

**Kye Sang YOO, Ph.D.**

+82-2-970-6602 (office), +82-2-977-8317 (fax)  
kyoo@seoultech.ac.kr

**Education**

University of Cincinnati <i>Ph.D.</i> , Chemical Engineering	Cincinnati, OH August 2003
Gwangju Institute of Science & Technology <i>M.S.</i> , Environmental Engineering	Gwangju, KOREA February 1998
Sogang University <i>B.S.</i> , Chemical Engineering	Seoul, KOREA February 1996

**Experience**

Seoul National University of Science & Technology <i>Assistant Professor</i> (Dept. Chemical Engineering)	Seoul, S.KOREA May 2008 ~ Present
Korean Institute of Science & Technology <i>Senior Research Scientist</i> (Clean Energy Research Center)	Seoul, S.KOREA May 2004 ~ Apr. 2008
University of Cincinnati <i>Post-doctoral Fellow</i> (Dept. Environmental Engineering)	Cincinnati, OH Sep. 2003 ~ Apr. 2004

**Honors & Awards**

2010, 2014 Marquis Who's Who in the World  
2010 Best Teaching Award (Seoul National University of Science & Technology)

**Professional Affiliations**

Applied Chemistry for Engineering (1225-0112, SCOPUS level), Editor	2010-2013
Catalysis (ISSN 2233-615X), Editor	2011
Korean Society of Industrial and Engineering Chemistry, Life Member	2004-present
Korean Institute of Chemical Engineers, Regular Member	2004-present
American Chemical Society, Regular Member	2004-present
American Institute of Chemical Engineers, Member	1999-2006

**Research Interesting**

Synthesis of Nanomaterials  
Applications of Green Chemistry  
Estimation of Greenhouse Gas Emission

**Research Achievement**

Journal: 67, conference 123, patent 15.

## Selected Refereed Articles in International Journals

1. C.S. Kim, **K.S. Yoo\*** "Synthesis of Pd particles with various shapes by ionic liquids for HFP hydrogenation catalyst" *Research on Chemical Intermediates (in press)*
2. C.S. Kim, **K.S. Yoo\*** "Effect of calcination temperature on catalytic activity of Pd/C particle prepared by ionic liquid for HFP hydrogenation" *Journal of Nanoscience and Nanotechnology*, **14**(7), 5508-9567 (2014)
3. H.J. Lee, J.Y. Park, **K.S. Yoo**, J. Yoon, Y.H. Kim, J. Min "Activity and characterization of mixed organic compounds extracted from Rhodobacter sphaeroides as alternative materials to serum for mammalian cell growth" *Applied Microbiology and Biotechnology*, **97**(21), 9561-9567 (2013)
4. K. Hong, D.W. Pak, **K.S. Yoo\*** "Morphology effect on electrocatalytic activity of TiO<sub>2</sub> spheres synthesized by binary ionic liquids in water electrolysis" *Bulletin of the Korean Chemical Society* **33**(6), 1829-1833 (2012)
5. S.Y. Lee, B.N. Kim, Y.W. Choi, **K.S. Yoo**, Y.H. Kim, J. Min "Growth response of avena sativa in amino-acids-rich soils converted from phenol-contaminated soils by corynebacterium glutamicum" *Journal of Microbiology and Biotechnology*" **22**(4), 541-546 (2012)
6. K. Hong, **K.S. Yoo\*** "Synthesis of TiO<sub>2</sub> hollow spheres using binary ionic liquids as an electrocatalyst" *Research on Chemical Intermediates*, **37**, 1325-1331 (2011)
7. J.H. Han, J.Y. Park, **K.S. Yoo**, H.W. Kang, G.W. Choi, B.W. Chung, J. Min\* "Effect of glucose on xylose utilization in Saccharomyces cerevisiae harboring the xylose reductase gene" *Archives of Microbiology*, **193**, 335-340 (2011)
8. **K.S. Yoo\***, S.H. Lee "Influence of ionic liquid as a template on preparation of porous  $\eta$ -Al<sub>2</sub>O<sub>3</sub> to DME synthesis from methanol" *Bulletin of the Korean Chemical Society*, **31**(6), 1628-1632 (2010)
9. C.W. Seo, K.D. Jung, K.Y. Lee, **K.S. Yoo\*** "Dehydration of methanol over Nordstrandite based catalysts for dimethyl ether synthesis" *Journal of Industrial and Engineering Chemistry*, **15**(5), 649-652 (2009)
10. B. M. Nagaraja, K.D. Jung, **K.S. Yoo\*** "Synthesis of Cu/Fe/Ti/Al<sub>2</sub>O<sub>3</sub> Composite Granules for SO<sub>3</sub> Decomposition in SI Cycle" *Catalysis Letters*, **128**, 248-252 (2009)
11. B. M. Nagaraja, K.D. Jung, B.S. Anh, H. Abimanyu, **K.S. Yoo\*** "Catalytic Decomposition of SO<sub>3</sub> over Pt/BaSO<sub>4</sub> Materials in Sulfur-Iodine Cycle for Hydrogen Production" *Industrial & Engineering Chemistry Research*, **48**(3) 1451-1457 (2009)
12. C.W. Seo, K.D. Jung, K.Y. Lee, **K.S. Yoo\*** "Influence of Structure Type of Al<sub>2</sub>O<sub>3</sub> on Dehydration of Methanol for Dimethyl Ether Synthesis" *Industrial & Engineering Chemistry Research*, **47**(17) 6573-6578 (2008)
13. D.J. Moon\*, J.W. Ryu, **K.S. Yoo**, D.J. Sung, S.D. Lee "Development of iso-octane fuel processor system for fuel cell applications" *Catalysis Today*, **136**, 222-227 (2008)
14. H. Abimanyu, K.D. Jung, K.W. Jung, J. Kim, **K.S. Yoo\*** "Preparation and characterization of Fe/Cu/Al<sub>2</sub>O<sub>3</sub>-composite granules for SO<sub>3</sub> decomposition to assist hydrogen production" *Applied Catalysis A: General*, **343**, 134-141 (2008)
15. B. M. Nagaraja, H. Abimanyu, K.D. Jung, **K.S. Yoo\*** "Novel Method for the Preparation of Mesoporous BaSO<sub>4</sub> Material with Thermal Stability by Spray Pyrolysis" *Bulletin of the Korean Chemical Society* **29**(5), 1007-1012 (2008)
16. J. Choi, J. Kim\*, **K.S. Yoo\***, T.G. Lee "Synthesis of mesoporous TiO<sub>2</sub>/ $\gamma$ -Al<sub>2</sub>O<sub>3</sub> composite granules with different sol composition and calcination temperature" *Powder Technology*, **181**, 83-88 (2008)
17. B.M. Nagaraja, H. Abimanyu, K.D. Jung, **K.S. Yoo\*** "Preparation of mesostructured barium sulfate with high surface area by dispersion method and its characterization" *Journal of Colloid and Interface Science* **316**(2), 645-651 (2007)
18. S.W. Row, T.Y. Chae, **K.S. Yoo\***, S.D. Lee, D.W. Lee, Y. Shul "Effect of Reaction Solvent on the Hydrogenation of Isophthalonitrile for Meta-Xylylenediamine Preparation" *Canadian Journal of Chemical Engineering*, **85**(6), 925-928 (2007)
19. H. Abimanyu, B.S. Ahn, C.S. Kim\*, **K.S. Yoo\*** "Preparation and characterization of MgO-CeO<sub>2</sub> mixed oxide catalysts by modified coprecipitation using ionic liquids for dimethyl carbonate synthesis" *Industrial & Engineering Chemistry Research*, **46**(24) 7936-7941 (2007)
20. **K.S. Yoo**, J.H. Kim, M.J. Park, S.J. Kim, O.S. Joo, K.D. Jung\* "Influence of solid acid catalyst on DME production directly from synthesis gas over the admixed catalyst of Cu/ZnO/Al<sub>2</sub>O<sub>3</sub> and various SAPO catalysts" *Applied Catalysis A: General*, **330**, 57-62 (2007)
21. J. Choi, J.Y. Ban, S.J. Choung, J. Kim\*, H. Abimanyu, **K.S. Yoo\*** "Sol-gel synthesis, characterization and photocatalytic activity of mesoporous TiO<sub>2</sub>/ $\gamma$ -Al<sub>2</sub>O<sub>3</sub> granules" *Journal of Sol-Gel Science and Technology*, **44**, 21-28 (2007)
22. H. Abimanyu, C.S. Kim, B.S. Ahn \*, **K.S. Yoo\*** "Synthesis of dimethyl carbonate by transesterification with various MgO-CeO<sub>2</sub> mixed oxide catalysts" *Catalysis Letters*, **118**, 30-35 (2007)
23. Q.N. Ho, **K.S. Yoo**, B.G. Lee\*, J.S. Lim "Measurement of Vapor-Liquid Equilibria for the Binary Mixture of Propylene (R-1270) + Propane (R-290)" *Fluid Phase Equilibria*, **245**, 63-70 (2006)
24. J.W. Ryu, J.M. Park, E.H. Choi, **K.S. Yoo**, S.I. Hong, D.J. Moon\* "Studies on the internal reforming of CH<sub>4</sub> by CO<sub>2</sub> in SOFC system" *Studies in Surface Science and Catalysis*, **159**, 617-620 (2006)
25. T.Y. Chae, S.W. Row, **K.S. Yoo\***, S.D. Lee, D.W. Lee "Hydrogenation of isophthalonitrile with 1-methylimidazole as an effective solvent for m-xylenediamine production" *Bulletin of the Korean Chemical Society*, **27**(3), 361-362 (2006)
26. D.J. Moon\*, J.M. Park, J.S. Kang, **K.S. Yoo**, S.I. Hong "Cogeneration of a synthesis gas and electricity by internal reforming of methane by CO<sub>2</sub> in Solid Oxide Fuel Cell System" *Journal of Industrial and Engineering Chemistry*, **12**(1), 149-155 (2006)
27. **K.S. Yoo\***, P. G. Smirniotis "Zeolites catalyzed alkylation of isobutane with 2-butene: Influence of acidic properties" *Catalysis Letters*, **103**, 249-255 (2005)
28. **K.S. Yoo**, T.G. Lee\*, J. Kim\* "Preparation and characterization of mesoporous TiO<sub>2</sub> particles by modified sol-gel method using ionic liquids" *Microporous and Mesoporous Materials*, **84**, 211-217 (2005)

29. H. Abimanyu, **K.S. Yoo**, D.J. Moon, B.S. Ahn\*, J. Song “Model to predict the dimethyl carbonate synthesis via transesterification of ethylene carbonate in fixed-bed reactor” *Journal of Industrial and Engineering Chemistry*, **11**(4), 502-506 (2005)
30. **K.S. Yoo**\*, S. Gopal, P.G. Smirniotis “Enhancement of n-Hexane cracking activity over modified ZSM-12 zeolites” *Industrial & Engineering Chemistry Research*, **44**, 4562-4568 (2005)
31. M. Selvaraj\*, K. Lee, **K.S. Yoo**, T.G. Lee\* “Synthesis of 2-acetyl-6-methoxynaphthalene using mesoporous  $\text{SO}_4^{2-}/\text{Al-MCM-41}$  molecular sieves” *Microporous and Mesoporous Materials*, **81**, 343-355 (2005)
32. **K.S. Yoo**, H. Choi, D.D. Dionysiou\* “Synthesis of anatase nanostructured  $\text{TiO}_2$  particles at low temperature using ionic liquid for photocatalysis” *Catalysis Communications*, **6**, 259-262 (2005)
33. Q.N. Ho, B.G. Lee\*, J.S. Lim, **K.S. Yoo** “Measurement of vapor-liquid equilibria for the binary mixture difluoromethane (HFC-32) + propylene (R-1270)” *Journal of Chemical Engineering Data*, **50**, 419-424 (2005)
34. **K.S. Yoo**, H. Choi, D.D. Dionysiou\* “Ionic liquid assisted preparation of nanostructured  $\text{TiO}_2$  particles” *Chemical Communication*, 2000-2001 (2004)
35. **K.S. Yoo**, V.V. Namboodiri, R.S. Varma\*, P. G. Smirniotis\* “Ionic liquid catalyzed alkylation of isobutane with 2-butene” *Journal of Catalysis*, **222**, 511-519 (2004)
36. **K.S. Yoo**, R. Tsekov\*, P.G. Smirniotis\* “Experimental proof for resonant diffusion of normal alkanes in LTL and ZSM-12” *Journal of Physical Chemistry B*, **107**, 13593-13596 (2003)
37. **K.S. Yoo**, P. G. Smirniotis\* “The deactivation pathway of 1-dimensional zeolites, LTL and ZSM-12, for alkylation of isobutene with 2-butene” *Applied Catalysis A: General*, **246**, 243-251 (2003)
38. **K.S. Yoo**, R. Kashfi, S. Gopal, P. G. Smirniotis\*, M. Gangoda, R. N. Bose\* “TEABr directed synthesis of ZSM-12 and its NMR characterization” *Microporous and Mesoporous Materials*, **60**, 57-68 (2003)
39. **K.S. Yoo**, E. Burckle, P. G. Smirniotis\* “Isobutane/2-butene alkylation using large pore zeolites: Influence of pore structure on activity and selectivity” *Journal of Catalysis*, **211**, 6-18 (2002)
40. **K.S. Yoo**, P. G. Smirniotis\* “The influence of Si/Al ratios of synthesized beta zeolites for the Alkylation of i-butane with 2-butene” *Applied Catalysis A: General*, **227**, 171-179 (2002)
41. S. Gopal, **K.S. Yoo**, P. G. Smirniotis\* “Synthesis of Al-rich ZSM-12 using TEAOH as template” *Microporous and Mesoporous Materials*, **49**, 149-156 (2001)
42. M.S. Kang, **K.S. Yoo**, S.J. Oh, S.H. Moon\* “A lumped parameter model to predict hydrochloric acid recovery in diffusion dialysis” *Journal of Membrane Science*, **188**, 61-70 (2001)
43. **K.S. Yoo**, E. Burckle, P. G. Smirniotis\* “Comparison of protonated zeolites with various dimensionalities for the liquid phase alkylation of i-butane with 2-butene” *Catalysis Letters*, **74**, 85-90 (2001)