

## Junbing Yang, Ph.D.

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### Professional Experience

- Argonne National Laboratory, Chemical Sciences & Engineering Division, Assistant chemist, 2007 to present
- Argonne National Laboratory, Chemical Sciences & Engineering Division, Post-Doctoral appointee, 2004 to 2007
- University of Akron, Department of Polymer Engineering, Post-Doctoral research associate, 2003 ~ 2004
- INRS-Energy-Materials-Telecommunications, Canada, Post-Doctoral research fellow, 2002 to 2003
- Tsinghua University, Department of Materials Sciences & Engineering, China, Post-Doctoral research associate, 2000 to 2002

### Research Experience

- Carbon nanotube synthesis, modification and micro-fabrications
- Nanoparticles synthesis
- Synthesis and pore structure control of porous materials
- Nanomaterials for fuel cell applications
- Nanostructured polymer and carbon for hydrogen storage
- Synthesis and test Tribenzohexazatriphenylenes based nanoporous polymer as hydrogen storage materials for transportation application.
- Carbon nanotubes and carbon aerogels for supercapacitor applications
- Carbon Nanotubes and Conducting Polymers flexible device for Photonic Applications
- Activated carbon microspheres as adsorbents for Hemoperfusion
- Activated carbon fiber as super adsorbent for low concentration organic compounds

### Education

- Ph.D., Chemical Technology, Chinese Academy of Sciences, China, 2000
- B.S., Materials Science & Engineering, Northwestern Polytechnic University, China, 1994

### Professional Affiliations

American Chemical Society; American Carbon Society; Electrochemical Society; North American Catalysis Society

### Patents & Patent Applications

- Di-Jia Liu and Junbing Yang, Method of Fabricating Electrode Catalyst Layers with Directionally Oriented Carbon Support for Proton Exchange Membrane Fuel Cell, **US patent** Pub No.: US 2006 / 0269827 A1, Pub Date: November 30, 2006

- Di-Jia Liu, Junbing Yang and Xiaoping Wang, Aligned Carbon Nanotube with Electro-Catalytic Activity for Oxygen Reduction Reaction, **US patent 60/692,773** filed on 6/21/05
- Luping Yu, Di-Jia Liu and Junbing Yang, Porous polymeric materials for hydrogen storage application, **US provisional patent application**, App No.: 60/937, 511, App Date: July 6 2007
- Jun-Bing Yang, Feiyu Kang, Zheng-Hong Huang, Xuan-Sheng Gao, A method to control the pore structure of activated carbon, **Chinese patent**, Pub No.: CN 1295027A, Pub Date: May 16, 2001
- Lang Liu, Jun-Bing Yang, Li-Cheng Ling, Wei-ming Qiao, A method of preparation of phenolic resin-based spherical activated carbon, **Chinese patent**, Pub No.: CN 1240220A, Pub Date: January 5, 2000
- Lang Liu, Jun-Bing Yang, Li-Cheng Ling, A method of preparation of phenolic resin-based spherical activated carbon with high mesopore volume, **Chinese patent**, Pub No.: CN 1247212A, Pub Date: March 15, 2000
- Li-Zhong Yao, Jun-Bing Yang, Li-Cheng Ling, Xing-Ming Zhu, Jin-Ren Song, Lang Liu, A device of strength test for single particle of spherical activated carbon, **Chinese patent**, Pub No.: CN 2356340Y, Pub Date: Dec. 29, 1999
- Li-Cheng Ling, Jun-Bing Yang, Lang Liu, Chun-Xiang Lu, A method of preparation of spherical activated carbon by addition of organic substance, **Chinese patent**, Pub No.: CN 1279125A, Pub Date: Jan. 10, 2001

#### Publications, Proceedings & Presentations

- Junbing Yang, Di-Jia Liu, Nancy N. Kariuki and Lin X. Chen Aligned carbon nanotubes with built-in FeN<sub>4</sub> active sites for electrocatalytic reduction of oxygen, **Chemical Communications**, 2008, 329-331, DOI: 10.1039/b713096a.
- Junbing Yang and Di-Jia Liu, Three-dimensionally structured electrode assembly for proton-exchange membrane fuel cell based on patterned and aligned carbon nanotubes, **Carbon**, 2007, 45, 2845-2847.
- Di-Jia Liu, Junbing Yang and D. Gosztola, Investigation of Aligned Carbon Nanotubes as a Novel Catalytic Electrodes for PEM Fuel Cells, **ECS Transactions**, 2007, 5 (1) 147-154
- Junbing Yang, Liangti Qu, Ye Zhao, Qihong Zhang and Liming Dai, Jeffery W. Baur, Benji Maruyama and Rich A. Vaia, et al, Multicomponent and Multidimensional Carbon Nanotube Micropatterns by Dry Contact Transfer, **Journal of Nanoscience and Nanotechnology**, 2007, 7(4-5): 1573-1580
- Lingchun Li, Junbing Yang, Richard Vaia and Liming Dai, Multicomponent Micropatterns or Carbon Nanotubes, **Synthetic Metals**, 2005; 154(1-3): 225-228
- Qiong Cai, Zheng-Hong Huang, Feiyu Kang and Jun-Bing Yang, Preparation Of activated carbon microspheres from phenolic-resin by supercritical water Activation, **Carbon**, 2004, 42(4): 775-783
- Junbing Yang, Liming Dai, and Richard A. Vaia, Multicomponent Interposed Carbon Nanotube Micropatterns by Region-Specific Contact Transfer and Self-Assembling, **J. Phys. Chem. B**, 2003; 107 (45): 12387 -12390
- Zheng-Hong Huang, Feiyu Kang, Jun-Bing Yang, Kai-Ming Liang, Ruowen Fu and Aping Huang, Effect of CO in activating gas on the pore structure of activated carbon fiber with CO<sub>2</sub> activation, **Journal of Materials Science Letters**, 2003, 22, 293-295

- Jun -Bing Yang, Li -Cheng Ling, Lang Liu, Fei -Yu Kang, Zheng -Hong Huang, and Hui Wu, Preparation of and Properties Phenolic Resin-Based Activated Carbon Spheres with Controlled Pore Size Distribution, **Carbon**, 2002, 40(6): 911-916
- Zheng-Hong Huang, Feiyu Kang, Jun-Bing Yang, and Kai-Ming Liang, Effect of Oxidation Treatment on Surface Fractal Dimension of Activated Carbon Fiber, **Chemistry Letters**, 2002, (1): 76-77
- Zheng-Hong Huang, Feiyu Kang, Yong-Ping Zheng, Jun-Bing Yang, and Kai-Ming Liang, Adsorption of Trace Polar Methy-ethyl-ketone and Non-Polar Benzene Vapors on Viscose Rayon Based Activated Carbon Fibers, **Carbon**, 2002, 40: 1363-1367
- Zheng-Hong Huang, Feiyu Kang, Wen Lai Huang, Jun-Bing Yang, Kai -Ming Liang, Meng-Long Cui and Zhiying Cheng, Pore Structure and Fractal Characteristics of Activated Carbon Fibers Characterized by Using HRTEM, **Journal of Colloid and Interface Science**, 2002, 249: 453-457
- Zheng-Hong Huang, Feiyu Kang, Jun-Bing Yang, Kai -Ming Liang, and Aiping Huang, Adsorption of volatile organic compounds on activated carbon fiber prepared by carbon dioxide. **Molecular crystals and liquid crystals** 2002, 388(1): 23-28
- Zheng-Hong Huang, Feiyu Kang, Yong-Ping Zheng, Jun-Bing Yang, Kai-Ming Liang, Adsorption characteristics of trace volatile organic compounds on activated carbon fibres at room temperature. **Adsorption Science and technology**, 2002, 20 (5): 495-500
- Feiyu Kang, Zheng-Hong Huang, Kai-Ming Liang, Jun-Bing Yang, and Hui Wu, Adsorption of Volatile Organic Compounds in Nitrogen Streams on the Oxidized Activated Carbon Fibers, **Adsorption Science and technology**, 2001, 19 (5): 423-433
- 17 publications in Chinese
- 19 proceedings papers
- 12 conference presentations