Labille</b> - Is solution chemistry responsible for clay particle mobility through soil pores? (page 113)<br/><b>Chen Yang</b> - Sorption of tylosin on goethite (page 114)<br/><b>Philippe Behra</b> - Effect of pyrite interface on silver and mercury behavior in natural porous media (page 115)</p>  |   | <p><b>Processes in CDI</b><br/>Chair: James Landon</p> <p><b>Matthew Suss (k)</b> - Flow-through electrode CDI and experimental characterization of desalination electrodes (page 116)<br/><b>Jouke Dykstra</b> - Enhanced energy efficiency in increased discharging voltage Capacitive Deionization (page 118)<br/><b>Sung-il Jeon</b> - Seawater Desalination and Energy Recovery using Flow-electrode Capacitive Deionization (FCDI) (page 119)</p>  |
| 12.10-13.10  | Lunch   |   |  |
| 13.10-14.10  | <p><b>Adsorption in environmental processes: Interaction and processes</b><br/>Chair: Jerome Duval</p> <p><b>Raewyn Town</b> - Labilities of aqueous nanoparticulate metal complexes (page 120)<br/><b>Yonatan Keren</b> - Wastewater effects on soil-organic compound interactions, non-typical sorption isotherms and clay vs. SOM as sorbing phases (page 121)<br/><b>Liping Weng</b> - Arsenic Adsorption: Effect of pH, Natural Organic Matter and Oxides Composition (page 122)</p>   | <p><b>Nanoparticles (materials, effects, transport)</b><br/>Chair: Liane Benning</p> <p><b>Erwin Klumpp</b> - Retention and Remobilization of Stabilized Silver Nanoparticles in Soils (page 123)<br/><b>Sondra Klitzke</b> - The role of soil-borne DOC on the aggregation of synthetic Ag nanoparticles in soils (page 124)<br/><b>David Waite</b> - Silver nanoparticle-based water treatment: mechanistic aspects and technology viability (page 125)</p>   | <p><b>Processes in CDI</b><br/>Chair: Xiaowei Sun</p> <p><b>Gang Wang</b> - Ultrasound-assisted Preparation of Electrospun Carbon Nanofiber/graphene Composite electrode for CDI (page 126)<br/><b>Qinghan Meng</b> - CDI of NaCl solution using activated carbon electrodes in a novel CDI module (page 127)<br/><b>Bert van der Wal (k)</b> - Salt removal, water recovery and energy consumption in Membrane CDI (page 128)</p>   |
| 14.10-14.50  | <b>David Wesolowski</b> – Oak Ridge National Laboratory, USA - The Oxide-Water interface, Neither Oxide Nor Water! (page 20) (Rabobank zaal, chair: Volker Presser)   |   |  |
| 14.50-15.00  | Closing ceremony IAP 2014 (Rabobank zaal)   |   |  |
| 15.00        | Excursions to Wetsus or Fries Museum. In case you signed up for one of the excursions, please gather outside De Harmonie, near the entrance.  |   |  |