Preliminary Program

Electrokinetic Processes in Chemical Engineering

February 28 - March 5, 2010

Niagara Falls, Canada

Conference Chairs

Dr. Laurence Weatherley

Professor Jerzy Petera

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Sunday February 28, 2010

05:00 – 07:00	Conference check-in
06:00 – 07:00	Welcome reception
07:00 – 09:00	Opening dinner

Monday, March 1, 2010

07:00 – 08:00	Breakfast
08:00 - 08:15	Welcoming Remarks and Opening of the Conference Dr. Laurence Weatherley and Professor Jerzy Petera
	Session I: Materials and Electrokinetic Processes
08:15:- 09:00	*Plenary* – Materials and Electrokinetic Processes Speaker: TBA
09:00 - 09:25	Properties of ultra-high molecular weight polyethylene/carbon nanotube fibers prepared at various formation temperatures Jen-Taut Yeh Graduate School of Polymer Engineering, National Taiwan University of Science and Technology, Taiwan
09:25 - 09:50	The manufacture and investigation of nano-polymeric composites for electromagnetic interference shielding by absorption electromagnetic wave Keng-Yu Tsao Department of Material Engineering, Tatung University, Taiwan
09:50 - 10:20	Coffee break
10:20- 10:45	Preparation and investigation of electroless plating silver on nylon 6 for EMI shielding Keng-Yu Tsao Department of Materials Engineering, Tatung University, Taiwan
10:45- 11:10	Hard-coating sysem for nanocomposite hybrids via UV-curing Kan-Nan Chen Tamkang University, Taiwan
11:10- 11:35	The Manufacture and investigation of nano-polymeric composites for electromagnetic interference shielding by absorption electromagnetic wave Yen-Hung Chen Department of Materials Engineering, Tatung University, Taiwan
11:35- 12:00	Controlling character of silica surface with silane coupling agent Jung Whan Yoo Korea Institute of Ceramic Engineering and Technology, Korea
12:00 – 14:00	Lunch

Monday, March 1, 2010 (continued)

14:00 - 16:00	*Ad hoc* sessions and/or free time
	Session I: Materials and Electrokinetic Processes (continued)
16:00 - 16:30	Photoluminescence enhancement of yellow phosphors by uniform TiO_2 coating Hyeong Seok Lee Korea Institute of Ceramic Engineering and Technology, Korea
16:30 - 16:55	Optical properties for protective film coated with TiO_2 Jung Whan Yoo Korea Institute of Ceramic Engineering and Technology, Korea
16:55 – 17:20	Electrodeposition behavior of trivalent chromium during pulse plating Yong Choi Sunmoon University, Korea
17:20 - 17:45	Preparation and characterization of nano-sized red and blue emitting Phosphors by hydrothermal synthetic method In-Churl Cho Zone Infinity Co. Ltd., Korea
17:45 – 19:30	Posters and discussion
19:30 - 21:30	Dinner

Tuesday, March 2, 2010

07:00 – 08:00	Breakfast
	Session II: Electrokinetic Processing and Separations
08:15: - 09:00	*Plenary* - Electrokinetic Processing and Separations Dr. Pedro Arce Tennessee Technical University, USA
09:00 - 09:25	Electrokinetic separation process in contaminated soil Md. Shahjahan Kaisar Alam Sarkar Discipline of Chemical Engineering, School of Engineering, Faculty of Engineering and Built Environment, The University of Newcastle, UK
09:25 - 09:50	Electrokinetic separation process in contaminated soil Majid Shojaee Islamic Azad University of Omidieh, Iran
09:50 - 10:20	Break
10:20 - 10:45	Treatment and characteristics of sludge conditioning for copper-chemical mechanical polishing wastewater using electrocoagulation method Kuen-Song Lin Department of Chemical Engineering & Materials Science/Fuel Cell Center, Yuan Ze University, Taiwan

Tuesday, March 2, 2010 (continued)

10:45 - 11:10	Reaction mechanism of nitrates and nitrites degradation in wastewater Using zero-valent iron nanoparticles Kuen-Song Lin Department of Chemical Engineering & Materials Science/Fuel Cell Center, Yuan Ze University, Taiwan
11:10 - 11:35	A preliminary study of biodiesel production in a novel intensive electrostatic reactor Laurence Weatherley The University of Kansas, USA
11:35 - 12:00	Oxidation of polyhydric alcohols by N-bromo succinimide using nano concentration of chloro-complex of IR(III) as a homogeneous catalyst in acidic medium – a kinetic study Sheila Srivastava Feroze Gandhi College, India
12:00 – 12:25	Fabrication of nano-sized red and blue emitting phosphor particles by Using hyudrothermal synthetic process Jong Jae Lee Sunmoon University, Taiwan
12:25 – 12:50	Production of nickel powder by electro-crystallization method W.M. Nahidh Chemical Engineering Department, University of Technology, Iraq
12:50 – 14:00	Lunch
14:00 – 16:00	*Ad hoc* sessions and/or free time
	Session II: Electrokinetic Processing and Separations (continued)
16:00 – 16:25	Kinetics of high temperature oxidation of high carbon steels in multi-component gases approximating industrial steel reheat furnace atmospheres Hussein Abuluwefa 7th of October University, Libya
16:25 - 16:50	Effect of retention time and voltage on the treatment of palm oil mill effluent via electrocoagulation Zahira Yaakob Universiti Kebangsaan, Malaysia
	Effect of atmospheric gases on phenol decomposition in aqueous solution with vapour-liquid discharge Hideo Nishiumi Chemical Engineering Deparment, Hosei University, Japan
	Experimental investigation of hydrate formation for a gas from an oil reservoir, located in the south of Iran, in presence of salts and electrolytes Vahid Abkhiz Petroleum University of Technology, Iran

Tuesday, March 2, 2010 (continued)

17:40 – 18:05	Electrochemical regeneration of carbon-based adsorbents Syed Nadir Hussain School of Chemical Engineering and Analytical Science, The University of Manchester, UK
18:15 – 19:30	Posters and discussion
19:30 – 20:00	Dinner

Wednesday, March 3, 2010

07:00 – 08:15	Breakfast
	Session III: Fundamentals and Modelling
08:15 - 09:00	*Plenary*: Fundamentals of electromechanics of particles and numerical modelling approach to convection-diffusion-reaction in liquid-liquid emulsion Professor Jerzy Petera The Technical University of Lodz, Poland
09:00 - 09:25	Analytical solution of the conjugated heat transfer Graetz problem for the combined electro0osmotically and pressure driven flow Oscar E. Bautista SEPI ESIME UA Instituto Politecnico Nacional, Mexico
09:25 - 09:50	Slip boundary conditions in nanofluidics from the molecular theory of salvation Alexander Kobryn National Institute for Nanotechnology, National Research Council of Canada, Canada
09:50 - 10:20	Coffee break
10:20 - 10:45	Experimental and simulated trajectories of electrically charged drops in non-Newtonian liquid-liquid systems Laurence Weatherley The University of Kansas, USA
10:45 - 11:10	Simulation of irradiative flow around a blunt body Morteza Rahmanpour Islamic Azad University, Khameneh Branch, Iran
11:10 - 11:35	Application of a CFD method of numerical modeling of gas radiation and Nonequilibrium air dissociation in hypersonic flow field Morteza Rahmanpour Islamic Azad University, Khameneh Branch, Iran
11:35 - 12:00	Quantitative evaluation of process parameter impacts on current efficiencies in a zero-gap modified chlor-alkali membrane cell using Taguchi technique Taher Mirzazadeh Sharif University of Technology, Iran

Wednesday, March 3, 2010 (continued)

12:00 - 12:25	Analytical solution of diffusion-reaction model in porous catalyst for evaluating effectiveness factors and concentration profile using homotopy perturbation method Foad Mehri Chemical Engineering Department, Babol University of Technology, Babol, Iran
12:25 – 14:00	Lunch
14:00 - 16:00	*Ad hoc* sessions and/or free time
	Session III: Fundamentals and Modelling (continued)
16:00 - 16:25	The critical role of the thermodynamics and Le Chatteliers principle on the diffusion, mass transfer and chemical reaction across gas solid interface Mahmoud Reda CanadElectrochim
16:25 - 16:50	Mass transport properties for removal of cadmium on stainless steel rotating disc electrode Adel O. Sharif (presented by Thanaa Al-Shalchi, Baghdad Univ., Iraq) Head of Center of Osmosis, Department of Chemical and Process Engineering, Faculty of Engineering and Physical Sciences, University of Surrey, UK
16:50 – 17:15	Mass transfer anslysis in an electro-osmotically driven catalytic microreactor Sirshendu De Indian Institute of Technology, Kharagpur, India
17:15 – 17:40	A CFD simulation of hydrogen production by auto-thermal reaction of methanol in a micro-channel reactor Foad Mehri Chemical Engineering Department, Babol University of Technology, Babol, Iran
17:45 - 19:30	Posters and Discussion
19:30 - 21:30	Dinner

Thursday, March 4, 2010

07:00 – 08:15	Breakfast
	Session IV: Emulsions and Emulsification
08:15:- 09:00	*Plenary*: Drop breakup and coalescence caused by electric fields Costas Tsouris Oak Ridge National Laboratory, USA

Thursday, March 4, 2010 (continued)

09:00 - 09:25	The factors influence on bitumen emulsion property Hamid Kazemi Esfeh Mahshahr Azad University, Iran
09:25 - 09:50	Precipitation reaction due to combination of two incompatible ionic solutions Hamzeh Ali Tahmasebi Islamic Azad University, Quchan Branch, Iran
09:50 - 10:20	Coffee break
10:20- 10:45	Studies on marine algae lectins from Taiwan Woan-Ru Liao Toko University, Taiwan
10:45- 11:10	Energy-saving paint using reflective pigments Hyeong Seok Lee Korea Institute of Ceramic Engineering and Technology, Korea
11:10- 11:35	Experimental investigation of hydrate formation for a gas from an oil reservoir, located in the south of Iran, in presence of salts and electrolytes Vahid Abkhiz Petroleum University of Technology, Iran
11:35- 12:00	Microstructure of process cheese Masoud Dezyani Islamic Azad University, Sofyan Branch, Iran
12:00 – 12:25	TBA
12:25 – 14:00	Lunch
2:00 - 5:00	*Ad hoc* sessions and/or free time
	Session IV: Emulsions and Emulsification (continued)
5:00 - 5:25	Rheological properties of reduced-fat model processed cheese spreads Roghayeh Ezzati Belvirdi Islamic Azad University, Sofyan Branch, Iran
5:25 - 5:50	Rheology and texture properties of cheese Habib Allah Mirzaei Gorgan University, Iran
5:50 - 7:30	Posters and Discussion
7:30 - 9:30	Dinner

Friday, March 5, 2010

07:00 – 08:15	Breakfast
	Session V: Fuel Cells
08:15 - 09:00	*Plenary*: Fuel Cells – Trung van Nguyen The University of Kansas
09:00 - 09:25	The effect of calcium oxide addition in chitosan-sago membrane composite for direct methanol fuel cell application Norfamila Che Mat Faculty of Engineering, University of Malaysia Sarawak, Malaysia
09:25 - 09:50	Feasibility study of chitosan-poly (vinyl alcohol) and calcium oxide composite membrane for direct methanol fuel cell applications Norfamila Che Mat Department of Chemical Engineering and Energy Sustainability, Faculty of Engineering, University of Malaysia Sarawak, Malaysia
09:50 - 10:20	Coffee break
10:20- 10:45	Effects of the catalyst layer structural parameters on cell performance of PEM fuel cells via numerical method Davood Ghadiri Moghaddam Amirkabir University of Tehran (Tehran Polytechnic), Iran
10:45- 11:10	H-infinity robust control of partial pressure in proton exchange membrane fuel cells using dynamic extension method Hamed Dashtaki Amirkabir University of Tehran (Tehran Polytechnic), Iran
11:10 - 11:35	Synthesis of one dimensional titania for solar energy applications Mohammad M. Hossain King Fahd University of Petroleum & Minerals, Dhahran
11:35 - 12:00	Preparation and characterization of CuO/ZnO-Al_2O_3 catalyst washcoat with CeO_2 SOL for autothermal reforming of methanol in a microreactor Kuen-Song Lin Department of Chemical Engineering & Materials Science/Fuel Cell Center, Yuan Ze University, Taiwan
12:00 - 12:25	Assessment and improvement of coated bipolar plates by two methods of coating Mehdi Sharifian Chemical Engineering Faculty of Iran University of Science and Technology, Iran
12:25 - 12:50	Evaluating the zeta potentials of uniform/non-uniform charged surfaces in a microchannel by the current monitoring method Szu-Wei Tang National Cheng Kung University, Taiwan

Friday, March 5, 2010 (continued)

12:50 - 13:15	Characterization of microbial and enzymatic fuel cells Costas Tsouris Oak Ridge National Laboratory, USA
13:15 – 14:15	Close of conference, lunch and departure