

## Woonsup Shin, Candidate for ISE Vice-President Election



Woonsup Shin, born in 1962, is a Professor of Department of Chemistry and Interdisciplinary Program of Integrated Biotechnology in Sogang University, Seoul, Korea. He is currently serving as a chair of Bioelectrochemistry Division of ISE and served two-terms of vice-chair of the division (2008-2011). He was an Editorial Board of *Electrochimica Acta* (2011-2013). He involved in organizing the symposia of the ISE meetings - Busan, Korea (2005), Beijing, China (2009), Nice, France (2010), Niigata, Japan (2011), Prague, Czech (2012), Bochum, Germany (2013), Queretaro, Mexico (2013), Nanjing, China (2014), and Lausanne, Switzerland (2014).

### Personal Statement

I love and enjoy to be in ISE meetings and to meet wonderful friends from all over the world. Serving the society, which I am involved in, is a privilege and also a duty. I'd like to contribute for the society to grow further. Young scientists are our future and I'd like to promote them to be involved more in the societal and the divisional activities. I also want to be a facilitator among the executive committee if I'm elected.

### Research Interests

- ◎ Electrochemical activation of carbon dioxide
  - "Highly Selective Electrocatalytic Conversion of CO<sub>2</sub> to CO at -0.57 V (NHE) by Carbon Monoxide Dehydrogenase from *Moorella thermoacetica*" *J. Am. Chem. Soc.* **2003**, 14688.
  - "Microbes as Electrochemical CO<sub>2</sub> Conversion Catalysts" *ChemSusChem* **2011**, 587.
  - "Reduction of CO<sub>2</sub> to CO at Low Overpotential in Neutral Aqueous Solution by a Ni(cyclam) Complex Attached to Poly(allylamine)" *ChemSusChem* **2012**, 634.
  
- ◎ Non-gassing electroosmotic pump for drug delivery system
  - "A Miniature, Nongassing Electroosmotic Pump Operating at 0.5 V" *J. Am. Chem. Soc.* **2011**, 2374.
  - "A Miniature, Single Use, Skin-adhered, Low-voltage, Electroosmotic Pumping-based Subcutaneous Infusion System" *Drug Deliv. Trans. Res.* **2011**, 342.
  
- ◎ Redox platform for sensors and biosensors
  - "Chitosan-Cross-linked Osmium Polymer Composites as an Efficient Platform for Electrochemical Biosensors" *ChemPhysChem* **2013**, 2232.
  - "Hydroquinone Modified Chitosan/Carbon Film Electrode for the Selective Detection of Ascorbic Acid" *Carbohydrate Polymers* **2013**, 641.
  
- ◎ Electrochemical energy conversion
  - "Synthesis of Mesoporous Li-Mn Spinel without Post-template Treatment" *Micropor. Mesopor. Mater.* **2012**, 137.
  - "Novel Morphology-controlled Synthesis of Homogeneous LiFePO<sub>4</sub> for Li-ion Batteries Using an Organic Phosphate Source" *RSC Adv.* **2013**, 14263.
  
- ◎ Bioinorganic chemistry of oxygen activation
  - "Ligand Topology Effect on the Reactivity of a Mononuclear Nonheme Iron(IV)-Oxo Complex in Oxygenation Reactions" *J. Am. Chem. Soc.* **2011**, 11876.

“Conversion of High-spin Iron(iii)-alkylperoxo to Iron(iv)-oxo Species via O-O Bond Homolysis in Nonheme Iron Models” *Chem. Sci.* **2014**, 156.

### Education and Experiences

1980 - 1986 Seoul National University, B.S., M.S.  
1986 - 1987 Korea Standards Research Institute, Inorganic Analysis Lab., Researcher  
1987 - 1992 Texas A&M University, Ph.D  
1992 - 1995 Stanford University, Research Associate  
1995 - present Professor, Department of Chemistry, Sogang University  
2003, 2010 Visiting Scholar, Department of Chem. Eng., University of Texas at Austin  
2004 - 2006 Head, Department of Chemistry, Sogang University  
2005 - 2009 Chair, Interdisciplinary Program of Integrated Biotechnology, Sogang University  
2013 - present Vice-Head, Research Foundation of Sogang University  
2013 - present Head, Sogang Business Incubation Center

### Other Societal Activities and Services

Woonsup Shin is active members of the International Society of Electrochemistry (ISE), Korean Electrochemical Society (KECS), The Electrochemical Society (ECS), Korean Chemical Society (KCS), and American Chemical Society (ACS). He was an Associate Editor of the Journal of the Korean Electrochemical Society from 2001 to 2007 and a Chair of International Committee of the Korea Electrochemistry Society from 2012 to 2013. He chaired the International Symposium of Electrochemistry and Biomedical Technology in Seoul, Korea in 2008. He has been a President of Korean Bioinorganic Society from 2008. He chaired the 4<sup>th</sup> Asian Biological Inorganic Chemistry Conference in Jeju, Korea in 2008.