

**THE 8TH INTERNATIONAL SYMPOSIUM ON NEW MATERIALS
AND NANO-MATERIALS FOR ELECTROCHEMICAL SYSTEMS**

SCIENTIFIC PROGRAM

July 11 – 15, 2010, Jianguo Hotel Shanghai, China

Sunday, July 11, 2010

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| 9:30-20:00 | Registration, F4 Grand Ball Room B (No other activities will occur during this day) |
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Monday, July 12, 2010

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| 7:30-18:00 | Registration, F4 Grand Ball Room B |
| 8:30-9:00 | Welcome Remarks and Opening of the Symposium: Grand Ball Room A Chair: Zi-Feng Ma (Shanghai Jiao Tong University) |
| 9:00-12:10 | Plenary Symposium Talk: Grand Ball Room A Chair: O Savadogo, Ken-Ichiro Ota |
| 9:00-9:45 | [1] Prof. David P. Wilkinson (University of British Columbia, Vancouver, Canada) Clean energy and new materials / approaches for electrochemical systems |
| 9:45-10:30 | [2] Prof. Ken-Ichiro Ota (Yokohama National University, Japan) Development of non precious metal oxide cathode for PEMFC |
| 10:30-10:40 | Coffee Break |
| 10:40-11:25 | [3] Dr. Raghu N. Bhattacharya (US DOE's National Renewable Energy Laboratory, USA) Thin Film Photovoltaic Technology |
| 11:25-12:10 | [4] Dr.Chendong Huang (New Energy Vehicle Division, SAIC Motor Corporation Limited, China) Demonstration of Fuel Cell Vehicle in 2010 Shanghai World EXPO |
| 12:10-14:00 | Lunch Time |

Session 1: General Session

Room: Plum Blossom

Chair: O.Savadogo, Huamin Zhang

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| 14:00-14:30 | [8] Prof Huamin Zhang (Dalian Institute of Chemical Physics, Chinese Academy of Sciences, Dalian 116023, China) Material Challenges to Redox Flow Battery for Energy Storage (Invited Speaker) |
| 14:30-14:50 | [9] A Sensor of Iron Based on A Porphyrin Functionalized Porous Silica, Roberto H. Labrador, Chunfang Zhou, Alfonso Garcia-Bennett (Nanologica AB. Drottning Kristinas Vag 45. Stockholm, Sweden) |
| 14:50-15:10 | [10] Corrosion behavior of construction materials for high temperature water electrolyzers, A. Nikiforov, I. Petruchina, E. Christensen, Niels J. Bjerrum, Antonio L. Tom'as-Garc'ia (Department of Chemistry, Technical University of Denmark, DK-2800 Lyngby, Denmark) |
| 15:10-15:30 | [11] Design of Crossed Cathode in TCO Material Electrochemical Removal from Computer Display Device, P.S. Pa (Department of Digital Content Design, National Taipei University of Education, Taipei China) |
| 15:30-15:40 | Coffee Break |
| 15:40-16:00 | [12] Electrochemical properties of Cu ₂ O/Cu composite particles prepared by a novel and facile method, Meng Yang, Xiangyu Zhao, Liqun Ma, Yan Yao, Yi Ding, Xiaodong Shen (Nanjing University of Technology, Nanjing, China) |
| 16:00-16:20 | [13] Enhancement of Photogenerated-Electron Transport in Dye-Sensitized Solar Cells by Introducing Reduced Graphene Oxide-TiO ₂ Junction, Jun-Ling Song, Zong-You Yin, Xue-Wei Liu (Nanyang Technological University, Singapore) |
| 16:20-16:40 | [14] Synthesis and Characterization of TiO ₂ Doped Sodium Beta"-Alumina, Xiao-Ling Wei, Hui Yang, Xiao-Dong Shen (Nanjing University of Technology, Nanjing, China) |
| 16:40-17:00 | [15] TiO ₂ as Gate Oxide on Enhancement-Mode N-channel Sulfur-Treated InP MOSFET, Ming-Kwei Lee and Chih-Feng Yen (National Sun Yat-sen University, China Taipei) |

Session 2: Low Temperature Fuel cell

Room: Grand Ball Room C

Chair: Jim Zheng, Yushan Yan

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| 14:00-14:30 | [16] Prof. Yushan Yan (Department of Chemical & Environmental Engineering, University of California, Riverside, USA) Polymer Hydroxide Exchange Membranes for Inexpensive Fuel Cells, Wind/Solar Electricity Storage, and Solar Fuel Generation (Invited Speaker) |
| 14:30-14:50 | [27] A Precious-Metal-Free Micro Fuel Cell Accumulator, C. Bretthauer, C. Müller, H. Reinecke (University of Freiburg-IMTEK, Germany) |
| 14:50-15:10 | [28] Low-cost Polyvinyl Alcohol Hydrogel Membrane Electrolyte for PEM fuel Cells, Yogeshwar Sahai (Department of Materials Science and Engineering, the Ohio State University, USA) |

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| 15:10-15:30 | [29] Platinum Nanoparticles Decorated on Carbon-Ceramic Substrate: Application in Electrocatalysis, Biuck Habibi, Nasrin Delnavaz (Department of Chemistry, Azarbaijan University of Tarbiat Moallem, Iran) |
| 15:30-15:40 | Coffee Break |
| 15:40-16:10 | [17] Prof. Jim Zheng (Florida State University, Tallahassee, FL 32310,USA) High Performance PEMFCs using Ultra-Low Platinum Loading Membrane Electrode Assembly Based on Gradient Carbon Nanotube/Nanofiber Supported Electrodes(Invited Speaker) |
| 16:10-16:30 | [30] Optimisation of Three-Phase-Boundary in Alkaline Direct Methanol Fuel Cells, Ulrike Krewera, Prashant Subhas Khadke, Christine Weinzierl (Max Planck Institute for Dynamics of Complex Technical Systems, Germany) |
| 16:30-16:50 | [31] Multiscale Dynamic Analysis on the Structure of a Porous Silicon-based Membrane for Micro-fuel Cells, Jianjun Ye, Jian Yang, Jeong Wong, Xianting Ding, Jinyang Zheng, Weizhong Li, Cong Chen (Zhejiang University, China; University of California, Los Angeles, U.S.A) |
| 16:50-17:10 | [32] Electro-oxidation of hydrogen on Ni-organic metal complex catalysts in acidic media, Rui Lin, Jinli Qiao, Hai Yan Zhang, Jianxin Ma (Donghua University, Shanghai 201620, China) |

Session 4: Advanced Secondary Rechargeable Batteries

Room: Peony

Chair: Hai-Jiang Wang, Sanjeev Mukerjee

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| 14:00-14:30 | [66] Prof. Sanjeev Mukerjee (Northeastern University, Boston, MA 02115-5000, USA) Novel Smart Catalysts for the Next Generation of PEM Fuel Cells and Li-Air Batteries (Invited Speaker) |
| 14:30-14:50 | [71] Mesoporous Magnesium Manganese Silicate from MCM-41 silicon as Cathode Material for Rechargeable Magnesium Batteries, Yanna NuLi, Yun Yang, Yupei Zheng and Jiulin Wang (Department of Chemical Engineering, Shanghai Jiao Tong University, Shanghai 200240, China) |
| 14:50-15:10 | [72] Novel binder and sulfur containing composite cathode materials for rechargeable lithium batteries, Li-Chao Yin, Jun Yang, Ying-Lei Wu (Shanghai Jiao Tong University, China) |
| 15:10-15:30 | [73] Structural characterization of a high-performance Co-polymer lithium storage material by EXAFS and DFT calculations, Qingyu Kong, Bingkun Guo, Francois Baudelet (Société civile Synchrotron SOLEIL, L'Orme des Merisiers, Saint-Aubin-BP 48, 91192 GIF-sur-YVETTE CEDEX, France) |
| 15:30-15:40 | Coffee Break |
| 15:40-16:10 | [67] Dr.Hai-Jiang Wang (NRC-Institute for Fuel Cell Innovation, Vancouver, Canada) Materials design and evaluation for metal-air battery (Invited Speaker) |
| 16:10-16:30 | [74] Precipitation of Ca(OH) ₂ on the surface of [Ni ₄ Al(OH) ₁₀]OH layered double hydroxide and its effects on the high temperature performances, Meng Hu, Wen Zhao, Peng-Ran Gao, Li-Xu Lei, Yue-Ming Sun (School of Chemistry and Chemical Engineering, Southeast University Nanjing 211189, China) |

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| 16:30-16:50 | [75] Electrochemical properties of high quality graphene sheets with different number of layers as an anode material for lithium-ion batteries, Xin Tong, Gang Wang, Weilong Li, Xiaoqing Su, Hui Wang (Department of Chemistry, Northwest University, Xi'an 710069, China) |
| 16:50-17:10 | [76] Large-scale fabrication of wavelike single-crystal nanosheets for high-power lithium ion Batteries, Jiehua Liu, Xuwei Liu (Division of Chemistry and Biological Chemistry Sciences, Nanyang Technological University, Singapore 637371, Singapore) |

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| 17:10-18:30 | Poster Session (Part A 108-134) & Exhibition Room: Grand Ball Room B |
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Poster Session (Part A)

[108] Investigation of ruthenium oxide and NANO carbon composite materials as flexible electrodes for supercapacitor applications, Ching-Tang Chang, Mu-Teng Wu, Chia-Liang Sun (Chang Gung University, China Taipei)

[109] Electrochemical durability of heat-treated carbon black as catalyst supports for PEM fuel cell, Wei wan, Haifeng Lv, Shichun Mu and Mu Pan, (State key Laboratory of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology, Wuhan 430070, China)

[110] Evaluation of Pd-Ag Alloys as Electrocatalysts For Oxygen Reduction Reaction, M. C. Oliveira and R. Rego (Departamento de Química, Universidade de Trás-os-Montes e Alto Douro Apartado 1013, 5001-801 Vila Real, Portugal)

[111] Novel non-covalent sulfonated multiwalled carbon nanotube from p-toluenesulfonic acid/glucose doped polypyrrole for electrochemical capacitors, Qing-Bin Fu , Bo Gao, Liang Hao (Nanjing University of Aeronautics and Astronautics, Nanjing 210016, China)

[112] Elaboration and characterization of an activated carbon from esparto grass for the electrode material, A. Lounis, K. Taibi, M. Azzaz and K. Lenouar (Laboratory of Sciences and Material Engineering, University USTHB, Algeria)

[113] Structure sensitivity of water molecule dissociation and CO removal along with methanol oxidation on electrode Pt, L. Li, Z. D. Wei, X. Q. Qi, Y. Q. Wang, X. L. Ma, P. K. Shen, and M. R. Xia (School of Chemistry and Chemical Engineering, Chongqing University, Chongqing 400044, China)

[114] Effect of resistance to sintering on Pt/PPY-MWCNT catalysts for PEM fuel cells, Kwanghyun Kim, Hansung Kim (Yonsei University, Korea)

[115] Effect of metal precursors on the structures and activities of non-precious metal M-TETA/C(M=Co, Fe) catalysts for the oxygen reduction reaction, Hui-Juan Zhang, Xianxia Yuan, Qi-zhong Jiang, Zi-Feng Ma (Shanghai Jiao Tong University, China)

[116] Novel nanoporous alloy electrocatalysts for oxygen reduction reaction, Cai-Xia Xu, Yi Ding (University of Jinan, China)

[117] Improvement of carbon corrosion resistance through heat-treatment in polymer electrolyte membrane fuel cells, Young-Jin Ko, Hyung-Suk Oh, and Hansung Kim (Yonsei University, Korea)

[118] Direct Glycerol PEM fuel cell: Effect of the fuel grade of the cell performances, H.Tian and O.Savadogo (Laboratoire de nouveaux matériaux pour les systèmes électrochimiques, École Polytechnique de Montréal, Montréal, Québec, Canada H3C 3A7)

[119] Investigation of the adsorption of size-selected Pt colloidal nanoparticles on carbon supports for methanol oxidation reaction, Shin-Shien Lee, Meng-Chi Lin, Chia-Liang Sun (Chang Gung University, Kwei-Shan, Tao-Yuan, China Taipei)

- [120] Nafion-phthalocyanine composite membrane for direct methanol fuel cell, Feng Xu, Qin Yuan, Shichun Mu, Mu Pan (Wuhan University of Technology, China)
- [121] Highly dispersed platinum nanoparticles on carbon/CNT for Proton Exchange Membrane Fuel Cell catalyst, Huaiguang Li, Daping He, Shichun Mu, Mu Pan (Wuhan University of Technology, China)
- [122] New Membranes for PEM Fuel Cells-Polybenzimidazol with Grafted Polyvinylphosphonic Acid Chains, St. Shenkov, D. Budurova, V. Sinigersky, V. Bandur, Q. Li, N.J.Bjerrum (Institute of Polymers, Bulgarian Academy of Sciences, 1113 Sofia, Bulgaria; Department of Chemistry, Technical University of Denmark, 2800-Lyngby, Denmark)
- [123] Graphene nanosheets/multiwalled carbon nanotube hybrid nanomaterials supported Pd catalysts for formic acid oxidation, Su-Dong Yang, Yan-Yu Liang, Zhu-Liang Wen, Hao Tong, Qi-Jun Song, Xiao-Gang Zhang (Nanjing University of Aeronautics and Astronautics, China)
- [124] Synthesis and oxygen evolution electrocatalytic property of Iridium dendrite structures, Sang-Eun Jang, Woong Hee Lee, Young-Jin Ko, Hansung Kim (Yonsei University, Korea)
- [125] Study of Pt-alloys as organic molecules-tolerant cathodes, F.J. Rodríguez Varela, D.K. López de la Fuente, D. Morales-Acosta, L.G. Arriaga (Nanosciences and Nanotechnology Program, Mexico)
- [126] Challenges for new electro catalysts development for the ORR in acid medium for PEM fuel cell applications, O. Savadogo (Laboratory of New Materials for Electrochemistry and Energy, Canada)
- [127] Preparation and characters of anode Ni-YSZ nanotubes of SOFC, Xiuxia Meng, Naitao Yang, Xiaoyao Tan (Shandong University of Technology, China)
- [128] Preparation and properties of $\text{SrCo}_{0.9}\text{Nb}_{0.1}\text{O}_{3-\delta}$ hollow fibre membranes, Bo Meng, Xiaoyao Tan, Zhigang Wang, Yuying Liu, Xiuxia Meng (Shandong University of Technology, China)
- [129] High performance Pd-alone based cathodes for direct ethylene glycol fuel cells, F.J. Rodríguez Varela, O. Savadogo (Nanosciences and Nanotechnology Program, Mexico)
- [130] Effects of Electrode Materials on Electricity of Microbial Fuel Cell, Zhang Yong-juan, Li Yong-feng (School of Forestry, Northeast Forestry University, China)
- [131] The influence of the electrode anode sizes of the Microbial Fuel Cell (MFC) on the electrical property and COD removal with the electroplating wastewater to be the cathode, Wang Yan, Guo Dong-pu, Li Yang-yang, Wang Zhi-chao, Li Yong-feng (Northeast Forestry University, China)
- [132] Microwave-hydrothermal synthesis of LiFePO_4 as cathode for Li-ion batteries, Juan Hou, Xia Huang, Ai-Min Chang (Xinjiang Technical Institute of Physics and Chemistry, CAS, Urumuqi 830011, China)
- [133] New electrolytes additives and their acting mechanism in Li-ion batteries, X. H. Su, W. H. Yao, J. Li, Z. R. Zhang, J. Gao, Y. Yang (Xiamen University, China)
- [134] A new charging mode of Li-ion batteries with LiFePO_4/C composites under low temperature, Xiao-Wei Zhao, Guo-Yu Zhang, Lin Yang (Shanghai Jiao Tong University, China)
- [135] A $\text{Co}(\text{OH})_2$ -graphene nanosheets composite as a high performance anode material for rechargeable lithium batteries, Yu-Shi He, Xiaowei Yang, Jun Chen, Xiao-Zhen Liao, Zi-Feng Ma (Shanghai Jiao Tong University, China)

Tuesday, July 13, 2010

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| 7:30-12:00 | Registration |
| 8:00-10:15 | Plenary Symposium Talk: Grand Ball Room A Chair: Raghu N. Bhattacharya |
| 8:00-8:45 | [5] Prof. Krishna C. Mandal (University of South Carolina, USA) Dye Sensitized Nanocrystalline TiO ₂ -Polymer Solar Cells on Plastics |
| 8:45-9:30 | [6] Prof. Jean-Marie Tarascon (LRCS, Universite de Picardie Jules Verne, France) Novel inorganic and organic electrode materials for sustainable and "greener" Li-ion batteries |
| 9:30-10:15 | [7] Prof. Claude Lamy (Faculty of Science, University of Poitiers, France) Development of Nanocatalysts for Low Temperature Fuel Cells (PEMFC, DEFC, SAMFC) |
| 10:15-10:30 | Coffee Break |

Session 2 Low Temperature Fuel cell

Room: Grand Ball Room C

Chair: Jens Oluf Jensen, Jinli Qiao

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| 10:30-11:00 | [18] Prof. Christophe Coutanceau (Faculty of Science, University of Poitiers, France) Solid Alkaline Membrane Fuel Cell: what are they advantages and drawbacks compared to Proton Exchange Membrane Fuel Cells (Invited Speaker) |
| 11:00-11:30 | [19] Prof Yi Ding (School of Chemistry and Chemical Engineering, Shandong University, Jinan 250100, China) Development of Nanoporous Metal Electrocatalysts (Invited Speaker) |
| 11:30-11:50 | [33] Degradation location study of proton exchange membrane at open circuit operation, Shaohua Xiao, Huamin Zhang, Cheng Bi, Yining Zhang (Dalian Institute of Chemical Physics, Chinese Academy of Sciences, Dalian 116023, China) |
| 11:50-12:10 | [34] Fabrication 3 dimensional Pt catalysts via Na ₂ Ti ₃ O ₇ nanowires for methanol and ethanol electrooxidation, Xiaoshan He, Chenguo Hu (Chongqing University, China) |
| 12:10-14:00 | Lunch Time |

Chair: Christophe Coutanceau, Yi Ding

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| 14:00-14:30 | [21] Prof. Dr Jens Oluf Jensen (Technical University of Denmark, Denmark) Recent advances with high temperature PEMFC in Denmark (Invited Speaker) |
| 14:30-14:50 | [35] Phosphoric acid added diethylmethylammonium trifluoromethanesulfonate as non-humidified |

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| | mesothermal fuel cell electrolyte, S Mitsushima, D Inoue, S-Y Lee, T Yasuda, K Matsuzawa, M Watanabe, K-I Ota (Yokohama National University, Japan) |
| 14:50-15:10 | [36] Preparation and Properties of Cross-linked Sulfonated Poly(arylene ether sulfone) / Sulfonated Polyimide Blend Membranes for Fuel Cell Applications, Zhao-Xia Hu, Hui-Ping Bi, Xuan Zhang, Jia-Li Wang, Shou-Wen Chen (Nanjing University of Science and Technology, China) |
| 15:10-15:30 | [37] The Membrane based on polytetrafluoroethylene for Intermediate Temperature Fuel Cells, Mingqiang LI (Dalian University of Technology, CAS, China) |
| 15:30-15:50 | [38] Enhanced properties and durability of commercial Nafion® 212 membranes using supercritical carbon dioxide treatment, Lei Li, Lijun Su, Yong-Ming Zhang (Shanghai Jiao Tong University, China) |

Session 4: Advanced Secondary Rechargeable Batteries

Room: Peony

Chair: Xuejie Huang, Yong Yang

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| 10:30-11:00 | [68] Dr. Haoshen Zhou (Energy Technology Research Institute, National Institute of Advanced Industrial Science and Technology, Japan) Clean Energy Device Based on Nanostructure Materials and New Concepts (Invited Speaker) |
| 11:00-11:20 | [77] Preparation and Characterization of LiFePO ₄ /C Material from Different Precursors, Jian Gao, Jian-Jun Li, Chang-Yin Jiang, Chun-Rong Wan (Tsinghua University, Beijing 100084, China) |
| 11:20-11:40 | [78] BiFeO ₃ as Electrode Material for Energy Storage, Luo Shihai, Gao Mei, Chen Jun, Xing Xianran, Zhou Xingtai, Wen Wen (Shanghai Synchrotron Radiation Facility, Shanghai Institute of Applied Physics, CAS, China) |
| 11:40-12:00 | [79] Electrochemical performance of Li/Li[Li _{0.2} Mn _{0.54} Ni _{0.13} Co _{0.13}]O ₂ cells using ionic liquid electrolyte with organic solvent, J. M. Zheng, D. R. Zhu, Y. S. Fung and Y. Yang (The University of Hong Kong, China) |
| 12:00-14:00 | Lunch Time |

Chair: Haoshen Zhou, Yuping Wu

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| 14:00-14:30 | [69] Prof Xuejie Huang (The Institute of Physics, Chinese Academy of Sciences, Beijing 100190, China) New Materials Design for rechargeable lithium battery Application (Invited Speaker) |
| 14:30-15:00 | [70] Prof. Yuping Wu (Department of Chemistry, Fudan University, China) New Aqueous Rechargeable Power Sources Based on Intercalation Compounds (Invited Speaker) |
| 15:00-15:20 | [80] TiO ₂ (B) as an Anode Material for Lithium Ion Battery, Liang Zhao, Liumin Suo, Sébastien Sallard, Bernd Smarsly, Yong-Sheng Hu, Liquan Chen (Institute of Physics, Chinese Academy of Sciences, China; Institute of Physical Chemistry, Justus-Liebig-University Giessen, Germany) |

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| 15:20-15:40 | [81] Mesoporous Nano-Co ₃ O ₄ : A Potential Negative Electrode Material for Alkaline Secondary Battery, Li Li, Yi-Jing Wang, Ya-Ping Wang, Guang Liu, Qiu-Li Ren, Li-Fang Jiao, Hua-Tang Yuan (Institute of New Energy Material Chemistry, Nankai University, Tianjin 300071, China) |
| 15:40-16:00 | [82] Metal Oxide Based Nanostructured Anode Materials for Lithium-ion Batteries, Xiong Wen (David) LOU (Nanyang Technological University, Singapore 637457, Singapore) |
| 16:00-16:20 | [83] Preparation of FePO ₄ Nanoparticles in Rotating Packed Bed Reactor, Yuling Wu, Weihua Pu, Jianguo Ren, Chunrong Wan, Changyin Jiang (Tsinghua University, Beijing 100084, China) |

Session 5: Hydrogen Production and Storage

Room: Plum Blossom

Chair: Mei Cai, Lixin Chen

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| 10:30-11:00 | [84] Prof. Hyuksang Kwon (Department of Materials Science and Engineering, KAIST, Korea) Synthesis of Micro-Porous Co-P Catalyst and Its Application to Hydrogen Generation from Hydrolysis and Methanolysis of NaBH ₄ (Invited Speaker) |
| 11:00-11:20 | [86] The Operation Characteristics of Biohydrogen Production in Continuous Stirred Tank Reactor with Molasses, Chen Hong, Han Wei, Li Yong-Feng, Deng Jie-Xuan, Yao Xin, Yang Chuan-Ping (Shanghai University Engineering and Science, China) |
| 11:20-11:40 | [87] Studies on bio-hydrogen production of different biomass fermentation types using molasses wastewater as substrate, Kun Liu, Yong-Feng Li, Wen Li, An-Ying Jiao, Pin-Hua Rao (Northeast Forestry University, China) |
| 11:40-12:00 | [88] Effect of Different Modification Agents on Hydrogen-Generation by the Reaction of Al With Water, Zhen-Yan Deng (Shanghai University, China) |
| 12:00-14:00 | Lunch Time |

Chair: Hyuksang Kwon, Dalin Sun

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| 14:00-14:30 | [85] Dr. Mei Cai (General Motor, USA) Materials Challenges in Developing Hydrogen Storage Systems (Invited Speaker) |
| 14:30-14:50 | [89] Structural Investigation on Ti-Al-Ta Nanomaterials, Kamel TAIBI, Sofiane TAANE, Azzedine LOUNIS, (Laboratoire des Sciences et Génie des Matériaux, USTHB, Algeria) |
| 14:50-15:10 | [90] Synthesis and hydriding/dehydriding properties of nanosized sodium alanates, Xuezhong Xiao, Kairong Yu, Xiulin Fan, Changpin Chen, Lixin Chen (Zhejiang University, Hangzhou 310027, China) |
| 15:10-15:30 | [91] Force Field Development and Applications for Hydrogen Storage Materials, Ying-Xin, Sun, Feng Li, Jia Fu, Lin Wang, Yan-Lin, Miao, Huai Sun (Shanghai Jiao Tong University, China) |

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| 15:30-15:50 | [92] Improved Dehydrogenation of TiF ₃ -doped NaAlH ₄ Using Mesoporous SiO ₂ as a Co-dopant, Yongtao Li, Shiyong Zheng, Fang Fang, Yun Song, Dalin Sun (Fudan University, China) |
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| 16:00-17:30 | Poster Session (Part B 135-160) & Exhibition Room: Grand Ball Room B |
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Poster Session (Part B)

[136] Investigation of SnO₂-modified LiMn₂O₄ composite as cathode material for lithium-ion batteries, Jishi Zhao, Li Wang, Shaohua Guo, Xiangming He, Changyin Jiang, Chunrong Wan (Tsinghua University, China)

[137] Synthesis and characterization of LiFePO₄/C composites using anthracene as a carbon source, G.T.K. Fey, K. P. Huang, C. J. Yan, G.W. Wang, H.M. Kao (National Central University, China Taipei)

[138] Chelation assisted method for the preparation of cathode material LiFePO₄, Chengfeng Li, Ning Hua, Chengyun Wang, Xueya Kang, Tuerdi, Ying Han (Xinjiang Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, China)

[139] Effect of Mn²⁺-substitution in LiFePO₄ and their low temperature performances, Chengfeng Li, Ning Hua, Chengyun Wang, Xueya Kang, Tuerdi, Ying Han (Xinjiang Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, China)

[140] Effect of slurry preparation and dispersion on high C-rate electrochemical performances of LiFePO₄ composite electrode, Wenjia Zhang, Xiangming He, Weihua Pu, Jianjun Li, Chunrong Wan (Tsinghua University, China)

[141] Lithium storage in TMO-Li₂CO₃ nanocomposite thin film, Rui Wang, Xiqian Yu, Hong Li, Xuejie Huang, Liquan Chen (Institute of Physics, Chinese Academy of Sciences, China)

[142] Preparation and electrochemical characterization of PPy- LiFePO₄/C composites via vapor-phase polymerization, Qiang Gong, Xiao-Zhen Liao, Yu-shi He, Yang Yang, Zi-Feng Ma (Shanghai Jiao Tong University, China)

[143] Synthesis of nano-LiMnPO₄/C cathode materials for lithium ion batteries using nano-MnPO₄ as precursor, Li Wang, Wen-Ting Sun, Xiang-Ming He, Jian-Guo Ren, Wei-Hua Pu (Tsinghua University, China)

[144] Synthesis of nano-Li₂CO₃ for nano-LiFePO₄ cathode material, Yuling Wu, Weihua Pu, Jianguo Ren, Chunrong Wan, Changyin Jiang (Tsinghua University, China)

[145] Characterization of H₂ generation via NH₃BH₃ hydrolysis by a Co-P/Ni foam catalyst and its durability, KwangSup Eom, MinJoong Kim, and Hyuk-Sang Kwon (Department of Materials Science and Engineering, KAIST, Korea)

[146] Characteristics of biohydrogen production by *Ethanoligenens* R₃ isolated from continuous stirred tank reactor, An-Ying Jiao, Yong-Feng Li, Bing Liu, Kun Liu, Jing-Li Xu (Northeast Forestry University, China)

[147] Hydrogen production via steam rerorming of methanol over Cu/(Ce,Gd)O_{2-x} catalyst, Ta-Jen Huang, Hsiao-Min Chen (National Tsing Hua University, China Taipei)

[148] Ordered mesoporous carbon/FeO(OH) composites for supercapacitors with high capacitive performance, Chenmin Liao, Jiachang Zhao, Bohejin Tang, Jingli Xu (Shanghai University of Engineering Science, China)

[149] Hydrogen production from molasses by anaerobic fermentation in an activated sludge immobilized bioreactor, HAN Wei, YAO Xin, CHEN Hong, YUE Li-ran, LI Yong-feng (Northeast Forestry University, China)

- [150] Prediction of hydrogen storage of NOTT-116, Yan-Lin Miao, Ying-Xin Sun, Feng Li, Lin Wang, Huai Sun (Shanghai Jiao Tong University, China)
- [151] Factors influencing hydrogen uptakes in MOF/COF materials, Lin Wang, Jia Fu, Ying-Xin, Sun, Yan-Lin, Miao, Huai Sun (Shanghai Jiao Tong University, China)
- [152] Electrochemically activated screen-printed carbon electrodes for simultaneous isomer determination, Wan-Yu Su, Sheng-Ming Wang, Shu-Hua Cheng (National Chi Nan University, China Taipei)
- [153] High-temperature electrochemical synthesis as a method of molybdenum and tungsten carbides nanopowders obtaining, Victor Malyshev, Angelina Gab, Dmitrii Shakhnin, Bing Li (Institute of General and Inorganic Chemistry of NAS of Ukraine, Ukraine)
- [154] High-temperature electrochemical synthesis as a method of VI-B group metals silicides and borides nanopowders obtaining, Victor Malyshev, Angelina Gab, Bing Li (Institute of General and Inorganic Chemistry of NAS of Ukraine, Ukraine)
- [155] Textural and chemical properties of activated carbons prepared from diss grass for the electrochemical use, A. Lounis, K. Lenouar, K. Taibi, M. Kadouma (Laboratory of Sciences and Material Engineering, University USTHB, Algeria)
- [156] Bacterial inhibition of silver-containing stainless steels, Wen-Chi Chiang, Sin-Ming Chang, Jung-Der Lin, I-Sheng Tseng, Jiann-Kuo Wu (Technical University of Denmark, 2800 Kgs. Lyngby, Denmark)
- [157] The effect of Silicotunstic acid (STA) doping of TiO₂ nanoparticles on the performance of TiO₂-based Dye Sensitized Solar Cells, M. Li and O.Savadojo (École Polytechnique de Montréal, Canada)
- [158] Preparation and Properties of Cross-linked Multiblock Sulfonated Poly(arylene ether sulfone) Membranes for Fuel Cell Applications, Xuan Zhang, Zhao-Xia Hu, Sha Zhang, Shou-Wen Chen (Nanjing University of Science and Technology, China)
- [159] Facile Synthesis of Hierarchically Porous Li₄Ti₅O₁₂ Microspheres for High Rate Lithium Ion Batteries, Lai-Fa Shen, Hong-Jun Luo, Chang-Zhou Yuan, Xiao-Fei Su, Ke Xu, Xiao-Gang Zhang (Nanjing University of Aeronautics & Astronautics, China)
- [160] New Doped Tin Dioxide Electrodes for Electrochemical Ozone Generation, Yun-Hai Wang, Guo Li, Yong-Rong Liang, Zi-Zhou Nie, Qing-Yun Chen (Department of Environmental Engineering, Xi'an Jiaotong University, China)
- [161] Sr(Co_{0.6}Fe_{0.2}Nb_{0.2})O_{3-δ} as a candidate material for the positive current collector in sodium sulfur battery, Ying Huang, Zhaoyin Wen, Jianhua Yang, Yu Liu, Xiangwei Wu (Shanghai Institute of Ceramics, Chinese Academy of Sciences, China)
- [162] The property of the molten NaAlCl₄ applied in Na/NiCl₂ cells, Xiao Liang, Zhao-Yin Wen, Yu Liu (Shanghai Institute of Ceramics, Chinese Academy of Sciences, China)
- [163] Structure and crystallization of the borosilicate glasses, Shu-Feng Song, Zhao-Yin Wen, Ying Huang, Xiao Liang, Jingchao Zhang (Shanghai Institute of Ceramics, Chinese Academy of Sciences, China)
- [164] Electrochemical Determination of Methimazole by Cu(OH)₂ Nanowire Carbon Paste Modified Electrode, Mohammad Hossein mashhadizadeh, Khadijeh Eskandari (Tarbiat Moallem University, Iran)
- [165] Preparation and performance of ZnO/ Polyaniline nano-composite for supercapacitor, Yu Shu-Ping, Chang Xiao-Cong, Wang Z hong-Ming, Han Ke-Fei , Zhu Hong (Beijing University of Chemical Technology, China)
- [166] Preparation and Performance of Novel Polybenzimidazole Proton Exchange Membranes for Direct Methanol Fuel Cells, Han Ke-Fei, Liang Jia-Peng, Wang Zhong-Ming, Yu Shu-Ping, Zhu Hong (Beijing University of Chemical Technology, China)

18:30-20:30

Conference Banquet

Wednesday, July 14, 2010

Session 2: Low Temperature Fuel Cell

Room: Grand Ball Room C

Chair: Chun-Xin Ji, Shi Zhang Qiao

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| 8:00-8:30 | [22] Prof. Hansung Kim (Department of Chemical and Biomolecular Engineering, Yonsei University, Seoul, Republic of Korea) Effect of CNFs surface modification using noncovalent functionalization on electrochemical carbon corrosion in polymer electrolyte membrane fuel cells (Invited Speakers) |
| 8:30-9:00 | [23] Prof. Xueliang (Andy) Sun (The University of Western Ontario, London, Ontario, Canada) One-dimensional Nanomaterials for PEM Fuel Cells: Synthesis, Characterization and Applications (Invited Speakers) |
| 9:00-9:20 | [39] Lifetime test of Pt-Pd/C PEMFC cathode catalyst, Zhi-Min Zhou, Xiao-Ping Qin, Xu-Guang Chen, Zhi-Gang Shao, Bao-Lian Yi (Dalian Institute of Chemical Physics, Chinese Academy of Sciences, Dalian, China) |
| 9:20-9:40 | [40] A Storage Module Evaluation for the Hydrogen Fuel Cell on Toy Design, P.S. Pa, S.H. Lin (Department of Digital Content Design, National Taipei University of Education, China Taipei) |
| 9:40-10:00 | [41] Study on MEA preparation with CoTETA/C catalysts as ORR catalyst, Tao Gan, Hui-Juan Zhang, Qi-Zhong Jiang, Zi-Feng Ma (Shanghai Jiao Tong University, China) |
| 10:00-10:20 | [42] Self-assembled PDDA / bacteriorhodopsin multilayer films for direct methanol fuel cells, Yan Xiang, Jin Zhang, Yang Liu, Shanfu Lu (School of Chemistry and Environment, Beihang University, Beijing 100191, China) |
| 10:20-10:30 | Coffee Break |
| 10:30-11:00 | [24] Dr. Chun-Xin Ji (General Motors R&D Center, USA) Electrode Materials, Electrode Preparation and Their Proton Conduction in PEM fuel cell (Invited Speaker) |
| 11:00-11:20 | [43] Polytetraphenylporphyrin Cobalt (II) Absorbed on Carbon Black as a Electrocatalyst for Oxygen Reduction at Alkaline Environment, Zhongfang Li, Yanfeng Ji, Suwen Wang, Huazhang Yu, Xianjin Yu (School of Chemical Engineering, Shandong University of Technology, Zibo, China) |
| 11:20-11:40 | [44] Accelerated Lifetime Testing for PEMFC Stack By Quickened Load Cycle, Daijun Yang, Tian Tang, Hao Zhang, Bin Li, Cun Hu, Jianxin Ma (Tongji University, Shanghai 201804, China) |
| 11:40-12:00 | [45] Progress in PFMFC Durability Study at DICP, Zhi-Gang Shao, Hong-Mei Yu, Ming Hou, Xiao-Jin Li, Li Zhou, Bao-Lian Yi (Dalian Institute of Chemical Physics, Chinese Academy of Sciences, Dalian 116023, China) |
| 12:00-14:00 | Lunch Time |

Chair: Xueliang (Andy) Sun, Hansung Kim

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| 14:00-14:30 | [25] Dr. Wang Xin (Nanyang University of Technologies, Singapore) Nanocomposite membrane with extremely low methanol crossover for direct methanol fuel cell (Invited Speaker) |
| 14:30-14:50 | [46] PEM fuel cell studies based on mixed methanol and ethanol liquid fuel, H.Tian and O.Savadogo (Laboratoire de nouveaux matériaux pour l'énergie et l'électrochimie, École Polytechnique de Montréal, Montréal, Québec, Canada H3C 3A7) |
| 14:50-15:10 | [47] Development of Pd-P Nano Electrocatalyst for Oxygen Reduction Reaction, Rosa Rego, Cristina Oliveira, Ana Maria Botelho do Rego (Departamento de Química, Centro de Química - Vila Real, Universidade de Trás-os-Montes e Alto Douro, Apartado 1013, 5001-801 Vila Real, Portugal) |
| 15:10-15:30 | Coffee Break |
| 15:30-16:00 | [26] Dr. Shi Zhang Qiao (ARC Centre of Excellence for Functional Nanomaterials, The University of Queensland, Brisbane, Australia) Functional Porous Silica Nanospheres As Intermediate Temperature Proton Conductors (Invited Speaker) |
| 16:00-16:20 | [48] H ₂ and C ₃ H ₈ fuel cells using novel phosphoric-acid-doped poly[2,2'-(<i>p</i> -Oxydphenylene)-5,5'-Bibenzimidazole] membranes, Liang Fang, Jianhua Fang, Zi-Feng Ma (Shanghai Jiao Tong University, China) |
| 16:20-16:40 | [49] The applications of 3D-hexagonal mesoporous SiO ₂ in proton exchange membranes of fuel cells, Bangyang Jiang, Haolin Tang, Mu Pan, Lin Chen, Cong Liang (Wuhan University of Technology, China) |
| 16:40-17:00 | [50] Novel anion-exchange membranes poly(vinyl alcohol) /Poly(acrylamide-co- diallyldimethylammonium chloride) (PVA/PAADDA) by blending and chemical cross-linking, Jing Fu, Jinli Qiao, Jianshe Liu, Jianxin Ma (East China University of Science and Technology, China; Donghua University, China) |

Session 3: High Temperature Fuel Cell

Room: Peony

Chair: Shaorong Wang, Ellen Y.Sun

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| 8:30-9:00 | [51] Dr Ellen Y. Sun (United Technologies Research Center, East Hartford, CT 06108,USA) Materials Challenges in Planar Solid Oxide Fuel Cell Stack (Invited Speakers) |
| 9:00-9:20 | [53] Synthesis and characterization of doped La ₉ ASi ₆ O _{26.5} (A=Ca, Sr, Ba) oxyapatite by a water-based gel-casting route, Lan Zhang, San Ping Jiang (Nanyang Technological University, Singapore 639798) |
| 9:20-9:40 | [54] Impact of Synthesis Technique on the Cathode Performance of PSCF, Ya-Qin Guo, Yi-Mei Yin, Ze Tong, Jie-Wei Yin, Zi-Feng Ma (Shanghai Jiao Tong University, Shanghai 200240, China) |
| 9:40-10:00 | [55] Vanadium-based anode catalysts for solid oxide fuel cells, Xian-Zhu Fu, Heng-Yong Tu, Jing-Li Luo, Karl T. Chuang, Alan R. Sanger, Quan-Min Yang (Department of Chemical and Materials Engineering, University of Alberta, Edmonton, Alberta T6G2G6, Canada) |

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| 10:00-10:20 | [56] Structural and dielectric properties of sputter-deposited $Ba_{0.48}Sr_{0.52}TiO_3/LaNiO_3$ artificial superlattice films, Hsin-Yi Lee and Heng-Jui Liu (National synchrotron Radiation Research Center, 101 Hsin-Ann Road, Hsinchu Science Park, Hsinchu 30076, China Taipei) |
| 10:20-10:30 | Coffee Break |
| 10:30-10:50 | [57] Fabrication and Characterization of Large-Size Anode-Supported Low-Temperature SOFC Based on Gd-doped Ceria Electrolyte, Changjing Fu, Siew Hwa Chan, Qinglin Liu, Xiaoming Ge (Nanyang Technological University, Singapore 639798, Singapore) |
| 10:50-11:10 | [58] Novel Nickel-Tin Oxide Anode Material For High-Performance Intermediate-Temperature Fuel Cells, Jianbing Huang, Zongqiang Mao (Institute of Nuclear and New Energy Technology, Tsinghua University, Beijing 100084, China) |
| 11:10-11:30 | [59] Preparation of $(Sc_2O_3)_{0.1}(CeO_2)_{0.01}(ZrO_2)_{0.89}$ ceramic hollow fiber for micro tubular solid oxide fuel cells, Nai-Tao Yang, Xiu-Xia Meng, Xiaoyao Tan (School of Chemical Engineering, Shandong University of Technology, Zibo 255029, China) |
| 11:30-11:50 | [60] Design and preparation of core-shell catalysts for alkali resistance in direct internal reforming molten carbonate fuel cell, Jian Zhang, Xiongf Zhang, Min Tu, Jiaojie Tan, Li Zhou (School of Chemical Engineering, Dalian University of Technology, Dalian 116012, China) |
| 12:00-14:00 | Lunch Time |

Chair: Xian-Zhu Fu, Zongqiang Mao

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| 14:00-14:30 | [52] Shaorong Wang (Shanghai Institute of Ceramics, Chinese Academy of Sciences (SICCAS), Shanghai 200050, China) Solid Oxide Fuel Cell Material Research in SICCAS (Invited Speaker) |
| 14:30-14:50 | [61] R&D of Proton Conducting SOFC Reactors to Co-generate Electricity and Ethylene at University of Alberta, Xian-Zhu Fu, Jie-Yuan Lin, Gui-Hua Zhou, Jing-Li Luo Karl T. Chuang, Alan R. Sanger, Andrzej Krzywickic (University of Alberta, Edmonton, Alberta T6G2G6, Canada) |
| 14:50-15:10 | [62] LSM particle size effect on the overall performance of IT-SOFC, Y. P. Zheng, M. Wu, S. R. Wang, Z. R. Wang, Y. Wang, Y. M. Sun (Southeast University, Nanjing 211189, China) |
| 15:10-15:30 | [63] Intermediate-temperature electrochemical performance of polycrystalline $PrBaCo_2O_{5+\delta}$ -based cathodes on $Sm_{0.2}Ce_{0.8}O_{1.9}$ electrolytes, Deng-Jie Chen, Zong-Ping Shao (State Key Laboratory of Materials-Oriented Chemical Engineering, Nanjing University of Technology, Nanjing 210009, China) |
| 15:30-15:50 | [64] Preparation of Electrolyte Materials for Micro Tubular Solid Oxide Fuel Cells by Phase Inversion Spinning Process, Nan Liu, Yang Liu, Bo Meng, Xiao Yao Tan (School of Chemical Engineering, Shandong University of Technology, Zibo 255049, China) |
| 15:50-16:10 | [65] Structure, Electronic Conductivity and Electrochemical Properties of $Ln_{0.6}Sr_{0.4}Co_{0.2}Fe_{0.8}O_{3-\delta}$ ($Ln=La, Pr$) as Cathodes for IT-SOFC, Ze Tong, Yi-Mei Yin, Ming-Wen Xiong, Nai-Tao Yang, Zi-Feng Ma (Department of Chemical Engineering, Shanghai Jiao Tong University, Shanghai 200240, China) |

Session 6: Electrochemical Supercapacitors

Room: Grand Ball Room B

Chair: Levi Thompson, Xiaogang Zhang

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| 8:30-9:00 | [93] Prof. George Z. Chen (The University of Nottingham, UK) Super capacitors from chemically modified carbon nanotubes (Invited Speakers) |
| 9:00-9:20 | [97] A comparison of the microstructures and electrochemical capacitive properties of two graphenes prepared by arc discharge method and chemical method, Hao Zhan, Gaoping Cao, Bin Xu, Yusheng Yang (Research Institute of Chemical Defense, China) |
| 9:20-9:40 | [98] A novel method to prepare binary Ni-Fe compounds and ordered mesoporous carbon composite as a supercapacitor electrode, Jicheng Feng, Bohejin Tang, Jiachang Zhao, Ping Liu, Jingli Xu (College of Chemistry and Chemical Engineering, Shanghai University of Engineering Science, China) |
| 9:40-10:00 | [99] Controlling the growth of vertically aligned single walled carbon nanotubes from ethanol for electrochemical supercapacitor application, Mohd Asyadi Azam Mohd Ambri Mohamed, Eiji Shikoh, Akihiko Fujiwara, and Tatsuya Shimoda (Japan Advanced Institute of Science and Technology, Ishikawa, 923-1292 Japan) |
| 10:00-10:20 | [100] Effect of microwave heat-treatment time on the properties of activated carbons as electrode materials for supercapacitors, Xiaojun He, Ting Wang, Suan Long, Xiaoyong Zhang and Mingdong Zheng (School of Chemistry and Chemical Engineering, Anhui University of Technology, China) |
| 10:20-10:30 | Coffee Break |
| 10:30-11:00 | [94] Prof. Nae-Lih Wu (National Taiwan University, China Taipei) Organic-inorganic composite materials for high-performance supercapacitors (Invited Speaker) |
| 11:00-11:20 | [101] Preparation of Graphene/Polypyrrole Composites for Electrochemical Capacitors, Yongqin Han, Bing Ding, Xiaogang Zhang (College of Material Science & Engineering, Nanjing University of Aeronautics and Astronautics, China) |
| 11:20-11:40 | [102] A new method synthesis polyaniline/multi-walled carbon nanotube composites for supercapacitor electrodes, Jian Pan, Xing Wei, S.P. Zhou (School of Chemical Engineering, Shandong University of Technology, China) |
| 11:40-12:00 | [103] Nanocomposite of cobalt oxide and ordered mesoporous carbon as the electrode materials for supercapacitor, Jingli Xu, Ping Liu, Jiachang Zhao, Jicheng Feng, Bohejin Tang (College of Chemistry and Chemical Engineering, Shanghai University of Engineering Science, China) |
| 12:00-14:00 | Lunch Time |

Chair: Nae Lih Wu, George Z. Chen

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| 14:00-14:30 | [95] Prof. Levi Thompson (University of Michigan, USA) Nanostructured Early Transition Metal Nitrides and Carbides for Electrochemical Capacitors (Invited Speaker) |
| 14:30-14:50 | [104] Interface-Hydrothermal Synthesis of CoS_x Nanodots Well Dispersed on Poly(sodium-4-styrene sulfonate) Functionalized Multi-walled Carbon Nanotubes and Their Electrochemical Capacitance, Changzhou Yuan, Laifa Shen, Fang Zhang (Anhui University of Technology, China) |
| 14:50-15:10 | [105] Electrochemical capacitive performances of nanoporous carbon derived from sunflower seed shell, Xiao Li, Wei Xing, Shuping Zhuo, Jin Zhou (School of Chemical Engineering, Shandong University of Technology, China) |
| 15:10-15:20 | Coffee Break |
| 15:20-15:50 | [96] Prof. Xiaogang Zhang (Nanjing University of Aeronautics and Astronautics, Nanjing 210016, China) Novel Nanostructured Materials for High Energy Density Supercapacitors (Invited Speaker) |
| 15:50-16:10 | [106] Fabrication Of Nanostructured Graphene/Polyaniline Hybrid Material For Supercapacitors, Hua-Lan Wang, Qing-Li Hao, Xin Wang, Lu-De Lu, Xu-Jie Yang (Nanjing University of Science and Technology, Nanjing 210094, China) |
| 16:10-16:30 | [107] Ionic-liquid-assisted mechanochemical preparation and electrochemical performance of graphene nanosheets/polypyrrole composite for supercapacitor, Xiang-Jun Lu, Xiao-Gang Zhang, Su-Dong Yang, Liang Hao (Nanjing University of Aeronautics and Astronautics, Nanjing 210016, China) |

Closing Remarks

Room: Grand Ball Room B

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| 17:00-17:30 | Symposium Chair: Professor O. Savadogo (École Polytechnique de Montréal, Montréal, Québec, Canada) |
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Thursday, July 15, 2010

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| 9:00-21:00 | 2010 shanghai EXPO Park (All participants go to Shanghai EXPO sites on you own) |
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