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Assistant Professor, Department of Apparel, Textiles, and Interior Design, Kansas State University
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EDUCATION

- 12.2011 **Global MBA, IE Business School**, Madrid, Spain.
- 12.2005 **Ph.D.** Fiber and Polymer Science, **North Carolina State University**, Raleigh, NC, USA.
Dissertation Title: Investigation on charge deterioration of electrically charged filter media using Electric Force Microscopy/Atomic Force Microscopy
Advisors: Dr. Juan Hinestroza and Dr. Roger Barker
- 02.1999 **M.S.** Clothing and Textiles, **Seoul National University**, Seoul, Korea.
Thesis Title: Effect of non-ionic and anionic mixed surfactants on dry-cleaning detergency
Advisor: Dr. Chung Hee Park
- 02.1996 **B.S.** Clothing and Textiles, **Seoul National University**, Seoul, Korea.
Thesis Title: Effect of cationic additives on an aqueous based detergency system
Advisor: Dr. Chung Hee Park

PROFESSIONAL APPOINTMENTS

- 08.2014-Present Assistant Professor, Department of Apparel, Textiles, and Interior Design, Kansas State University, Manhattan, KS, USA.
- 03.2013-07.2014 Invited Professor, Department of Clothing and Textiles, Ewha Womans University, Seoul, Korea.
- 03.2011-02.2013 Technical Supervisor, Personal Safety Division, APAC Laboratory, 3M, Korea.
- 08.2006-02.2011 Product Development Engineer & Specialist, Personal Safety Division, APAC Laboratory, 3M, Korea.
- 01.2006-05.2006 Post Doctoral Research Associate, Bio-Based Colloids & Materials Lab. (Dr. Orlando Rojas), Forest Biomaterials, North Carolina State University, Raleigh, NC, USA.

RESEARCH INTEREST

- Anti-fouling fibers
- Air-filtration
- Fiber-based drug delivery

JOURNAL PUBLICATIONS

- J.W. Yoon, Y. Park, **J. Kim**, C.H. Park*, Multi-jet electrospinning of polystyrene/polyamide 6 blend-thermal and mechanical properties-, *Fashion and Textiles*, In Press.
- S.O. Kwon, **J. Kim**, M.W. Moon, C.H. Park*, Nanostructured Superhydrophobic Lyocell Fabrics with Asymmetric Moisture Absorbency: Moisture managing properties, *Textile Research Journal*, Online first published. doi: 10.1177/0040517516639832 (2016).
- C. Yun, S. Patwary, M. LeHew, **J. Kim***, Sustainable care of textile products and its environmental impact: tumble-drying and ironing processes, *Fibers and Polymers*, 18, 590-596 (2017).
- Y. Yuan, M. Hays, P. Hardwidge, **J. Kim***, Surface characteristics influencing bacterial adhesion to polymeric substrates, *RSC Advances*, 7, 14254-14261 (2017).
- S. Park, **J. Kim**, C.H. Park*, Influence of micro and nano-scale roughness on hydrophobicity of a plasma-treated

woven fabric, *Textile Research Journal*, 87, 193-297 (2017).

K. Doty*, S. Haar, **J. Kim**, Black walnut, Osage orange and eastern redcedar sawmill waste as natural dyes: effect of aluminum mordant on color parameters, *Fashion and Textiles*, 3, 22 (2016).

C. Yun, M. Islam, M. LeHew, **J. Kim***, Assessment of environmental and economic impacts made by the reduced laundering of self-cleaning fabrics, *Fibers and Polymers*, 17, 1296-1304 (2016).

Y. Yuan, S.-O. Choi, **J. Kim***, Analysis of contact area between water and irregular fibrous surface for prediction of wettability, *RSC Advances*, 6, 73313-73322 (2016).

S. Park, **J. Kim**, C.H. Park*, Analysis of wetting state for super-repellent fabrics to liquids in varied surface tensions, *RSC Advances*, 6, 45884-45893 (2016).

J. Kim, H. Kim, C.H. Park*, Contribution of surface energy and roughness to the wettability of nylon 6 and polypropylene film in the plasma-induced process, *Textile Research Journal*, 86, 461-471 (2016).

S. Park, **J. Kim**, C.H. Park*, Superhydrophobic textiles: review of theoretical definitions, fabrication, and functional evaluation, *Journal of Engineered Fibers and Fabrics*, 10, 1-18 (2015).

H.R. Han, S.E. Chung, **J. Kim**, C.H. Park*, Mechanical and physicochemical contribution in removal of different soil types: oil, protein and their mixture, *Textile Research Journal*, 85, 2009-2019 (2015).

J. Kim, Y. Park, C. Yun, C.H. Park*, Comparison of Environmental and Economic Impacts Caused by the Washing Machine Operation of Various Regions, *Energy Efficiency*, 8, 905-918 (2015).

S.O. Kwon, C.H. Park, **J. Kim***, Breathable, antistatic and superhydrophobic PET/Lyocell fabric, *Journal of Engineered Fibers and Fabrics*, 10, 46-56 (2015).

J. Kim, C. Yun, Y. Park, C.H. Park*, Post-consumer energy consumption of textile products during 'use' phase of the lifecycle, *Fibers and Polymers*, 16, 926-933 (2015).

M.H. Shim, **J. Kim**, C.H. Park*, Development of superhydrophobic fabrics by surface fluorination and formation of CNT-induced roughness, *Materials Science, Medziagotyra*, 21, 68-73 (2015).

S.O. Kwon, T.J. Ko, E. Yu, **J. Kim**, M.W. Moon, C.H. Park*, Nanostructured self-cleaning lyocell fabrics with asymmetric wettability and moisture absorbency (part I), *RSC Advances*, 4, 45442-45448 (2014).

Y. Park, C.H. Park, **J. Kim***, A quantitative analysis on the surface roughness and the level of hydrophobicity for superhydrophobic ZnO nanorods grown textiles, *Textile Research Journal*, 84, 1766-1788 (2014).

M.H. Shim, **J. Kim**, C.H. Park*, The effects of surface energy and roughness on the hydrophobicity of woven fabrics, *Textile Research Journal*, 84, 1268-1278 (2014).

H. Jung, J. Kim, S. Lee, J. Lee, **J. Kim**, P. Tsai, C. Yoon*, Comparison of filtration efficiency and pressure drop in anti-yellow sand masks, quarantine masks, medical masks, general masks, and handkerchiefs, *Aerosol and Air Quality Research*, 14, 991-1002 (2014).

J.H. Woo, **J. Kim***, C.H. Park*, Contributing ratio of the mechanical and the physicochemical actions to washing efficiency of oily and protein soils, *Fibers and Polymers*, 15, 645-652 (2014).

H.J. Lee, **J. Kim**, C.H. Park*, Fabrication of self-cleaning textiles by TiO₂-CNT treatment, *Textile Research Journal*, 84, 267-278 (2014).

S. Park, C. Yun, **J. Kim**, C.H. Park*, The effects of the fabric properties on fabric movement and the prediction of the fabric movements in a front-loading washer, *Textile Research Journal*, 83, 1201-1212 (2013).

J. Kim, J. Hinestroza, W. Jasper, R. Barker*, Application of electrostatic force microscopy on characterizing an electret fiber: Effect of tip to specimen distance on phase shift, *Fibers and Polymers*, 12, 89-94 (2011).

Y. Lim, C.H. Park*, **J. Kim**, Hair conditioning effect of amino silicone softeners in varied treatment conditions, *Fibers and Polymers*, 11, 507-515 (2010).

J. Kim, G. Montero, Y. Habibi, J. Hinestroza, J. Genzer, D. Argyropoulos, O. Rojas*, Dispersion of cellulose crystallites by nonionic surfactants in a hydrophobic polymer matrix, *Polymer Engineering and Science*, 49, 2054-2061 (2009).

S. Zhang, W. Shim*, **J. Kim**, Design of ultra-fine nonwovens via electrospinning of Nylon 6: Spinning parameters and filtration efficiency, *Materials and Design*, 30, 3659-3666 (2009).

Y.K. Kang, C.H. Park*, **J. Kim**, T.J. Kang, Application of electrospun polyurethane web to breathable water-proof fabrics, *Fibers and Polymers*, 8, 564-570 (2007).

S.K. Obendorf*, **J. Kim**, R.R. Koniz, Measurement of odor development due to bacterial action on antimicrobial polyester fabrics, *AATCC Review*, 7, 35-40 (2007).

J. Kim, W. Jasper, J. Hinestroza*, Direct probing of solvent-induced charge degradation in polypropylene electret fibers via electrostatic force microscopy, *Journal of Microscopy*, 225, 72-79 (2007).

J. Kim, W. Jasper, J. Hinestroza*, Charge characterization of an electrically charged fibre via Electrostatic Force Microscopy, *Journal of Engineered Fibers and Fabrics*, 1, 30-46 (2006).

W. Jasper*, J. Hinestroza, A. Mohan, **J. Kim**, M. Gunay, R. Barker, T. Donaldson, Effect of xylene exposure on the performance of electret filter media, *Journal of Aerosol Science*, 37, 903-911 (2006).

A.T. Lemley*, A. Hedge, S.K. Obendorf, S. Hong, **J. Kim**, T.M. Muss, C.J. Varner, Selected pesticide residues in house dust from farmers' homes in central New York state, USA, *Bulletin of Environmental Contamination and Toxicology*, 69, 155-163 (2002).

S. Hong, **J. Kim**, A.T. Lemley, S.K. Obendorf, A. Hedge*, Analytical method development for 18 pesticides in house dust and settled residues using SEC, SPE, TMS methylation, and GC-MS, *Journal of Chromatographic Science*, 39, 101-112 (2001).

J. Kim, C. Park*, Detergency and soil redeposition in a drycleaning system-the effect of surfactants and their mixing, *한국이류학회지* [*Journal of Korean Society of Clothing and Textiles*], 23, 1030-1039 (1999).

* Corresponding author

BOOK CHAPTERS

J. Kim and S.-O. Choi, "Superhydrophobicity," in *Waterproof and Water Repellent Textiles and Clothing*, John T. Williams (Ed.), Oxford, UK: Elsevier, In Preparation.

INVITED PRESENTATIONS

J. Kim, Advanced fibers for health and environment applications, 3M Tech Forum Nonwovens Mini-Chapter, June 2 (2016).

PRESENTATIONS / PROCEEDINGS

Conference oral presentations

Y. Park, C. Yun, **J. Kim***, C.H. Park, Cross-national comparison of environmental impacts caused by electricity and water consumption during washing machine operations, ITAA-KSCT Joint Symposium, Hilton Charlotte Center City, Charlotte, USA, Nov 12-16 (2014).

H. Jung, S. Lee, J. Lee, **J. Kim**, P. Tsai, C. Yoon*, Filtration Efficiency, Pressure Drop and Total Inward Leakage in Anti-Yellow Sand Masks, Quarantine Masks, Medical Masks, General Masks, ISRP 17th International Conference, Hilton Hotel Old Town Prague, Prague, Czech Republic, Sep 21-25 (2014).

Y. Park*, **J. Kim**, C.H. Park, Analysis on the superhydrophobicity of ZnO nanorods grown textiles- focused on the surface roughness, Korean Society of Clothing and Textiles Spring Conference, Seoul National University, Seoul, Korea, April 19 (2014).

S.O. Kwon*, T.J. Ko, E.U. Yu, **J. Kim**, M.W. Moon, C.H. Park, Moisture management properties of superhydrophobic lyocell fabric, *The Korean Fiber Society*, 2013 Fall Conference, Welli Hilli Park, Hoengseong, Korea, Oct 17-18 (2013).

H.J. Jung*, **J. Kim**, S.J. Lee, J.H. Lee, C.S. Yoon, Evaluation of yellow sand masks and quarantine masks by

face seal leakage rate, *Korea Industrial Hygiene Association, 2013 Spring Conference*, Changwon, Korea, Apr 11-12 (2013).

J. Kim, G. Montero*, X. Wang, D. Argyropoulos, J. Genzer, J. Hinestroza, O. Rojas, Cellulose-loaded polystyrene composites: effect of sorbitan monostearate and production of nanofibers and nanostructures for new generation multifunctional materials, *233rd American Chemical Society National Meeting*, Chicago, IL, March 25-29 (2007).

* Presenter

Conference poster presentations

Y. Yuan, S-O. Choi, **J. Kim**, Influence of electrospun morphology on superhydrophobicity, *International Textile and Apparel Association (ITAA) 2016 Annual Conference*, Vancouver, BC, Canada, Nov 8-11 (2016).

Y. Yuan, S-O. Choi, **J. Kim**, Characterization of wetted surface area from superhydrophobic polystyrene web, *51st American Chemical Society (ACS) Midwest Regional Meeting (MWRM)*, Manhattan, KS, USA, Oct 26-28 (2016).

Y. Yuan, S-O. Choi, **J. Kim**, Analysis of water contact area on a superhydrophobic web, *The Fiber Society 2016 Fall Meeting and Technical Conference*, Cornell University, USA, Oct 11-12 (2016).

C. Yun, I. Islam, M. LeHew, **J. Kim**, Assessment method for environmental and economic impacts of self-cleaning fabrics during maintenance phase, *The Fiber Society 2015 Fall Meeting and Technical Conference*, North Carolina State University, USA, Oct 28-30 (2015).

J. Kim, H.S. Kim, C.H. Park, Contribution of surface energy and roughness to the wettability of polyamide 6 and polypropylene film in the plasma-induced process, *The Fiber Society 2015 Fall Meeting and Technical Conference*, North Carolina State University, USA, Oct 28-30 (2015).

H.R. Han, S.E. Chung, **J. Kim**, C.H. Park, Mechanical and Physicochemical Washing Contribution on the Removal of Various Soil Types, *The Korean Society of Clothing and Textiles Fall Conference*, Incheon University-Songdo Campus Convention Center, Korea, Oct 17 (2015).

J. Kim, C. Yun, Y. Park, C.H. Park, Sustainability indexes of textile products focused on 'use' phase of the life cycle, *The Korean Home Economics Association 68th Spring Conference*, Yonsei University, Seoul, Korea, April 25 (2015).

H. Kim, **J. Kim**, C.H. Park, Superhydrophobicity of nylon 6 and polypropylene film in plasma-induced process, *The Korean Fiber Society Spring Conference*, Seoul National University, Seoul, Korea, April 23-24 (2015).

H. Kim, **J. Kim**, C.H. Park, The contributing effect of plasma treatment on nylon 6 and polypropylene film, *Materials Today Asia*, Hong Kong, China December 9-12 (2014).

Y. Park, **J. Kim**, C. Yun, C.H. Park, Estimation of energy consumption during textile maintenance for sustainable post-consumer guidance, *The Korean Society of Clothing and Textiles 38th Spring Conference*, Seoul National University, Seoul, Korea, April 19 (2014).

GRANTS & AWARDS

(Received)

(\$30,000) **J. Kim**, 3M Non-Tenured Faculty Award (2016.03.01-2018.02.28).

(\$30,000) J. Ha-Brookshire, C. Freeman, **J. Kim**, L. McAndrews, P. Norum, B. Jin, E. Karpova, M. LeHew, S. Marcketti, Development of case studies for morally responsible agricultural product supply chain education (MoRAPSC), Higher Education Challenge Grant, *US Department of Agriculture* (02.01.2017-01.31.2019).

(\$5,000) **J. Kim**, Nonwoven antibacterial patch for local wound treatment, College of Human Ecology Sponsored Research Overhead Award (CHE-SRO), *Kansas State University* (07.01.2016-06.30.2017).

(\$15,000) **J. Kim**, Multi-drug-loaded nanofibers for postsurgical local treatment of melanoma skin cancer,

Innovation Research Award, *Johnson Cancer Research Center*, Kansas State University (04.01.2016-03.31.2017).

(\$5,000) **J. Kim**, S-O. Choi, Breathable omniphobic nanoweb fabrication via electrospinning and plasma process, University Small Research Grant (USRG), *Kansas State University* (12.01.2015-11.30.2016).

(\$14,981) J. Day, S. Eckels, **J. Kim**, C. Manzo, Net zero energy air filtration: innovative filter media applications for improved indoor air quality and energy efficiency, 12th Annual P3 Award, *US Environmental Protection Agency* (11.01.2015-10.31.2016).

(\$4,600) **J. Kim**, J. Jang, Environmental and economic impacts made by the reduced maintenance needs for self-cleaning table cloths in the hotel restaurant context, College of Human Ecology Sponsored Research Overhead Award (CHE-SRO), *Kansas State University* (07.01.2015-06.30.2016).

(\$2,310) **J. Kim**, Research collaboration with Seoul National University and partnership building with universities in China, International Incentive Grant, *Kansas State University* (06.01.2015-06.30.2015).

(\$1,000) **J. Kim**, Quantitative method development for assessing functional sustainability of self-cleaning textiles, University Small Research Grant (USRG), *Kansas State University* (01.01. 2015-12.01.2015).

(\$1,200) **J. Kim**, Invitation of Professor Stephen Michielsen at North Carolina State University, ADVANCE Distinguished Lecture Series (ADLS) Award sponsored by the Office for the K-State Advancement of Women in Science and Engineering (KAWSE), *Kansas State University* (05.07-05.08.2015).

(Pending)

(\$299,314) J. Li, **J. Kim**, Manufacturing Self-standing 3D Nanostructured Hybrid Electrodes for High-performance Electrical Energy Storage Using Engineered Electrospun Carbon Nanofibers, *National Science Foundation Nanomanufacturing* (07.01.2017-06.30.2020).

TEACHING

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|---|--|--|---|
| 08.2014-Present Kansas State University | (Undergraduate) (Undergraduate) (Graduate) | AT 460 AT 265 AT 880 | Apparel and Textile Evaluation Textiles Textile Sustainability |
| 01.2015-05. 2016 Kansas State University | (Undergraduate) | AT 340 | Aesthetics of Apparel and Textiles |
| 03.2013-06.2014 Ewha Womans University | (Undergraduate) (Undergraduate) (Undergraduate) (Undergraduate) (Graduate) (Graduate) | 33818 33827 33824 37380 G11117 G11320 | Textile Properties and Dyeing Practice Sensibility Fabric Design and Evaluation Textiles for Clothing and Human Introduction to Clothing & Textiles II Textile Material Science Bio-Compatible Novel Textile Materials |

HONORS & NOMINATIONS

- 3M Non-Tenured Faculty Award (2016).
- Golden Step Award for “China Reusable Respirator Filter 3701CN Upgrade for Tier B/C Market” program (given to the successful product commercialization with the 3-year rolling sales greater than 10 Million US Dollars), 3M OHESD (2011).
- Golden Step Award for “China Dragon new design-chin fold for Tier B/C market” program (given to the successful product commercialization with the 3-year rolling sales greater than 10 Million US Dollars), 3M OHESD (2010).
- Asia Pacific Quarterly Technical Excellence Award, 3M, 2nd Quarter (2010).
- Member of the Honor Society of Phi Kappa Phi, North Carolina State University (2004).
- Herbert and Lillian Powell Fellowship from College of Human Ecology, Cornell University (2001).
- Mary Purchase Fund Fellowship from College of Human Ecology, Cornell University (2000-2001).

- Lever Brothers Company Scholarship from AOCS (The American Oil Chemists' Society) Foundation (2001).

PROFESSIONAL AFFILIATION

Editorial Board for the Korean Society of Clothing and Textiles (KSCT)

Editorial Board for the Korean Society of Fashion Business, Journal of Fashion Business

Member of American Chemical Society (ACS)

Member of the Fiber Society

Member of International Textile and Apparel Association (ITAA)