

**Prof. Yong Soo Kang**

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**Education**

Ph.D. Tufts University 1986

M.S. Korea Advanced Institute of Science and Technology (KAIST) 1978

B.S. Seoul National University 1976

**Research Interests**

Dye sensitized solar cell, Gas separation membranes, Facilitated transport, Functional polymers

**Career**

2010 – Present, Professor, Dept. of Energy Engineering, Hanyang University

2008 – 2015, Director, Center for Next Generation Dye-Sensitized Solar Cells

2005 – 2009, Professor, Dept. of Chem. Eng., Hanyang University

1998 – 2005, Director, Center for Facilitated Transport Membranes

1998 – 2005, Korea Institute of Science and Technology (KIST)

1992 – 1993, National Institutes of Standards and Technology (USA)

**Recent Projects**

2013, Novel Facilitated CO<sub>2</sub> transport membrane Using Nano-Carrier, (Korea Carbon Capture & Sequestration R&D Center, KCRC)

2012, Development of Olefin Separation Membrane System Utilizing Nanomaterial/Polymer Composites in Semipilot Scale, (Korea Institute of Energy Technology Evaluation and Planning KETEP)

2010, Development of Consolidation for Weathered Stone and Conservation Equipments (National Research Institute of Cultural Heritage of Cultural Heritage Administration)

2010, Ionic Transport Through Electrolyte in Dye-Sensitized Solar Cells (The Ministry of Education, Science, and Technology)

2010, Characterization of DSSCs Employing Oligomers and Supramolecules (The Ministry of Education, Science, and Technology)

2009, Fusion Technology for Green Energy and Global Warming (The Ministry of Education, Science, and Technology)

2009, Energy Saving Membrane Processes for Water Treatment and Hydrocarbon Separation (The Ministry of Knowledge Economy)

2009, Development of Fundamental Science and Technology for Materialization and Practical Application of the Artificial Photosynthesis (The Ministry of Education, Science, and Technology)

2009, The Enhancement of Reliability and the Investigate of Degradation Mechanism (The Ministry of Knowledge Economy)

2009, Development of Solid Electrolyte for Mobile Photovoltaic system (The Ministry of Knowledge Economy)

**Professional Activities & Awards**

2015, 'The best achievement of Korea', Ministry of Science, ICT and Future Planning

2011, 'Sangam Polymer Award', The Polymer Society of Korea

2010, 'Alumni of the Year' Award, Tufts University

2004 – Present, Editorial Board for Journal of Membrane Science

2005 – 2007, Editor-in-Chief, Macromolecular Research

2003, The Academic Achievement Award from the Polymer Society of Korea

2002, The Best Paper Award from the Korean Federation of Science and Technology Societies

2001, The Scientist of Month from the Korea Science and Engineering Foundation

**Author of 320 scientific papers, 30 patents**

**Selected Publications**

1. Exploring interfacial events in Gold-Nanocluster-Sensitized solar cells: Insights into the effects of the cluster size and electrolyte on solar cell performance, *J. Am. Chem. Soc.*, 138,390 (2016)
2. Interfacial degradation of planar lead halide perovskite solar cells, *ACS Nano*, 10, 218 (2016)
3. Accelerated CO<sub>2</sub> transport on surface of AgO nanoparticles in ionic liquid BMIMBF<sub>4</sub>, *Sci. Rep.*, 5, 16362 (2015)
4. A strong linear correlation between the surface charge density on Ag nanoparticles and the amount of propylene adsorbed, *J. Mater. Chem. A*, 2, 6987 (2014)
5. Amplifying Charge-Transfer Characteristics of Graphene for Triiodide Reduction in Dye-Sensitized Solar Cells, *Advanced Functional Materials*, 21, 19, 3729 (2011)
6. Surface Energy-Level Tuning of Silver Nanoparticles for Facilitated Olefin Transport, *Angewandte Chemie-International Edition*, 50, 13, 2982 (2011)
7. Novel Application of Partially Positively Charged Silver Nanoparticles for Facilitated Transport in Olefin/Paraffin Separation Membranes, *Chemistry of Materials*, 20, 4, 1308 (2008)
8. Interaction with Olefins of the Partially Polarized Surface of Silver Nanoparticles Activated by p-Benzoquinone and Its Implications for Facilitated Olefin Transport, *Advanced Materials*, 19, 475 (2007)
9. Control of Ionic Interactions in Silver Polymer Electrolytes Using an Ionic Liquid and Its Implication in Facilitated Olefin Transport, *Chemistry of Materials*, 18, 7, 1789 (2006)