朴 元 哲

Yuanzhe Piao

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◆ **NMEC Lab**

Preparation of nanostructured materials for catalytical, biomedical and energy related applications.

◆ **Position Opening**

NMEC is seeking potential colleagues. Researchers who wish to explore coming to the NMEC Lab are encouraged to contact the group leader, Prof. Yuanzhe Piao (parkat9@snu.ac.kr))
Positions: MS course, Ph.D. course, and Postdoc.

Majors: nanomaterial, electrochemistry (battery, fuel cell, biosensor).

◆ EDUCATION

- **Bachelor of Science (September 1989 ~ August 1993)**
  Department of Chemistry, Yanbian University

- **Master of Science (September 1993 ~ August 1996)**
  Department of Chemistry, Yanbian University
  Supervisor: Prof. Chengyun Piao
  Major: Analytical Chemistry,
  Thesis: Electrochemical Analysis of Aromatic Amine Compounds

- **Doctor of Philosophy (March 2000 ~ August 2004)**
  Department of Chemistry, Seoul National University
  Supervisor: Prof. Hasuck Kim
  Major: Electrochemistry,
  Thesis: Preparation of Nano-sized Materials Using Ordered Porous Alumina Membrane

◆ ACADEMIC APPOINTMENTS

1. **July, 1996 ~ December, 1998: Teaching Assistant in Chemistry Department of Yanbian University.**
2. **January, 1999 ~ February, 2000: Full Time Lecturer in Chemistry Department of Yanbian University.**
3. **October, 2004 ~ August, 2006: Senior Researcher, National Creative Research Initiative Center for Nanocrystalline materials, School of Chemical and Biological Engineering, Seoul National University (Supervisor: Prof. Taeghwan Hyeon).**
4. **September, 2006 ~ April, 2008: BK21 Postdoctoral Fellow, Brain Korea21 in Chemical Engineering, Seoul National University.**
5. **May, 2008 ~ August, 2009: BK21 Research Assistant Professor, Brain Korea21 in Chemical Engineering, Seoul National University.**
6. **September, 2009 ~ August, 2013: Assistant Professor, Department of Nano Science and Technology, Graduate School of Convergence Science and Technology, Seoul National University.**
7. **May, 2013 ~ Present: Director, Nanoparticle Innovation Research Center in Advanced Institutes of Convergence Technology, Seoul National University.**

8. **September, 2013 ~ Present: Associate Professor, Graduate School of Convergence Science and Technology, Seoul National University.**

◆ SELECTED PUBLICATIONS

1. **Yuanzhe Piao, Andrew Burns, Jaeyun Kim, Ulrich Wiesner, and Taeghwan Hyeon, Designed Fabrication of Silica-Based Nanostructured ParticleSystems for Nanomedicine Applications, Adv. Funct. Mater., 2008, 18, 3745-3758.**
2. **Jaeyun Kim, Yuanzhe Piao, and Taeghwan Hyeon, Multifunctional nanostructured materials for multimodal imaging, and simultaneous imaging and therapy, Chem. Soc. Rev., 2009, 38, 372-390.**
3. **Yuanzhe Piao, Hasuck Kim. Fabrication of Nanostructured Materials Using Porous Alumina Template and Their Applications for Sensing and Electrocatalysis, J. Nanosci. Nanotech., 2009, 9, 2215-2233.**
4. **Yuanzhe Piao, Jaeyun Kim, Hyon Bin Na, Dokyoon Kim, Ji Seon Baek, Mi Kyeong Ko, Jung Hee Lee, Mohammadreza Shokouhimehr, Taeghwan Hyeon, Wrap-bake-peel process for nanostructural transformation from beta-FeOOH nanorods to biocompatible iron oxide nanocapsules, Nature Materials, 2008, 7, 242-247.**
5. **Taekyung Yu, Jinkyung Park, Jaewon Moon, Kwangjin An, Yuanzhe Piao, Taeghwan Hyeon, Synthesis of Uniform Goethite Nanotubes with Parallelogram Cross Section, J. Am. Chem. Soc., 2007, 129, 14558-14559.**
6. **Mohammadreza Shokouhimehr, Yuanzhe Piao, Jaeyun Kim, Youngjin Jang, Taeghwan Hyeon, A magnetically recyclable nanocomposite catalyst for olefin epoxidation, Angew. Chem. Int. Ed., 2007, 46, 7039-7043. Co-first author.**
7. **Soon Gu Kwon, Yuanzhe Piao, Jongnam Park, Subramanian Angappane, Younghun Jo, Nong-Moon Hwang, Je-Geun Park, Taeghwan Hyeon, Kinetics of Monodisperse Iron Oxide Nanocrystal Formation by "Heating-Up" Process, J. Am. Chem. Soc., 2007, 129, 12571-12584.**
8. **Yuanzhe Piao, Youngjin Jang, Mohammadreza Shokouhimehr, In Su Lee, Taeghwan Hyeon, Facile aqueous-phase synthesis of uniform palladium nanoparticles of various shapes and sizes, Small, 2007, 3, 255-260.**
9. **Yuanzhe Piao, Kwangjin An, Jaeyun Kim, Taekyung Yu, Taeghwan Hyeon, Sea urchin shaped carbon nanostructured materials:**

carbon nanotubes immobilized on hollow carbon spheres, J. Mater. Chem., 2006, 16, 2984-2989.

10. **Yuanzhe Piao, Hyunchang Lim, Ji Young Chang, Won-Yong Lee, Hasuck Kim, Nanostructured materials prepared by use of ordered porous alumina membranes, Electrochimica Acta, 2005, 50, 2997-3013.**
11. **Yuanzhe Piao, Hasuck Kim, Paired cell for the preparation of AgI nanowires using nanoporous alumina membrane templates, Chem. Commun., 2003, 2898-2899.**
12. **Yuan Zhe Piao, Gui Fen Wang, The electrochemical behavior and the determination of bavistin on glassy carbon electrode, Chinese Chem. Lett., 1998, 9, 747-748.**

◆ SELECTED INTERNATIONAL ORAL PRESENTATIONS

1. **Yuanzhe Piao, Large-scale Synthesis of Magnetite Nanocrystals Imbedded in Carbon Matrix and Their Application in Lithium-ion Batteries, 7th Asian Conference on Electrochemistry, Kumamoto, Japan, 18-22, May, 2010. (Key note)**
2. **Yuanzhe Piao, Jaeyun Kim, Hyon Bin Na, Taeghwan Hyeon. Wrap-bake-peel process for nanostructural transformation from akagenite nanorods to biocompatible iron oxide nanocapsules, MRS 2008 fall meeting, US, Boston, Hynes Convention Center, 1-4, December, 2008. Magnetic nanostructures by design, symposium K2.7**
3. **Yuanzhe Piao, and Taeghwan Hyeon. A method for the fabrication of stable and reproducible carbon nanotubes modified electrode for electrochemical applications, International Society of Electrochemistry, 56th Annual Meeting, Busan, Korea, 25-30, September, 2005.**
4. **Yuanzhe Piao, and Taeghwan Hyeon. Preparation and Electrochemical Application of Nanostructured Novel Carbon Materials, 5th Asian Conference on Electrochemistry, Shanghai, China, 09-12, May, 2005. (Served as one of the session co-chair person)**

◆ PATENT

2. **Taeghwan Hyeon, Yuanzhe Piao, Youngjin Jang, Process for preparing palladium nanoparticles using triblock copolymers, 10-2006-0066439.**

3. **Taeghwan Hyeon, Yuanzhe Piao, Jaeyun Kim, Metal oxide hollow nanocapsule and a method for preparing the same, 10-2006-0122077. International application number: PCT/KR2007/006269.**
4. **Taeghwan Hyeon, Jaeyun Kim, Yuanzhe Piao, Nohyun Lee, Magnetic nanocomposite, and process for selective binding, separation and purification of protein using the same. 10-2009.**
5. **Taeghwan Hyeon, Yuanzhe Piao, Yung-Eun Sung, Hyun Sik Kim, Method of fabricating a metal oxide-carbon nanocomposite. 10-2009-0081026.**