

Table of Contents

Conference Chairs

I. Advanced Experimental Techniques

Fast Deposition of Surface Structures by Two-Step EPD A. Nold, J. Zeiner and R. Clasen	3
Study of the Deposit Resistance during Electrophoretic Deposition L. Stappers, L. Zhang, O. Van der Biest and J. Fransaer	9
Distribution of the Local Electric Field during Electrophoretic Deposition of an Alumina Suspension on a Membrane H.C. Elsenheimer, J. Tabellion, F. Paul and J. Haußelt	15
Ceramic Coating on Metal Substrate by Electrophoretic Deposition Assisted by Sweeping Flow in Aqueous Suspension T. Mori, N. Hirasawa, R. Ito and J.I. Tsubaki	21
Application of Ionic Liquids in the Electrophoretic Deposition of Oxide Layers J. Grosse-Brauckmann, V. Lair and C. Argiris	27
Aqueous Electrophoretic Deposition at High Electric Fields B. Neirinck, J. Fransaer, J. Vleugels and O. Van der Biest	33
Pulsed-DC Electrophoretic Deposition (EPD) of Aqueous Alumina Suspension for Controlling Bubble Incorporation and Deposit Microstructure L. Besra, T. Uchikoshi, T. Suzuki and Y. Sakka	39
Near Net Shaping with Bimodal Powders on Shaped Membranes via EPD R. Clasen and C. Oetzel	45
Threshold Value of Particle Concentration in EPD: Experimental Evidence with TiO₂ Organic Suspensions S. Radice, S. Mischler and J. Michler	51

II. Nanostructured Materials, Carbon Nanotubes and Thin Films

Electrophoretic Deposition and Photocatalytic Activity of Titanate Nanosheets T. Kambayashi, Y. Daiko, H. Muto, M. Sakai and A. Matsuda	59
Deposition of Sonochemically Derived Nano Particles J. Grosse-Brauckmann, S. Matic, O. Schneider and C. Argiris	65
Electrophoretic and Electrolytic Deposition of Gold Nanoparticles on a Graphite Carbon Plate H. Watanabe, M. Fujii, A. Tada and M. Takahashi	71
Electrophoretic Deposition of Titania Nanopowders M. Ghorbani and M. Roushanafshar	77
Deposition of Multiwall Carbon Nanotubes Using Low Frequency Alternating Electrophoretic Deposition A.R. Gardeshzadeh, B. Raissi and E. Marzbanrad	83
Nickel Electrodeposition on Electrophoretically Deposited Carbon Nanotube Films M.F. De Riccardis, D. Carbone, V. Martina, M. Re, D.C. Meng, J.A. Roether and A.R. Boccaccini	87
Carbon Nanotube-Reinforced Hydroxyapatite Coatings on Metallic Implants Using Electrophoretic Deposition C. Kaya, F. Kaya, J. Cho, J.A. Roether and A.R. Boccaccini	93

III. Functional Coatings and Films

Electrophoretic Deposition of Lead-Zirconate-Titanate Perovskite Thick Films with Low Sintering Temperature D. Kuscer and M. Kosec	101
--	-----

Preparation of NASICON-Based Ceramic Thick-Film with Electrophoretic Deposition for Solid-State Photoluminescence Device	
Y. Shimizu, S. Takase, K. Ida, M. Imamura and I. Koguma	107
Electrophoretic Deposition of Star Polymer-Europium Chalcogenide Nanocomposite Films	
S. Somarajan, S.A. Hasan, M.A. Harrison, S.V. Mahajan, C.T. Adkins, E. Harth and J.H. Dickerson	113
Electrophoretic Deposition/Infiltration of Natural Zeolite Particles on/into Various Substrates	
S. Hayashi, J. Onoe, K. Ebina and N. Kodama	119
Preparation of Thin Proton Conducting Membranes by Means of EPD	
C. Argiris, J. Grosse-Brauckmann, G. Sourkouni, G. Taillades and J. Roziere	125
Electrophoretic Deposition Mechanism of Mesoporous Silica Powder in Acetone	
A. Miyamoto, H. Negishi, A. Endo, B.W. Lu, K. Sakaki, T. Ohmori, H. Yanagishita and K. Watanabe	131
Photocatalytic Destruction of 1,4-Dioxane in Aqueous System by Surface-Roughened TiO₂ Coating on Stainless Mesh	
S. Yanagida, A. Nakajima, Y. Kameshima and K. Okada	137
Formation of Crystalline-Oriented Titania Thin Films on ITO Glass Electrodes by EPD in a Strong Magnetic Field	
M. Kawakita, T. Uchikoshi, L. Besra, T. Suzuki, J. Kawakita and Y. Sakka	143

IV. Industrial Applications and Ceramic Coatings

Intermediate Scale Production of Ceramics and Ceramic Coatings by EPD	
J. Blackburn	151
Developing an Electrophoretically Depositible Self-Lubricating Nanocomposite Paint Process for a Short Recoil Semi-Automatic Handgun Application	
P. Hope	157
pH Effect on Electrophoretic Deposition in Non-Aqueous Suspensions and Sintering of YSZ Coatings	
H. Xu, I.P. Shapiro and P. Xiao	165
Influence of Water on the Preparation of Thick Mesoporous Silica Coatings by the Electrophoretic Deposition Method	
H. Negishi, A. Endo, A. Miyamoto, K. Sakaki and T. Ohmori	171
Monitoring Constrained Sintering of YSZ Coatings Using Fluorescence Spectroscopy and Micro-Hardness	
I.P. Shapiro, X.F. Zhao, H. Xu and P. Xiao	177
Electrophoretic Deposition of Natural Hydroxyapatite	
M. Javidi, S. Javadpour, M.E. Bahrololoom and J. Ma	183
Processing and Characterization of Biocompatible Titania Coatings by Electrophoretic Deposition	
M.J. Santillán, N.E. Quaranta, F. Membrives, J.A. Roether and A.R. Boccaccini	189
Electrophoretic Deposition of Smectite Particles onto Copper Plate	
H. Watanabe, H. Matsushima, M. Fuji and M. Takahashi	195
Fly Ash Cenospheres Coatings by EPD-Microwave Sintering Process for SiC Corrosion Resistance	
A. Chávez-Valdez, G. Vargas-Gutiérrez, J.M. Almanza-Robles and A. Arizmendi-Morquecho	201

V. Fuel Cells and Composite Materials

Electrophoretic Deposition as Preparation Method for Intermediate Temperature SOFC Half Cells	
C. Szepanski, J. Grosse-Brauckmann and C. Argiris	209
Electrophoretic Deposition of YSZ Electrolyte on Porous NiO-YSZ Substrate for Solid Oxide Fuel Cells	
T. Talebi, B. Raissi and A. Maghsoudipour	215
Alumina and Zirconia Based Composites: Part 1 Preparation	
H. Hadraba, K. Maca and Z. Chlup	221

Alumina and Zirconia Based Layered Composites: Part 2 Fracture Response Z. Chlup and H. Hadraba	227
Control of Residual Stress in Multilayered Alumina Composites Prepared Using EPD in a Strong Magnetic Field T. Suzuki, T. Uchikoshi and Y. Sakka	233
Infiltration of a 3-D Fabric for the Production of SiC/SiC Composites by Means of Electrophoretic Deposition S. Novak, K. König, A. Iveković and A.R. Boccaccini	237
Galvanostatic Electrophoretic Deposition of Yttriumsilicate on C/C-Si-SiC Composites J. Grosse-Brauckmann, T. Damjanović and C. Argirusis	243
Electrophoretic MEA Fabrication for High Performance DMFC H. Munakata, S. Omori and K. Kanamura	249

VI. EPD in Ceramic Processing

Electrophoretically Deposited Porous Ceramics and their Characterisation by X-Ray Computer Tomography K. Moritz and T. Moritz	255
Textured α-Alumina through Electrophoretic Deposition and Templated Grain Growth L. Zhang, A.K. Kanjarla, J. Vleugels and O. Van der Biest	261
Preparation and Electrophoretic Deposition of an Yttrium Silicate Precursor Sol J. Grosse-Brauckmann, G. Borchardt and C. Argirusis	267
Controlling of Surface Parameters of Particles Used for Electrocodeposition C. Bellmann, A. Caspari and K. Grundke	273
Aging Behavior of Yttria Stabilized Zirconia (YSZ) in Non Aqueous Suspensions for Electrophoretic Deposition Application I.A. Borojeni, B. Raissi, A. Maghsoudipour, M. Kazemzad and E. Marzbanrad	279
Surface Modification of SiC Powder for Use in Electrophoretic Deposition S. Sakakibara, T. Suzuki, A. Matsuda and T. Uchikoshi	287
Fabrication of Multi-Layered Thermoelectric Thick Films and their Thermoelectric Performance S. Horii, M. Sakurai, T. Uchikoshi, R. Funahashi, T. Suzuki, Y. Sakka, H. Ogino, J.I. Shimoyama and K. Kishio	291

VII. Novel Approaches

Electrophoretic Deposition of Liquid Templates B. Neirinck, J. Fransaer, O. Van der Biest and J. Vleugels	299
Local Electrophoretic Deposition with Coaxial Electrodes A. Nold, T. Assion, J. Zeiner and R. Clasen	307
Electrophoretic Deposition on Anodes from Aqueous Titania Suspensions with Titanate Solution O. Sakurada, M. Komaba, S. Obata, M. Hashiba and Y. Takahashi	313