

Hern Kim

Professor

Laboratory for Advanced Materials Processing <LAMP>

Department of Environmental Engineering and Energy (Undergraduate)

Department of Energy Science and Technology (Graduate)

Myongji University



116 Myongji-ro Cheoin-gu, Yongin, Gyeonggi-do 17058, Republic of Korea

Tel: +82-31-330-6688, Fax: +82-31-336-6336, CP: +82-10-4323-7652, E-mail: hernkim@mju.ac.kr

Education

1991	Ph.D.	University of Houston, Texas, U.S.A.	Chemical Engineering
1984	M.S.	Seoul National University, Seoul, Korea	Chemical Engineering
1982	B.S.	Seoul National University, Seoul, Korea	Chemical Engineering

Professional Position

1994 – present	Professor	Myongji University
2000 – 2001	Visiting Professor	University of Washington, Seattle, U.S.A.
1991 – 1994	Senior Researcher	SK Chemical Company
1984 – 1986	Researcher	Korea Institute of Science and Technology

Research Interest

Synthesis of advanced materials (including nano/micro composite particles, fibers, films, etc.) and their applications to a variety of fusion (energy/environment/chemical/bio/nano) technologies:

□ Advanced materials processing

- Advanced membranes for pervaporation, microfiltration, ultrafiltration, forward osmosis, reverse osmosis
- New ionic liquids for biorefinery and organic synthesis
- Metal suboxides and their application for functional additives
- Hydrogen storage materials and related technology
- Functional photocatalysts and their applications in environmental control
- Hybrid composite materials for water disinfection
- Chemical sensors using semiconducting metal oxides for environmental detection
- Magnetic microcarriers for diagnosis and purification
- Functional organic/ceramic/metallic porous media and foams
- Biocompatible polymers and their applications
- Nanomaterials in electrochemical biosensors for food analysis
- Novel materials for food technology applications including active and intelligent food packaging
- Functional nanoparticles, colloids, emulsion for electronic use
- Functional nanocatalysts for environmental control/energy use
- Molecular simulations for functional materials design

□ Emerging technology for sustainable environment and energy

- Design of novel processes for environmental and energy applications
- Computer aided process design and synthesis for fusion technology
- Reuse of waste materials via thermal decomposition and biotreatment

RECENT PUBLICATION (2007 ~ present)**Submitted - SCI**

1. J.M. Puguán, W.J. Chung, **H. Kim**, Functionalized ZrO₂/PVdF-HFP nanofiber via electrospinning as composite polymer electrolyte membrane for electrochromic application, *Materials Research Bulletin* (submitted 2015).
2. J.M. Puguán, W.J. Chung, **H. Kim**, Highly ion conductive and transparent organic-inorganic nanocomposite electrolyte with silane grafted ZrO₂ nanoparticles for electrochromic device, *Solar Energy Materials and Solar Cells* (submitted 2015)
3. F.O. Agyemang, J.M. Puguán, F. Li, F. Momade, **H. Kim**, Preparation and characterization of porous electrospun PVDF nanofiber and its application as pre-filter for oil-in-water filtration, *Separation and Purification Technology* (submitted 2015).
4. F.A. Sheikh, A.S. Qadir, A.H. Tamboli, A.A. Chaugule, **H. Kim**, Polyvinylidene fluoride nanofibers modified with cellulose acetate: a transition towards super hydrophilicity and cell biocompatibility, *Materials Science and Engineering C* (submitted 2015)
5. F.A. Sheikh, W.J. Chung, **H. Kim**, In situ hydrothermal approach to fabricate Poly(vinylidene fluoride) (PVDF) nanofibers coated with Poly(vinyl alcohol) (PVA), *Colloid and Polymer Science* (submitted 2015).
6. E.A. Evans, G. Lee, E.H. Jeon, S.J. Im; **H. Kim**, Synthesis of cobalt loaded PVDF membrane composite for hydrogen generation by hydrolysis of NaBH₄ aqueous solution, *Energy* (submitted 2015).
7. A.A. Chaugule, A. Tamboli, W.J. Chung, **H. Kim**, Novel ternary catalyst system consist the CO₂-philic ionic liquid for efficient synthesis of dimethyl carbonate from methanol and CO₂, *Fuel Processing Technology* (submitted 2015).
8. F. Li, F.O. Agyemang, Q. Li, **H. Kim**, Fabrication of superhydrophobic porous PVDF fiber by electrospinning for oil absorption, *Applied Surface Science* (submitted 2015).
9. A. Jadhav, **H. Kim**, Synthesis of substituted amines: catalytic reductive amination of carbonyl compounds using Lewis acid Zn-Co-double metal cyanide/ polymethylhydrosiloxane, *Chemical Engineering Journal* (submitted 2015 Sept).
10. A. Tamboli, A. Chaugule, W.J. Chung, H. Kim, Tailoring CO₂ philic properties by amines grafting on chitosan backbone using nonconventional microwave method for dimethyl carbonate synthesis using methanol, *ACS Sustainable Chemistry & Engineering* (submitted 2016 Jan).

Accepted / In print - SCI

1. F.A. Sheikh, R. Appiah-Ntiamoah, A.M. Zargar, J. Chandradass, W.J. Chung, **H. Kim**, Photocatalytic properties using Fe₂O₃ modified rutile TiO₂ nanofibers by electrospinning technique, *Materials Chemistry and Physics* (In print Jan 14, 2016 doi:10.1016/j.matchemphys.2015.12.060).
2. C.P. Lawagon, G.M. Nisola, J. Mun, A. Tron, R.E.C. Torrejos, J.G. Seo, H. Kim, W.J. Chung, Adsorptive Li⁺ mining from liquid resources by H₂TiO₃: Equilibrium, Kinetics, Thermodynamics, and Mechanisms, *Journal of Industrial and Engineering Chemistry* (In Press Jan 25, 2016 doi:10.1016/j.jiec.2016.01.015). 공동

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88. A.H. Tamboli, A.A. Chaugule, **H. Kim**, Highly selective and multifunctional chitosan/ionic liquids catalyst for conversion of CO₂ and methanol to dimethyl carbonates at mild reaction conditions, *Fuel* 166, 495-501 (2016 Feb 15).
87. A.A. Chaugule, A. Tamboli, W.J. Chung, **H. Kim**, Highly efficient synthesis of dimethyl carbonate from methanol and carbon dioxide using IL/DBU/SmOCl as a novel ternary catalytic system, *Catalysis Communications* 75, 87-91 (2015 Feb 5).
86. A. Chinnappan, A. Tamboli, W.J. Chung, **H. Kim**, Green synthesis, characterization, catalytic efficiency of hypercross-linked hypercrosslinked porous polymeric ionic liquid networks towards 4-nitrophenol reduction, *Chemical Engineering Journal* 285, 554-561 (2016 Feb 1).
85. H.J. Yang, Y.J. Cha, **H. Kim**, S.S. Choi, Antifungal activity of nano and micro charcoal particle polymers against *Paecilomyces variotii*, *Trichoderma virens* and *Chaetomium globosum*, *New Biotechnology* 33(1), 55-60 (2016 Jan 25). 공동

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84. A.A. Chaugule, A. Tamboli, W.J. Chung, **H. Kim**, Polyvinyl trisulfonate ethylamine based solid acid catalyst for efficient glycosylation of sugars under solvent free condition, *RSC Advances* 5, 104715 - 104724 (2015 Dec).
83. A. Chinnappan, **H. Kim**, Synthesis of 1-amidoalkyl 2-naphthols using ionic liquid with metal complex as an efficient and reusable catalyst under solvent free conditions, *Journal of Molecular Liquids* 212, 413-417 (2015 Dec).
82. A. Chinnappan, W.J. Chung, **H. Kim**, Hypercross-linked microporous polymeric ionic liquid membranes with high surface area for H₂ generation, *Journal of Materials Chemistry A* 3, 22960-22968 (2015 Nov).
81. A.H. Tamboli, A.A. Chaugule, W.J. Chung, **H. Kim**, Structurally modified cerium doped hydrotalcite-like precursor as efficient catalysts for hydrogen production from sodium borohydride hydrolysis, *Energy* 93, 955-962 (2015 Dec 15).
80. A.A. Chaugule, A.H. Tamboli, F. Sheikh, **H. Kim**, Preparation and application of samarium nickel oxide doped titania nanofiber in hydrogen production from sodium borohydride, *Colloids and Surfaces A: Physicochemical and Engineering Aspects* 484, 242-252 (2015).
79. A.H. Tamboli, A.A. Chaugule, F. Sheikh, W.J. Chung, **H. Kim**, Synthesis and application of CeO₂/NiO loaded titanium oxide nanofiber as a new catalyst for hydrogen production from sodium borohydride hydrolysis, *Energy* 89, 568-575 (2015).
78. A.H. Jadhav, X.T. Mai, R. Appiah-Ntiamoah, H.Y. Lee, F.W.Y. Momade, J.G. Seo, **H. Kim**, Preparation and characterization of palmitoyl grafted cellulose nano adsorbent for the efficient adsorption of pyrene from aqueous solution, *Journal of Nanoscience and Nanotechnology* 15, 7980-7987 (2015).
77. A.H. Jadhav, H. Zhang, F.O. Agyemang, V. Hiremath, K.Y. Lee, H.Y. Lee, J. Chandradass, J.G. Seo, **H. Kim**, Preparation and characterization of electro-spun fabricated TiO₂/Ag composite nanofibers and its enhanced photo-catalytic activity for the degradation of Congo red, *Journal of Nanoscience and Nanotechnology* 15, 7988-7996 (2015).
76. A.H. Tamboli, A.A. Chaugule, **H. Kim**, Synthesis, characterization and application of silica supported ionic liquid as catalyst for reductive amination of cyclohexanone with formic acid: triethyl amine as hydrogen source, *Chinese Journal of Catalysis* 36, 1365-1371 (2015).
75. F.O. Agyemang, F.A. Sheikh, R. Appiah-Ntiamoah, X. Yang, **H. Kim**, A simple fabrication method of electrospun tungsten trioxide nanofibers with enhanced visible-light photocatalytic activity, *Nano-Micro Letters* 7, 291-297 (2015).
74. A. Chinnappan, W.J. Chung, **H. Kim**, Conversion of sugars (sucrose and glucose) into 5-hydroxymethylfurfural in pyridinium based dicationic ionic liquid with chromium chloride as a catalyst, *Industrial Crops and Products* 76, 12-17 (2015).
73. R. Appiah-Ntiamoah, W.J. Chung, **H. Kim**, A highly selective SBA-15 supported fluorescence turn-on sensor for fluoride anion, *New Journal of Chemistry* 39, 5570-5579 (2015).
72. G.M. Nisola, L.A. Limjuco, E.L. Vivas, C.P. Lawagon, M.J. Park, H. Shon, N. Mittal, I.W. Nah, **H. Kim**, W.J. Chung, Macroporous flexible polyvinyl alcohol lithium adsorbent foam composite prepared via surfactant blending and cryo-desiccation, *Chemical Engineering Journal* 280, 536-548 (2015).
71. A. Chinnappan, J.M. Puguán, W.J. Chung, **H. Kim**, Hydrogen generation from the hydrolysis of NaBH₄ using chemically modified MWCNT/IL/Mn nanohybrids, *Journal of Power Sources* 293, 429-436 (2015).
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69. J.M. Puguán, A. Chinnappan, S.V. Kostjuk, **H. Kim**, Zirconium dioxide nanofilled PVDF-HFP complexed with lithium trifluoromethanesulfonate as composite polymer electrolyte for electrochromic devices, *Materials Research Bulletin* 69, 104-111 (2015).
68. R. Appiah-Ntiamoah, A. Jadhav, F. Momade, **H. Kim**, A silica nanoparticle supported fluorescence turn-on fluoride ion sensing system having a structure with tunable structure and sensitivity, *RSC Advances* 15, 30526-30536 (2015).
67. F.O. Agyemang, F.A. Sheikh, R. Appiah-Ntiamoah, J. Chandradass, **H. Kim**, Synthesis and characterization of poly(vinylidene fluoride) - calcium phosphate composite for potential tissue applications, *Ceramics International* 41, 7066-7072 (2015).
66. J.M. Puguán, A. Chinnappan, R. Appiah-Ntiamoah, **H. Kim**, Enhanced ionic conductivity and optical transmissivity of functionalized ZrO₂/PVdF-HFP hybrid electrolyte for energy efficient windows, *Solar Energy Materials and Solar Cells* 137, 265-273 (2015).

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64. A. Chinnappan, A.H. Jadhav, J.M. Puguán, R. Appiah-Ntiamoah, **H. Kim**, Fabrication of ionic liquid/polymer nanoscale networks by electrospinning and chemical cross-linking and their application in hydrogen generation from the hydrolysis of NaBH₄, *Energy* 79, 482–488 (2015).
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62. A. Jadhav, X.T. Mai, F. Agyemang, **H. Kim**, Preparation, characterization and kinetic study of end opened carbon nanotubes incorporated polyacrylonitrile electrospun nanofibers for the adsorption of pyrene from aqueous solution, *Chemical Engineering Journal* 259, 348–356 (2015).

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59. E.E. Arthur, Fang Li, F. Momade, **H. Kim**, Catalytic hydrolysis of ammonia borane for hydrogen generation using cobalt nanoclusters catalyst supported on polydopamine functionalized multiwalled carbon nanotube, *Energy* 76, 822–829 (2014).
58. J.M. Puguán, X. Yu, **H. Kim**, Characterization of structure, physico-chemical properties and diffusion behavior of Ca-Alginate gel beads prepared by different gelation methods, *Journal of Colloid and Interface Science* 432, 109–116 (2014).
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53. A. Jadhav, A. Chinnappan, R.H. Patil, S.V. Kostjuk, **H. Kim**, Green chemical conversion of fructose into 5-hydroxymethylfurfural (HMF) using unsymmetrical dicationic ionic liquids under mild reaction condition, *Chemical Engineering Journal* 243, 92–98 (2014).
52. J.M. Puguán, H.S. Kim, K.J. Lee, **H. Kim**, Low internal concentration polarization in forward osmosis membranes using highly hydrophilic nanofibers as support layer, *Desalination* 336, 24–31 (2014).
51. A. Jadhav, A. Chinnappan, R.H. Patil, S.V. Kostjuk, **H. Kim**, Short oligo ethylene glycolic tailor-made ionic liquids as highly efficient and reusable catalyst for one-pot synthesis of 1,5-benzodiazepine derivatives under solvent free condition, *Chemical Engineering Journal* 240, 228–234 (2014).
50. A. Chinnappan, A. Jadhav, W.J. Chung, **H. Kim**, Ionic liquid with metal complexes: An efficient catalyst for selective dehydration of fructose to 5-hydroxymethylfurfural, *Chemical Engineering Journal* 237, 95–100 (2014).
49. A. Jadhav, A. Chinnappan, R.H. Patil, W.J. Chung, **H. Kim**, Deprotection of *tert*-butyl dimethyl silyl (TBDMS) ethers using efficient and recyclable heterogeneous silver salt of silicotungstic acid catalyst under mild reaction condition, *Chemical Engineering Journal* 236, 300–305 (2014).

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47. A.H. Jadhav, **H. Kim**, Solvent free synthesis of 1,5-benzodiazepine derivatives over heterogeneous silver salt of silicotungstic acid under ambient conditions, *RSC Advances* 3, 5131–5140 (2013).

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43. J. Chandradass, **H. Kim**, F. Momade, Synthesis of ultrafine MgFe₂O₄ nanofibers via electrospinning using sol-gel precursor, *Journal of Sol-Gel Science and Technology* 65, 189–194 (2013).
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36. A.H. Jadhav, **H. Kim**, Short oligo (ethylene glycol) functionalized imidazolium dicationic room temperature ionic liquids: Synthesis, properties, and catalytic activity in azidation, *Chemical Engineering Journal* 200-202, 264-274 (2012).
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microfiltration, *Water Research* 45, 6789-6797 (2011).

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6. R. Appiah-Ntiamoah, T.X. Mai, F.W.Y. Momade, **H. Kim**, Adsorption of benzene from aqueous solution using base modified expanded perlite, *Advanced Materials Research* 622-623, 1779-1783 (2013).
5. A.H. Jadhav, **H. Kim**, Preparation and application of supramolecular assembled β -cyclodextrin/polyacrylonitrile composite nanofibers as a highly efficient adsorbent for dye removal, *Advanced Materials Research* 622-623, 827-832 (2013).
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3. X. Yang, **H. Kim**, Photocatalytic activity of TiO₂ nanotube modified by cobalt, *Applied Mechanics and Materials* 110-116, 559-564 (2012).
2. X. Yang, **H. Kim**, Photocatalytic hydrogen generation of CuO and WO₃ co-loaded TiO₂ nanotubes, *Applied Mechanics and Materials* 110-116, 3781-3785 (2012).
1. X. Yang, **H. Kim**, Improved photoelectrochemical properties of Cu-loaded TiO₂ nanotubes, *Advanced Materials Research* 148-149, 1083-1086 (2011).

RECENT PATENT

7. I.S. Lee, **H. Kim**, S.Y. Moon, Wet type scrubber for exhaust gas capable of maintaining liquid level of chamber, Korean Patent 20-0446764 (Nov. 20, 2009).
6. I.S. Lee, **H. Kim**, M.H. Yang, Wet type scrubber for exhaust gas capable of cleaning eliminator easily, Korean Patent 10-0919817 (Sep. 24, 2009).
5. I.S. Lee, **H. Kim**, M.H. Yang, Method and apparatus for removing nasty smell from exhaust gas using bag filter, Korean Patent 10-0909843 (Jul. 22, 2009).
4. I.S. Lee, **H. Kim**, M.H. Yang, Method and apparatus for treating exhaust gas in order to prevent generation of white smoke, Korean Patent 10-0786638 (Dec. 11, 2007).
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RECENT FUNDED PROJECT

Current Projects

- 2014-2017 *Development of ionic liquid supported nanocomposites for simultaneous capture and conversion of carbon dioxide*, National Research Foundation of Korea (Basic Science Core Program).
- 2013-2020 *Development of energy and environment fusion technology based on organic solid waste*, National Research Foundation of Korea (BK21Plus Program).
- 2009-2018 *Development of biobutanol production technology from brown seaweed by using simultaneous fermentation and separation*, National Research Foundation of Korea (Priority Research Centers Program).
- 2013-2015 *Development of green plastics, rubbers and drug-delivery systems derived from renewable natural resources*, National Research Foundation of Korea (Korea-Belarus International Research & Development Program).

Finished Projects

- 2011-2014 *Development of high-efficient/low-cost functional materials for water purification*, National Research Foundation of Korea (Korea-Africa International Research & Development Program).
- 2013-2014 *Development of technology for complex waste reuse*, Small and Medium Business Administration of Korea (Industry-University Cooperation Program).
- 2011-2014 *Development of advanced fusion technology for green biorefinery*, Myongji University (Green Biorefinery Fusion Center: University Research Program).
- 2010-2013 *Development of new ionic liquids for lignocellulose biomass processing*, Ministry of Knowledge Economy (with Korea Research Institute of Chemical Technology).
- 2010-2013 *Development of direct osmosis membrane/module system for osmotic power generation*, National Research Foundation of Korea (Basic Science Research Program).
- 2009-2012 *Physico-chemical capture and biological fixation of carbon dioxide*, National Research Foundation of Korea (Basic Science Research Program).
- 2007-2009 *Development of functional PVDF membranes by physical and chemical modification*, EcoSTAR Project, Ministry of Environment (with Kolon Co.).
- 2007-2009 *Performance evaluation of hybrid scrubber/filtration system for air pollution control*, Core Environmental Technology R&D Project for Next Generation, Ministry of Environment (with Mirae NET Co.).
- 2006-2007 *Development of advanced materials and processes for oil vapor removal*, Innovation Project, Small and Medium Business Administration (with Daesung Env. Eng. Co.).
- 2006-2007 *Performance evaluation of PVDF braid hollow fiber membranes*, EcoSTAR Project, Ministry of Environment (with Kolon Co.).
- 2004-2006 *Development of membranes and modules for water purification*, EcoSTAR Project, Ministry of Environment (with Kolon Co., SK Chemical Co., Saehan Co.).
- 2004-2006 *Development of fine particulate collection equipment using ceramic cake*, Core Environmental Technology R&D Project for Next Generation, Ministry of Environment (with Daesung Env. Eng. Co.).

CONFERENCE PRESENTATION (2007 - present)

1. Amal Raj, H. Kim, Electrochemical determination of purine derivatives using electrochemically reduced graphene oxide modified electrodes, The Korean Society of Industrial and Engineering Chemistry 2015 Spring Meeting, Busan, Korea, April 30, 2015. Poster
2. Amol Jadhav, H. Bandal, H. Kim, Biomass derived β -cyclodextrin-SO₃H as a solid acid catalyst for synthesis of quinoxaline derivatives, The Korean Society of Industrial and Engineering Chemistry 2015 Spring Meeting, Busan, Korea, April 30, 2015. Poster

3. A. Chinnappan, H. Kim, Ionic liquid used as a reaction medium and catalyst for biginelli reaction, The Korean Society of Industrial and Engineering Chemistry 2015 Spring Meeting, Busan, Korea, April 30, 2015. Poster
4. A. Tamboli, A. Chaugule, H. Kim, Synthesis of Ce-Ni based nanofiber as novel catalyst for hydrogen production from sodium borohydride hydrolysis, The Korean Society of Industrial and Engineering Chemistry 2015 Spring Meeting, Busan, Korea, April 30, 2015. Poster
5. A. Chaugule, A. Tamboli, F. Sheikh, H. Kim, Glycerol functionalized imidazolium tricationic room temperature ionic liquids synthesis and application for 2-azidoalcohol synthesis from epoxide, The Korean Society of Industrial and Engineering Chemistry 2015 Spring Meeting, Busan, Korea, April 30, 2015. Poster
6. F. Sheikh, H. Kim, Electrospun polyvinylidene fluoride nanofibers with superhydrophilicity and improved biocompatibility, The Korean Society of Industrial and Engineering Chemistry 2015 Spring Meeting, Busan, Korea, April 30, 2015. Poster
7. F. Agyemang, J. M. Puguán, F. Li, F. Momade, H. Kim, Fabrication and Characterization of porous PVDF nanofiber as a pre-filter for oil-in-water filtration, The Korean Society of Industrial and Engineering Chemistry 2015 Spring Meeting, Busan, Korea, April 30, 2015. Poster
8. H. Bandal, A. Jadhav, H. Kim, Ni-Ce/ sulphonated carbon nanotube as efficient catalyst for hydrogen generation by hydrolysis of sodium borohydride, The Korean Society of Industrial and Engineering Chemistry 2015 Spring Meeting, Busan, Korea, April 30, 2015. Poster
9. J. M. Puguán, H. Kim, Functionalized ZrO₂ nanofilled PVdF-HFP for enhanced ionic conductivity and optical transmissivity of organic-inorganic hybrid electrolyte membranes, The Korean Society of Industrial and Engineering Chemistry 2015 Spring Meeting, Busan, Korea, April 30, 2015. Poster - *Poster Award*
10. R. Appiah-Ntiamoah, Detection of fluoride anion in water with mesoporous silica supported fluorescence probe, The Korean Society of Industrial and Engineering Chemistry 2015 Spring Meeting, Busan, Korea, April 30, 2015. Poster
11. J.M. Puguán, A. Chinnappan, H. Kim, Zirconium dioxide nanofilled poly(Vinylidene fluoride-hexafluoropropylene) complexed with lithium trifluoromethanesulfonate as composite polymer electrolyte for electrochromic devices, 6th International Symposium on Functional Materials (2014 ISFM), Singapore, August 4-7, 2014.
12. R. Appiah-Ntiamoah, A. Jadhav, H. Kim, Synthesis and application of silica supported fluorescein isothiocyanate (FITC) to detect fluoride ions in organic media, 6th International Symposium on Functional Materials (2014 ISFM), Singapore, August 4-7, 2014.
13. A. Chinnappan, A. Jadhav, S. Kostjuk, H. Kim, Nanofibers in catalysis: ionic liquid nanofibers used as a catalyst for the reduction of nitroarenes, 6th International Symposium on Functional Materials (2014 ISFM), Singapore, August 4-7, 2014.
14. E. Arthur, F. Li, H. Kim, Hydrogen generation with cobalt nanoclusters supported on polydopamine coated multiwalled carbon nanotube (MWCNT) As catalyst by the hydrolysis of ammonia borane, 6th International Symposium on Functional Materials (2014 ISFM), Singapore, August 4-7, 2014.
15. F.O. Agyemang, H. Kim, Preparation of porous PVDF nanofiber with superhydrophobic surface by combined electrospinning and phase separation, 6th International Symposium on Functional Materials (2014 ISFM), Singapore, August 4-7, 2014.
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20. A. Jadhav, H. Kim, Synthesis, characterization, and application of short oligo (ethylene glycol)

- functionalized dicationic room temperature ionic liquids associated with two different cationics and Lewis and Bronsted acidic anions, 44th World Chemistry Congress (2013 IUPAC), Istanbul, Turkey, Aug. 20, 2013.
21. Q. Li, H. Zhang, F. Li, H. Kim, Controlled synthesis of CeO₂ nanostructure via electrospinning and chemical etching, 3rd ICNST (International Conference of Nano Science and Technology), Beijing, China, Sept. 15-16, 2012.
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 39. X. Yang, H. Kim, Improved photoelectrochemical properties of Cu-loaded TiO₂ nanotubes, The International Conference on Advances in Materials and Manufacturing Processes (ICAMMP 2010), Shenzhen, China, Nov. 6-8, 2010.
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53. I-S. Lee, H. Kim, Characterization of multilayer ceramic cake filtration system: collection efficiency, the porosity, and the pressure drop, AIChE Annual Meeting, Pennsylvania Convention Center, Philadelphia, PA, U.S.A., Nov. 16-21, 2008.
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55. Y. Chen, H. Kim, Preparation of composite nanofibers and membranes by electrospinning of PVDF solution containing HPA, AIChE Annual Meeting, Pennsylvania Convention Center, Philadelphia, PA, U.S.A., Nov. 16-21, 2008.
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58. Y. Chen, H. Kim, Preparation and application of sodium borohydride composites for portable hydrogen production, 7th International Conference on Sustainable Energy Technologies, Seoul, Korea, Aug. 24-27, 2008.
59. X. Diao, H. Kim, Compositional Thermal analysis of polymer plastic mixtures, 7th International Conference on Sustainable Energy Technologies, Seoul, Korea, Aug. 24-27, 2008.
60. M.J. Park, H. Kim, Y. Chen, Use of surface-modified nanocomposite for advanced PVDF membrane, AIChE Annual Meeting, Salt Palace Convention Center, Salt Lake City, Utah, U.S.A., Nov. 4-9, 2007.
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City, Utah, U.S.A., Nov. 4-9, 2007.

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65. M.J. Park, H. Kim, Indirect measurement of tensile strength of hollow fiber braid membranes, The Fourth Conference of Aseanian Membrane Society, The Grand Hotel, Taipei, Taiwan, Aug. 16-18, 2007.
66. H. Li, H. Kim, Thermal degradation and kinetic analysis of PVDF/modified MMT nanocomposite membranes, The Fourth Conference of Aseanian Membrane Society, The Grand Hotel, Taipei, Taiwan. Aug. 16-18, 2007.
67. Y. Chen, H. Kim, Hydrogen production via catalytic hydrolysis of sodium borohydride, 2007 The Korean Hydrogen and New Energy Society, Jun. 7-8, 2007.
68. S. Ren, H. Kim, Characterization of calcium phosphate reinforced PVDF composite membrane, Korean Membrane Society, Myongji University, May 25-26, 2007.
69. M.J. Park, H. Kim, TG/DSC and FTIR study on PVDF membranes with alkaline treatment, Korean Membrane Society, Myongji University, May 25-26, 2007.

Current Lab Members

- Dr. Amutha CHINNAPPAN, *Post-doctoral Researcher* - Ionic liquids, Catalysts for biorefinery
- Dr. Faheem A. SHEIKH, *Post-doctoral Researcher* - Functional nanofibers
- Dr. Amal RAJ, *Post-doctoral Researcher* - Functional materials for electrochemical system
- John Marc C. PUGUAN, *PhD Student* - Smart window materials, Forward osmosis membranes
- Richard APPIAH-NTIAMOAH, *PhD Student* - Chemical sensors, Smart window materials
- Frank O. AGYEMANG, *PhD Student* - Functional porous nanofibers
- Ashif H. TAMBOLI, *PhD Student* - Catalysts/ionic liquids for CO₂ capture and utilization
- Avinash A. CHAUGULE, *PhD Student* - Catalysts/ionic liquids for CO₂ capture and utilization
- Amol JADHAV, *PhD Student* - Functional materials for electrochemical system
- Harshad BANDAL, *PhD Student* - Functional materials for electrochemical system
- Gracita Tomboc, *MS Student* - Stimuli responsive materials
- Milki Durano, *MS Student* - Stimuli responsive materials

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