

Preliminary Program

Electrophoretic Deposition VIII: Fundamentals and Applications

October 12 - 16, 2025

Grand Hotel San Michele
Cetraro (Calabria), Italy

Conference Chair

Aldo R. Boccaccini, University of Erlangen-Nuremberg, Germany

Conference Co-Chairs

Begoña Ferrari, Institute for Ceramic and Glass, Spanish Research
Council, Spain

Andrew J. Pascall, Brookhaven National Laboratory, USA

Fabien Grasset, IRL LINK, CNRS, France

Kiyofumi Katagiri, Hiroshima University, Japan



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Sunday, October 12, 2025

17:30 – 18:30	Conference Check-in (Great Room)
18:30 – 19:30	Welcome Reception
19:30 – 21:00	Dinner

Locations and Notes

- *Technical Sessions will be in the Conference Center*
- *Speakers – Please have your presentation loaded onto the conference computer prior to the session start (preferably the day before).*
- *Speakers – Please leave at least 3-5 minutes for questions and discussion.*
- *Please do not smoke at any conference functions.*
- *Turn your mobile telephones to vibrate or off during technical sessions.*
- *After the conference, ECI will send an updated participant list to all participants. Please check your listing now and if it needs updating, you may correct it at any time by logging into your ECI account.*
- *Audiotaping, videotaping and photography of presentations are prohibited*

Monday, October 13, 2025

- 07:30 – 08:55 Breakfast (Breakfast Room)
- 08:55 – 09:00 **Opening remarks** (Begoña Ferrari and Aldo R. Boccaccini)
- Session 1: Fundamentals**
 Chair: Aldo R. Boccaccini
- 09:00 – 10:00 **Keynote: Using electricity to cue biological assembly mechanisms**
 Greg Payne, University of Maryland, USA
- 10:00 – 10:30 **EPD and Electrospinning: Controlled Deposition of Ultrahigh-Performance Continuous Nanofibers**
 Yuris Dzenis, University of Nebraska-Lincoln, USA
- 10:30 – 11:00 **Simulating EPD: linking process parameters to deposit microstructure**
 Rémi Martin, Université de Toulouse, France
- 11:00 – 11:30 **Preparation of structurally colored coatings with electrochromic properties via electrophoretic deposition**
 Kiyofumi Katagiri, Hiroshima University, Japan
- 11:30 – 12:00 Coffee Break (Patio)
- Session 2: Protective and Thermal Barriers**
 Chair: Fabien Grasset
- 12:00 – 12:30 **Development of dual-layer protective coatings for solid oxide cell interconnects using electrophoretic and electrolytic deposition**
 Sebastian Molin, Gdańsk University of Technology, Poland
- 12:30 – 13:00 **Electrophoretic deposition of thick zirconia thermal barrier coatings: Multilayer deposition mechanism via in-situ mass measurements, process robustness**
 Alexandre Bareille, Université de Toulouse, France
- 13:00 – 13:30 **Electrophoretic deposition of tin nanoparticles**
 A. Javier Sanchez-Herencia, Institute for Ceramic and Glass ICV-CSIC, Spain
- 13:30 – 15:00 Lunch
- 15:00 – 17:00 Networking / Free-time
- 17:00 – 17:30 **Combating biofilm formation on titanium implants via alternating current electrophoretic deposition of modified chitosan**
 Merve Kübra Aktan, KU Leuven, Belgium
- 17:30 – 18:00 **EPD of low friction and self lubricating PTFE coatings on titanium alloy substrate**
 Aleksandra Fiolek, AGH University of Krakow, Poland
- 18:00 – 18:30 **Corrosion detection**
 Shreya Bhosale, Vishwakarma Institute of Technology, India

18:30 – 19:30

JECS Trust Student Awards (Oral-Poster)

Chair: Begoña Ferrari

Effect of Processing Temperature on EPD-Derived Bioactive Composite Coatings for Metallic Implants

Rezvan Azari, University of Erlangen-Nuremberg, Germany

Electrophoretic deposition of octahedral molybdenum clusters and graphene oxide layers for antibacterial photoinactivation

Emilie Fragnaud, University of Rennes, France

Electropolymerized PEDOT on biomimetic templates for bone tissue regeneration

Rosa María Martín Rodríguez, Institute for Ceramic and Glass ICV-CSIC, Spain

Electrophoretic deposition of nano-TiO₂ on 3D-printed Al₂O₃ structures by binder jetting for water photocatalysis applications

Pablo Ortega-Columbrans, COLFEED4Print, Spain

Electrophoretic Deposition on Separated-from-the-Electrodes Polymer Membrane

David Stark, Tel-Aviv University, Israel

19:30 – 21:00

Dinner

21:00 – 22:00

Poster Session / Social Hour

Posters

1. **Machine Learning Approach to Predict the Ideal Parameters of Electrophoretically Deposited Titanium Bone Implants: Improve Corrosion behavior and its Biocompatibility**
R. Vignesh, University of Madras, India
2. **Analysis of coated samples containing hydroxyapatite/multiwalled carbon nanotubes on Ti-6Al-4V substrate**
Zainab Albarqaawee, University of Kufa, Iraq
3. **NOMAD: Novel biomaterials to prevent dental peri-implant infections**
Annabel Braem, KU Leuven Department of Materials Engineering (MTM), Belgium
4. **Electrostatic assembly of SiO₂-SiO₂ composite particles and formation of ordered arrays via electrophoretic stimulation**
Wai Kian Tan, Toyohashi University of Technology, Japan
5. **Electrophoretic Deposition for advanced Li-Ion batteries**
Diana Golodnitsky, Tel-Aviv University, Israel
6. **EPD of thyme oil-enriched sodium alginate-based coatings on stainless steel substrates**
Tomasz Cudak, AGH University of Krakow, Poland
7. **Effect of polydopamine layer on AC electrophoretic deposition of alumina/cellulose nanofiber composites**
Tomohiko Yoshioka, Okayama University, Japan

Tuesday, October 14, 2025

- 07:30 – 09:00 Breakfast (Breakfast Room)
- Session 3: Biomaterials and biofunctionalization of surfaces (I)**
Chair: Greg Payne
- 09:00 – 10:00 **Keynote: From current to cure: AC electrophoretic deposition for next-generation antimicrobial surfaces**
Annabel Braem, KU Leuven Department of Materials Engineering (MTM), Belgium
- 10:00 – 10:30 **Corrosion performance of bioactive Glass coating on Stainless steel Structures using electrophoretic deposition**
Salwa El Baakili, Euromed University of Fez, Morocco
- 10:30 – 11:00 **Chitosan-based coatings containing bioactive glass or silver nitrate on metallic filters by electrophoretic deposition (EPD)**
Zoya Hadzhieva, University of Erlangen-Nuremberg, Germany
- 11:00 – 11:30 Coffee Break (Patio)
- 11:30 – 12:30 **Keynote: Feasibility of Electrophoretic Co-deposition of Essential Oil and Polysaccharides to Develop Antimicrobial Coatings for Metallic Biomaterials: Microstructure and Properties**
Tomasz Moskalewicz, AGH University of Krakow, Poland
- 12:30 – 13:00 **Microstructure, wear, and corrosion properties of PEEK-based composite coating incorporating titania and copper-doped mesoporous bioactive glass nanoparticles**
Khalil Ahmad, Institute of Space Technology Islamabad, Pakistan
- 13:00 – 13:30 **Evaluation of Chitosan/mesoporous Bioactive Glass Coatings on PLA Scaffolds: A Comparison between Dip-coating and Electrophoretic Deposition Techniques**
Daniela Becker, UDESC, Brazil
- 13:30 – 15:00 Lunch
- Session 4: Biomaterials and biofunctionalization of surfaces (II)**
Chair: Annabel Braem
- 15:00 – 16:00 **Keynote: Design of Multifunctional Chitosan Patches embedding Alginate Microspheres for Drug and Cell Delivery**
Lina Altomare, Politecnico di Milano, Italy
- 16:00 – 16:30 **Effect of Processing Temperature on EPD-Derived Bioactive Composite Coatings for Metallic Implants**
Rezvan Azari, University of Erlangen-Nuremberg, Germany
- 16:30 – 17:00 **Electropolymerized PEDOT on biomimetic templates for bone tissue regeneration**
Rosa María Martín Rodríguez, Institute for Ceramic and Glass ICV-CSIC, Spain
- 17:00 – 20:00 Excursion
- 20:00 – 21:30 Dinner

Wednesday, October 15, 2025

07:30 – 09:00 Breakfast (Breakfast Room)

Session 5: Energy Storage and Generation Devices

Chair: Nicholas Vogel

09:00 – 10:00 **Keynote: Electrochemical Deposition of Nanoarchitectonic Metal Atom Cluster-based Photoelectrodes for Solar Cell Applications**
Adèle Renaud, University of Rennes, France

10:00 – 10:30 **Electrophoretic deposition of MnCu-based coatings for reversible solid oxide cell operation**
Francesco Gallo, Politecnico di Torino, Italy

10:30 – 11:00 **Electrophoretic deposition of electrocatalysts on proton-conducting membranes**
Michael Bredol, FH Münster University of Applied Sciences, Germany

11:00 – 11:30 Coffee Break (Patio)

11:30 – 12:00 **Coated current collector for energy storage device development: Manufacture, Testing and Industry Relevance**
John Low, Warwick University, UK

12:00 – 12:30 **Fabrication of BiVO₄ photoanodes via Electrophoretic Deposition for application in photoelectrochemical Cells**
Fernanda Garcia, Université Clermont Auvergne, France

12:30 – 13:00 **Electrophoretic Deposition of Graphene-Enhanced Structural Battery Electrodes for Multifunctional Energy Storage**
Zhenyuan Xia, Chalmers University of Technology, Sweden

13:00 – 13:30 **Electrophoretic deposition process: a very interesting tool to fabricate nanocomposites coating based on inorganic octahedral cluster units**
Fabien Grasset, CNRS–Saint-Gobain–NIMS, Japan

13:30 – 15:00 Lunch

15:00 – 16:00 Networking / Free-time

Session 6: Separation and Photocatalytic Membranes

Chair: Adele Renaud

16:00 – 17:00 **Keynote: Electrostatic separation of nanoplastics from wastewater**
Nicolas Vogel, University of Erlangen-Nuremberg, Germany

17:00 – 17:30 **Electrophoretically controlled solar absorbers based on carbon nanotube**
Guillaume Toquer, ENSCM, France

17:30 – 18:00 **Electrophoretic deposition of nano-TiO₂ on 3D-printed Al₂O₃ structures by binder jetting for water photocatalysis applications**
Pablo Ortega-Columbrans, COLFEED4Print, Spain

18:00 – 18:30 **Electrophoretic Deposition on Separated-from-the-Electrodes Polymer Membrane**
David Stark, Tel-Aviv University, Israel

18:30 – 19:00	Unveiling hidden electrochemical processes during electrophoretic deposition of nanostructures Alejandro Vazquez, Universidad Autónoma de Nuevo León, UANL, Mexico
19:00 – 19:30	The Use of Dielectrophoresis Separation in Increasing Refining Profits While Decreasing Enviromental Waste in Fuel Production Victor Scalco, General Atomics, USA
19:30 – 20:00	Reception
20:00 – 22:00	Gala Dinner

Thursday, October 16, 2025

07:30 – 09:30	Breakfast
	<u>Session 7: Optical and Optoeletronic Devices</u> Chair: A. Javier Sanchez-Herencia
09:30 – 10:00	Dynamic Interplay of Color Transitions and Particle Behavior in α-Fe₂O₃/SiO₂ Nanoparticle-Based Electrophoretic Displays Alyssa Troksa, Lawrence Livermore National Laboratory, USA
10:00 – 10:30	Rapid and Controllable Assembly of Three-Dimensional Nanocrystal Superlattice Films via Electrophoretic Deposition Xiaojie Xu, Lawrence Livermore National Laboratory, USA
10:30 – 11:00	Electrophoretic deposition for advanced nanostructured coatings: from Sb₂S₃ thin films to photonic crystals Clément Lebastard, ENSCR Rennes University, France
11:00 – 11:30	Coffee Break (Patio)
11:30 – 12:00	Simultaneous Shaping and Reduction of Binder-free Electrochemically Reduced Graphene Oxide Electrodes through Cathodic Epd Begoña Ferrari, Instituto de Ceramica y Vidrio, CSIC, Spain
12:00 – 12:30	Conclusions / Closing Remarks (EPD International Network, next EPD conference, etc.) Begoña Ferrari and Aldo R. Boccaccini
12:30 – 14:00	Lunch
	Departures