Curriculum Vitae

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RESEARCH INTERESTS

- Materials: Metal oxides, CNT, Graphene, Carbon nanofiber, Silver nanowire
- Electronics thermal management (cooling and heating), Heater, Thermal barrier & electrical insulation
- Metal line electrodes, Transparent conducting electrodes, Wearable & flexible electronics
- Spray coating: Inkjet printing, Electrospraying, Electrospinning, Cold spraying, Aerosol deposition
- Surface modification (superhydrophobic & superhydrophilic), Self-cleaning
- Self-healing for composite materials
- Water splitting for hydrogen production, Photocatalysis
- Carbon reduction and hydrocarbon production via electrochemistry
- Fluid mechanics, Computational fluid dynamics

EDUCATION

Doctor of Philosophy in Aeronautics & Astronautics, Dec. 2002
Purdue University, West Lafayette, Indiana
Thesis: A fully nonlinear primary atomization model of high-speed jets
Advisor: Prof. Stephen D. Heister
Major: Propulsion Minor: Aerodynamics

Master of Science in Aeronautics & Astronautics, Aug. 1999
Purdue University, West Lafayette, Indiana
Thesis: Simulation of nonlinear dynamics of charged liquids using boundary element methods
Advisor: Prof. Stephen D. Heister
Major: Propulsion Minor: Aerodynamics

Bachelor of Science in Mechanical Engineering, May 1997
Colorado School of Mines, Golden, Colorado
Advisor: Prof. Jin S. Chung
Senior Dissertation: Experimental investigation of multiphase flow of ocean mining pipe system

EMPLOYMENT

- 2014/Sept to Present: **Professor**, School of Mech. Eng., ***Korea Univ***., Seoul, Korea
- 2009/Sept to 2014/Aug: **Associate Professor**, School of Mech. Eng., ***Korea Univ***., Seoul, Korea.
- 2011/July to 2012/July: **Visiting Scholar**, Process Tech. & Adv. Concepts, ***National Renewable Energy Lab***, Golden, Colorado
- 2005/Sept to 2009/Aug: **Assistant Professor**, Mech. Eng. Dept., ***Korea Univ***., Seoul, Korea.
- 2009/Jan to 2009/Feb: **Visiting Scholar**, Fire & Aerosol in ***Sandia National Lab***, Albuquerque, New Mexico
- 2008/Jan to 2008/Feb: **Visiting Scholar**, Fire & Aerosol in ***Sandia National Lab***, Albuquerque, New Mexico
- 2007/Jan to 2007/Feb: **Visiting Scholar**, Fire Science & Technology in ***Sandia National Lab***, Albuquerque, New Mexico
- 2003/Jan to 2005/Aug: **Post Doctoral Fellow**, Eng. Science Center, Fire Science & Technology (9132) in ***Sandia National Lab***
- 1997/Aug to 2002/Dec: **Research Assistant**, ***Purdue Univ***., Numerical/computational modeling of fully nonlinear primary atomization by finite difference/volume methods and boundary element methods.
- 2001/Jan to 2001/May: **Graduate Instructor**, School of Aero. & Astro., ***Purdue Univ***., Sole instructor for junior/senior level airbreathing propulsion class of 50 students; topics included thermodynamics, compressible flows, turbojet, turbofan, and (sc)ramjet, Received a student rating of 4.6/5.0

- 1999/Aug to 1999/Dec: **T**EACHING **A**SSISTANT, School of Aero. & Astro., ***Purdue Univ***., Senior level class, Graded and helped 35 students on liquid/solid rocket applications, Performed experimental simulation of solid rocket motor using prototypes.
- 1996/Jan to 1997/Apr: **R**ESEARCH **A**SSISTANT, Mech. Eng., ***Colorado School of Mines***, Designed a pipe system for ocean mining applications
- 1996/Jan to 1997/Apr: **T**EACHING **A**SSISTANT, Mech. Eng., ***Colorado School of Mines***, Junior/senior level class, Graded and helped 80 students on fundamentals of incompressible fluids.

AWARD

- Young Investigator Award 2012, Korean Society of Mechanical Engineers, Thermal Eng. Division.
- Center for Advanced Engineering & Science Research Award, Korea University, April, 2012
- KUCE Crimson Professorship, Nov. 1st 2011 – Oct. 31st, 2014
- Granite Teaching Award, 석탑강의상 (2005-Fall, 2007-Spring, 2009-Spring, 2009-Fall(*twice*), 2010-Fall, 2012-Fall)
- Granite Research Award, 석탑연구상 (2016, 2017)
- Purdue Forever Fellowship (2001)

PUBLICATIONS

Refereed Journals

1. CS Ahn, Experimental studies on black tethered balloons for pollutant removal on large scale using solar energy, ***Building and Environment***, under preparation
2. CS Ahn, Theoretical studies on black tethered balloons for pollutant removal on large scale using solar energy, ***Building and Environment***, under preparation
3. CS Ahn, BH Bang, MW Kim, HS Jo, AL Yarin, **SS Yoon***, Experimental investigation on turbulent smoke rise in open and confined areas, ***Combustion and Flames***, under preparation
4. CS Ahn, BH Bang, MW Kim, HS Jo, AL Yarin, **SS Yoon***, Numerical investigation on wall effect on smoke rise in high rise buildings in comparison with jet theory, ***Int. J. Thermal Sciences***, under preparation
5. CS Ahn, BH Bang, MW Kim, HS Jo, AL Yarin, **SS Yoon***, Theoretical and numerical investigation on smoke dynamics in high rise buildings, ***Int. J. Thermal Sciences***, submitted
6. BH Bang, CS Ahn, YT Kim, MH Lee, MW Kim, AL Yarin, **SS Yoon***, Deflagration-to-detonation transition in pipes: The analytical theory, ***Computational Mechanics***, submitted
7. JG Lee, TG Kim, CW Park, MV Hest, DH Cho, YD Jeong, **SS Yoon***, Effect of supersonic speed on self-fused nanowires transparent conducting film on flexible polyimide substrates, ***Journal of Alloy and Compound***, submitted
8. JG Lee, TG Kim, CW Park, JH Choi, SC James, MS Choi, WY Kim, JS Yang, KH Kim, **SS Yoon***, Scalable, flexible thermal barrier layers by supersonic spraying clay, silica, and aerogel micro-particles, ***Powder Technology***, submitted
9. MW Kim, SP An, KR Kim, DH Park, **SS Yoon***, AL Yarin, Packing of metalized polymer nanofibers for aneurysm embolization, ***Advanced Functional Materials***, submitted
10. MW Kim, JG Lee, HS Jo, TG Kim, SC James, MS Choi, WY Kim, JS Yang, JH Choi, **SS Yoon***, Nano-textured surfaces using hybrid micro- and nano-materials for efficient water cooling, ***Int. J Thermal Sciences***, submitted
11. MW Lee, SP An, **SS Yoon***, AL Yarin, Advances in self-healing materials based on polymer nanofibers, ***Advances in Colloid and Interface Science***, submitted
12. SP An, YI Kim, JY Yoon, AL Yarin, **SS Yoon***, Wetting of inclined nano-textured surfaces by self-healing agents, ***Applied Physics Letters***, submitted
13. SP An, MW Lee, AL Yarin, **SS Yoon***, Corrosion-protective extrinsic self-healing: comparison of microcapsule-based systems and those based on core-shell vascular networks, ***Journal of Material Chemistry A***, submitted
14. HS Jo, MW Kim, SP An, HG Park, JG Lee, TG Kim, SC James, JH Choi, **SS Yoon***, Effect of supersonically-sprayed frustum-pyramid pillars on pool boiling enhancement, ***Applied Thermal Engineering***, submitted
15. HS Jo, JG Lee, TG Kim, HG Park, SC James, JH Choi, **SS Yoon***, Pool boiling of nanotextured surfaces via supersonic spraying silver nanowires, ***Int. J. Thermal Sciences***, submitted
16. JH Hong, SP An, KY Song, MW Lee, JJ Kim, AL Yarin, **SS Yoon***, Eco-friendly lignin nanofiber for wood protection against environmentally hazardous fungi attacks, ***Journal of Wood Chemistry and Technology,*** submitted
17. E Samuel, PU Londhe, BN Joshi, MW Kim, KR Kim, SR Park, MT Swihart, NB Chaure, **SS Yoon***, Electrosprayed graphene decorated with ZnO nanoparticles for supercapacitors, ***Journal of Alloy and Compound***, submitted
18. BN Joshi, E Samuel, MW Kim, SR Park, MT Swihart, WY Yoon, **SS Yoon***, Atomic layer deposited TiO_2-SnZnO/carbon nanofibers as highly stable, flexible, freestanding lithium-ion-battery anodes, ***Chemical Engineering Journal***, submitted
19. BN Joshi, SR Park, E Samuel, HS Jo, SP An, MT Swihart, JM Yun, KH Kim, **SS Yoon***, Zeolitic imidazolate framework-7 textile-derived nanocomposite fibers as freestanding electrode for supercapacitor, ***Applied Surface Science***, submitted
20. C Sun, L Rotundo, C Garino, L Nencini, **SS Yoon**, R Gobetto, Carlo Nervi, Electrochemical CO2 reduction at glassy carbon electrodes functionalized by Mn^{I} and Re^{I} organometallic complexes, ***ChemPhysChem***, published online
21. MW Lee, SP An, YI Kim, **SS Yoon***, AL Yarin, Self-healing three-dimensional bulk materials based on core-shell nanofibers, ***Chemical Engineering Journal***, published online
22. SP An, YI Kim, MW Kim HS Jo, MT Swihart, AL Yarin, **SS Yoon***, Oxidation-resistant metallized nanofibers as transparent conducting film and heater, ***Acta Materialia***, published online

23. MW Kim, KR Kim, TY Eom, BN Joshi, E Samuel, MT Swihart, SK Choi, HW Park, **SS Yoon***, Electrosprayed $BiVO_4$ nanopillars coated with atomic-layer-deposited ZnO/TiO_2 as highly efficient photoanodes for solar water splitting, ***Chemical Engineering Journal***, published online
24. JG Lee, SP An, TG Kim, AL Yarin, **SS Yoon***, Self-cleaning anti-condensing glass via supersonic spraying of silver nanowires, silica, and polystyrene nanoparticles, ***ACS Applied Materials & Interface***, 9, 35325-35332, 2017
25. SP An, YI Kim, MW Lee, AL Yarin, **SS Yoon***, Wetting and coalescence of self-healing droplets on non-woven hydrophilic electrospun polyacrylonitrile nanofiber mats, ***Langmuir***, 33, 10663-10672, 2017
26. HS Jo, SP An, XH Nguyen, YI Kim, SC James, JH Choi, **SS Yoon***, Modifying capillary pressure and boiling regime of micro-porous wicks textured with graphene oxide, ***Applied Thermal Engineering***, 128, 1605-1610, 2018
27. BN Joshi, E Samuel, HS Jo, YI Kim, SR Park, MT Swihart, WY Yoon, **SS Yoon***, Carbon nanofibers loaded with carbon nanotubes and iron oxide as flexible freestanding lithium-ion battery anodes, ***Electrochimica Acta***, 253, 479-488, 2017
28. E Samuel, BN Joshi, HS Jo, YI Kim, MT Swihart, JM Yun, Kwang Ho Kim, **SS Yoon***, Flexible and freestanding core-shell SnO_x/carbon nanofiber mats for high-performance supercapacitors, ***Journal of Alloy and Compound***, 728, 1362-1371, 2017
29. BH Bang, JY Kim, KH Baek, SS Al-Deyab, AL Yarin, **SS Yoon***, Analytical and numerical assessments of local overpressure from hydrogen gas explosions in petrochemical plants, ***Fire and Materials***, 41, 587-597, 2017
30. BN Joshi, JG Lee, E Samuel, TG Kim, IW Seong, WY Yoon, **SS Yoon***, Supersonically blown reduced graphene oxide intertwined Fe-Fe_3C nanofibers for lithium ion battery anodes, ***Journal of Alloy and Compound***, 726, 114-120, 2017
31. MW Kim, KR Kim, TY Ohm, BN Joshi, E Samuel, H. Yoon, HW Park, **SS Yoon***, Mo-doped $BiVO_4$ nanotextured-pillars as highly efficient photoanodes for solar water splitting, ***Journal of Alloy and Compound***, 726, 1-9, 2017
32. SP An, BN Joshi, JG Lee, MW Lee, YI Kim, MW Kim, HS Jo, **SS Yoon***, A comprehensive review on wettability, desalination, and purification of graphene at water interfaces, ***Catalysis Today***, 295, 14-25, 2017
33. E Samuel, BN Joshi, HS Jo, YI Kim, SP An, MT Swihart, JM Yun, KH Kim, **SS Yoon***, Carbon nanofibers decorated with FeO_x nanoparticles as a flexible electrode material for symmetric supercapacitors, ***Chemical Engineering Journal***, 328, 776-784, 2017
34. HS Jo, MW Kim, SP An, GR Kim, SC James, JH Choi, **SS Yoon***, Effect of capillarity on pool boiling using nanotextured surfaces by electrosprayed BiVO4 nanopillars, ***Chemical Engineering Science***, 171, 360-367, 2017
35. SP An, HS Jo, YI Kim, KY Song, MW Kim, KB Lee, AL Yarin, **SS Yoon***, Bio-inspired colorful, flexible, defrostable light-scattering hybrid films for effective distribution of LED Light, ***Nanoscale***, 9, 9139-9147. 2017
36. E Samuel, BN Joshi, HS Jo, HG Park, YI Kim, SP An, MT Swihart, JM Yun, Kwang Ho Kim, **SS Yoon***, High-performance supercapacitors using flexible and freestanding MnO_x/carbamide carbon nanofibers, ***Applied Surface Science***, 423, 210-218
37. SP An, HS Jo, YI Kim, KY Song, MW Kim, KB Lee, AL Yarin, **SS Yoon***, Silver-decorated and palladium-coated copper-electroplated fibers derived from electrospun polymer nanofibers, ***Chemical Engineering Journal***, 327, 336-342, 2017
38. JG Lee, BN Joshi, SP An, JS Lee, YK Hwang, JS Chang, **SS Yoon***, Supersonically sprayed gas- and water-sensing MIL-100(Fe) films, ***Journal of Alloy and Compound***, 722, 996-1001, 2017
39. HS Jo, JG Lee, TG Kim, SP An, SC James, JH Choi, **SS Yoon***, Supersonically sprayed, triangular copper lines for pool boiling enhancement, ***Int. J. Heat & Mass Transfer***, 113, 210-216, 2017
40. BH Bang, CS Ahn, JG Lee, MH Lee, B Horn, D Malik, K Thomas, SC James, AL Yarin, **SS Yoon***, Theoretical, numerical, and experiment investigation on pressure rise due to deflagration in confined spaces, ***Int. J. Thermal Sciences***, 120, 469-480, 2017
41. JG Lee, DY Kim, JH Lee, HG Park, SS Al-Deyab, HW Lee, JS Kim, DH Yang, AL Yarin, **SS Yoon***, Supersonically sprayed copper-nickel nanoparticles as flexible printable thin-film high-temperature heaters on complex surfaces, ***Advanced Materials Interfaces***, 1700075, 2017
42. MW Lee, S. Sett, SP An, **SS Yoon***, AL Yarin, Mode I crack propagation in core-shell nanofiber mats with liquid in the cores, ***ACS Applied Materials & Interface***, 9, 27223-27231, 2017
43. MW Lee, HS Jo, **SS Yoon***, AL Yarin, Thermally-driven self-healing using copper nanofiber (CuNF) heater, ***Applied Physics Letters***, 111, 011902, 2017
44. E Samuel, BN Joshi, JG Lee, JH Lee, TG Kim, SS Al-Deyab, MT Swihart, WY Yoon, **SS Yoon***, Supersonic cold spraying titania nanoparticles with reduced graphene oxide for lithium ion battery anodes, ***Journal of Alloy and Compound***, 715, 161-169, 2017
45. MW Lee, AL Yarin, **SS Yoon***, Release of self-healing agents in a material: What happens next?, ***ACS Applied Materials & Interface***, 9, 17449-17455, 2017
46. SP An, YI Kim, S Sinha-Ray, MW Kim, HS Jo, AL Yarin, **SS Yoon***, Facile processes for producing robust, transparent, conductive platinum nanofiber mats, ***Nanoscale***, 9, 6076-6084, 2017
47. MW Kim, BN Joshi, HS Jo, TY Eom, KR Kim, **SS Yoon***, Eletrosprayed copper hexaoxodivanadate (CuV_2O_6) and pyrovanadate ($Cu_2V_2O_7$) photoanodes for efficient solar water splitting, ***Journal of Alloy and Compound***, 708, 444-450, 2017
48. HS Jo, SP An, HG Park, MW Kim, SS Al-Deyab, SC James, JH Choi, **SS Yoon***, Enhancement of critical heat flux and superheat through controlled wettability of cuprous-oxide fractal-like nanotextured surfaces in pool boiling, ***Int. J. Heat & Mass Transfer***, 107, 105-111, 2017
49. HK Choi, JG Lee, XD Mai, **SS Yoon***, SH Jeong, Spray supersonically spray coated colloidal PbS quantum dot ink solar cells, ***Scientific Report***, 7, 622, 2017
50. JG Lee, JH Lee, SP An, DY Kim, TG Kim, SS Al-Deyab, AL Yarin, **SS Yoon***, Highly flexible, stretchable, wearable, patternable, transparent heaters on complex 3D surfaces formed from supersonically sprayed silver nanowires, ***Journal of Material Chemistry A***, 5, 6677-6685, 2017

51. E Samuel, HS Jo, BN Joshi, HG Park, IW Seong, WY Yoon, **SS Yoon***, Decoration of MnO nanocrystals on flexible freestanding carbon nanofibers for lithium ion battery anodes, ***Electrochimica Acta***, 231, 582-589, 2017
52. HS Jo, SP An, HG Park, SS Al-Deyab, AL Yarin, **SS Yoon***, Highly flexible, stretchable, patternable, transparent copper fiber heater on a complex 3D surface, ***NPG Asia Materials***, 9, e347, 2017
53. BN Joshi, SP An, YI Kim, EP Samuel, KY Song, IW Seong, SS Al-Deyab, MT Swihart, WY Yoon, **SS Yoon***, Flexible freestanding Fe_2O_3-SnO_x-carbon nanofiber composites for Li ion battery anodes, ***Journal of Alloy and Compound***, 700, 259-266, 2017
54. SP An, JH Hong, KY Song, MW Lee, SS Al-Deyab, JJ Kim, AL Yarin, **SS Yoon***, Prevention of mold invasion by biocompatible lignin/polycaprolactone nanofiber membranes for amelioration of public hygiene, ***Cellulose***, 24, 951–965, 2017
55. JG Lee, B Joshi, JH Lee, TG Kim, DY Kim, SS Al-Deyab, IW Seong, MT Swihart, WY Yoon, **SS Yoon***, Stable high-capacity lithium ion battery anodes produced by supersonic spray deposition of hematite nanoparticles and self-healing reduced graphene oxide, ***Electrochimica Acta***, 228, 604-610, 2017
56. B Joshi, JG Lee, DY Kim, JH Lee, JS Lee, YK Hwang, JS Chang, SS Al-Deyab, JC Tan, **SS Yoon***, Tuning crystalline structure of zeolitic metal-organic frameworks by supersonic spraying suspension precursors, ***Materials & Design***, 114, 416-423, 2017
57. JG Lee, JH Lee, SP An, JY Yoon, JW Choi, MG Kang, JI Lee, HE Song, SS Al-Deyab, SC James, YM Kang, DH Kim, **SS Yoon***, HS Lee, Effects of impact conditions on the electrical and mechanical properties of supersonic cold sprayed Cu–Ni electrodes, ***Journal of Alloy and Compound***, 695, 3714-3721, 2017
58. JG Lee, DY Kim, JH Lee, S Sinha-Ray, AL Yarin, MT Swihart, DH Kim, **SS Yoon***, Production of flexible transparent conducting films of self-fused nanowires via one-step supersonic spraying, ***Advanced Functional Materials***, 27(1), 1602548, 2017
59. SS Pail, MG Mali, MS Tamboli, A Roy, VG Deonikar, DR Patil, SS Al-Deyab, **SS Yoon***, SS Kolekar, BB Kale, Graphene-wrapped Ag_3PO_4/$LaCO_3OH$ heterojunction for water purification under solar light, ***Journal of Energy Chemistry***, 25, 845-853, 2016
60. JJ Park, JG Lee, DY Kim, JH Lee, JH Yun, JH Gwak, YJ Eo, AR Cho, SS Al-Deyab, SJ Ahn, **SS Yoon***, Rapid supersonic spraying of $Cu(In,Ga)(S,Se)_2$ nanoparticles to fabricate a solar cell with 5.49% conversion efficiency, ***Acta Materialia***, 123, 44-54, 2017
61. MW Kim, H Yoon, TY Ohm, MG Mali, SK Choi, HW Park, SS Al-Deyab, DC Lim, SJ Ahn, **SS Yoon***, Platinum-decorated Cu(InGa)Se2/CdS photocathodes: The role of CdS and Pt on photoelectrochemistry of solar water splitting, ***Journal of Alloy and Compound***, 692, 294-300, 2017
62. MW Kim, H Yoon, TY Ohm, SH Jo, SP An, SK Choi, HW Park, SS Al-Deyab, MT Swihart, **SS Yoon***, Nanotextured cupric oxide nanofibers coated with atomic layer deposited ZnO-TiO_2 as highly efficient photocathodes, ***Applied Catalysis B: Environmental***, 201, 479-485, 2017
63. MW lee, S Sett, **SS Yoon***, AL Yarin, Self-healing of nanofiber-based composites in the course of stretching, ***Polymer***, 103, 180-188, 2016
64. MW lee, S Sett, **SS Yoon***, AL Yarin, Fatigue of self-healing nanofiber-based composites: Static test and subcritical crack propagation, ***ACS Applied Materials & Interface***, 8, 18462-18470, 2016
65. BH Bang, CS Ahn, DY Kim, HM Kim, YT Jeong, WS Yoon, SS Al-Deyab, AL Yarin, **SS Yoon***, Breakup of cylindrical Newtonian liquid specimens after an explosion in the core, ***Physics of Fluids***, 28, 094105, 2016
66. C Nervi, C Sun, S Prosperini, P Quagliotto, G Viscardi, SS Yoon, R Gobetto, Electrocatalytic reduction of CO2 by thiophene-substituted Rhenium(I) complexes and by their polymerized films, ***Dalton Transactions***, 45, 14678-14688, 2016
67. H Yoon, H Kim, MW Kim, DY Kim, JG Lee, BN Joshi, SP An, HS Jo, JH Choi, AL Yarin, SS Al-Deyab, **SS Yoon***, Efficient heat removal via thorny devil nanofiber, silver nanowire, and graphene nanotextured surfaces, ***Int. J. Heat & Mass Transfer***, 101, 198-204, 2016
68. SP An, HS Cho, HJ Lee, BK Ju, SS Al-Deyab, JH Ahn, MS Swihart, AL Yarin, SS Yoon*, Self-junctioned copper nanofiber transparent flexible film via electrospinning and electroplating, ***Advanced Materials*****,** 28, 7149–7154, 2016
69. HS Jeon, SJ Ahn MS Jee, **SS Yoon**, YJ Hwang, BK Min, Water oxidation by manganese oxide electrocatalytic films synthesized by chemical solution deposition method, ***Journal of the Electrochemical Society***, 163(11), F3113-F3118, 2016
70. SP An, JS Lee, B Joshi, HS Cho, K Titov, JS Jang, CH Jun, SS Al-Deyab, YK Hwang, JC Tan, **SS Yoon***, Freestanding fiber mats of zeolitic imidazolate framework-7 via one-step scalable electrospinning, ***Journal of Applied Polymer Science***, 43788, 2016
71. DY Kim, B Joshi, JG Lee, JH Lee, JS Lee, YK Hwang, JS Chang, SS Al-Deyab, JC Tan, **SS Yoon***, Supersonic cold spraying for zeolitic metal-organic frameworks thin films, ***Chemical Engineering Journal***, 295, 49-56, 2016
72. SP An, DY Kim, JG Lee, HS Jo, MW Kim, SS Al-Deyab, JH Choi, **SS Yoon***, Supersonically sprayed reduced graphene oxide film to enhance critical heat flux in pool boiling, ***Int. J. Heat & Mass Transfer***, 98, 124-130, 2016
73. JG Lee, DY Kim, JH Lee, MW Kim, SP An, HS Jo, C Nervi, SS Al-Deyab, MT Swihart, **SS Yoon***, Scalable binder-free supersonic cold spraying of nanotextured cupric oxide (CuO) films as efficient photocathodes, ***ACS Applied Materials & Interface***, 8, 15406-15414, 2016
74. An, MW Lee, HS Cho, SS Al-Deyab, **SS Yoon***, Weaving nanofibers by altering counter-electrode electrostatic signals, ***Journal of Aerosol Science***, 95, 67-72, 2016
75. JG Lee, DY Kim, B Joshi, JH Lee, TK Lee, WY Kim, SS Al-Deyab, **SS Yoon***, Electrically insulative performances of ceramic and clay films deposited via supersonic spraying, ***Journal of Thermal Spray Technology***, 25(4), 763-769
76. BN Joshi, SP An, HS Jo, KY Song, HG Park, SW Hwang, WY Yoon, SS Al-Deyab, **SS Yoon***, Flexible, freestanding, and binder-free SnOx-ZnO/carbon nanofiber composites for lithium ion battery anodes, ***ACS Applied Materials & Interface***, 8, 9446-9453

77. H Yoon, MG Mali, HY Kim, SS Al-Deyab, **SS Yoon***, Efficient water purification by photocatalysis and rapid adsorption of dip-coated metal foam with nano-structured bismuth vanadate, ***Journal of the American Ceramic Society***, 99, 1023-1030, 2016
78. JH Seo, HY Kim, S Park, SC James, **SS Yoon**, Experimental and numerical simulations of spray impingement and combustion characteristics in gasoline direct injection engines under varied driving conditions, ***Flow, Turbulence and Combustion***, 96(2), 391-415, 2016
79. BH Bang, HS Park, JH Kim SS Al-Deyab, AL Yarin, **SS Yoon***, Simplified method for estimating the effect of a hydrogen explosion on a nearby pipeline, ***Journal of Loss Prevention in the Process Industries***, 40, 112-116, 2016
80. CS Kim, JW Choi, SJ Choi, SM Kim, HM Park, HE Song, **SS Yoon**, JY Huh, YM Kang, HS Lee, DH Kim, Effects of current-injection firing with Ag paste in a boron emitter, ***Scientific Report***, 6, 21553, 2016
81. H Yoon, MG Mali, MW Kim, SS Al-Deyab, **SS Yoon***, Electrostatic spray deposition of transparent tungsten oxide thin-film photoanodes for solar water splitting, ***Catalysis Today***, 260, 89-94, 2016
82. SS Patil, MG Mali, MS Tamboli1, DR Patil, MV Kulkarni, H Yoon, HY Kim, SS Al-Deyab, **SS Yoon***, SS Kolekar, BB Kale, BB Kale, Green approach for hierarchical nanostructured Ag-ZnO and their photocatalytic performance under sunlight, ***Catalysis Today***, 260, 126–134, 2016
83. BJ Kang, KD Lee, JG Lee, **SS Yoon**, YM Kang, HS Lee, DH Kim, Influence of particle velocity of copper on emitter contact by cold spray method, ***Journal of Thermal Spray Technology***, 25(3), 465-472, 2016
84. SP An, HS Cho, SS Al-Deyab, AL Yarin, **SS Yoon*,** Nano-textured copper oxide nanofibers for efficient air cooling, ***Journal of Applied Physics***, 119, 065306, 2016
85. MW Lee, SS Yoon*, AL Yarin, Solution-blown core-shell self-healing nano- and microfibers, ***ACS Applied Materials & Interface***, 8, 4955-4962, 2016
86. DY Kim, JG Lee, JH Lee, AL Yarin, **SS Yoon***, Supersonically-sprayed thermal barrier layers using clays micro-particles, ***Applied Clay Science***, 120, 142-146, 2016
87. MW Lee, SP An, KY Song, B Joshi, HS Jo, SS Al-Deyab, **SS Yoon***, AL Yarin, Polyacrylonitrile nanofibers with added zeolitic imidazolate frameworks (ZIF-7) to enhance mechanical and thermal stability, ***Journal of Applied Physics***, 118, 245307, 2015
88. MG Mali, H Yoon, HY Kim, B Joshi, SS Al-Deyab, **SS Yoon***, Chemical-bath-deposited indium oxide microcubes for solar water splitting, ***ChemPhysChem***, 16,3450 –3457, 2015
89. JG Lee, DY Kim, MG Mali, JH Lee, M Swihart, SS Al-Deyab, **SS Yoon***, Supersonically blown nylon-6 nanofibers entangled with graphene flakes for water purification, ***Nanoscale,*** 7, 19027 – 19035, 2015
90. MG Mali, H Yoon, B Joshi, HW Park, SS Al-Deyab, DC Lim, SJ Ahn, C Nervi, **SS Yoon***, Enhanced photoelectrochemical solar water splitting using a platinum-decorated CIGS/CdS/ZnO photocathode, ***ACS Applied Materials & Interface***, 7, 21619-21625, 2015
91. HS An, JE Kim, SJ Park, HS Jeon, **SS Yoon**, YJ Hwang, DW Kim BK Min, A simple chemical route for composition graded Cu(In,Ga)S2 thin film solar cells: multi-stage paste coating, ***RSC Advances***, 5, 103439-103444, 2015
92. SP An, HS Cho, KY Song, MG Mali, SS Al-Deyab, **SS Yoon***, Electrically-charged recyclable graphene flakes entangled with electrospun nanofibers for the adsorption of organics for water purification, ***Nanoscale***, 7, 19170-19177, 2015
93. B Joshi, H Yoon, HY Kim, MW Kim, MG Mali, SS Al-Deyab, **SS Yoon***, Heterojunction photoanodes for solar water splitting using chemical-bath-deposited In_2O_3 micro-cubes and electro-sprayed Bi_2WO_6 textured nanopillars, ***RSC Advances***, 5, 85323-85328, 2015
94. SP An, MH Liou, KY Song, HS Jo, MW Lee, SS Al-Deyab, AL Yarin, **SS Yoon***, Highly flexible transparent self-healing composite based on electrospun core-shell nanofibers produced by coaxial electrospinning for anti-corrosion and electrical insulation, ***Nanoscale***, 7, 17778 - 17785
95. MW Lee, SP An, HS Jo, **SS Yoon***, AL Yarin, Self-Healing nanofiber-reinforced polymer composites. 1. tensile testing and recovery of mechanical properties, ***ACS Applied Materials & Interface***, 7, 19546-19554, 2015
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21. H Park, **SS Yoon**, RA Jepsen, SD Heister, Modeling the influence of gas pressure on droplet impact using a coupled gas/liquid boundary element method, *ILASS-Korea*, March, Korea
22. S Jo, HY Kim, S Park, **SS Yoon**, Numerical simulations of the pulverized coal combustion in a swirl combustor, *ASME ATI-2006, Energy: Production, Distribution and Conservation*, May 14-17, 2006, Milan, Italy
23. B Demosthenous, RA Jepsen, K Jensen, T O'Hern, E Bystrom, E Romero, **SS Yoon**, Diagnostics for high speed, large liquid slug impact and dispersion, *19th Annual Conference on Liquid Atomization and Spray Systems*, Toronto, Canada, May, 2006.
24. H Park, **SS Yoon**, RA Jepsen, SD Heister, Droplet impact simulation with effects of air on a dry smooth surface, *19th Annual Conference on Liquid Atomization and Spray Systems*, Toronto, Canada, May, 2006.
25. RA Jepsen, **SS Yoon**, B Demosthenous, Effects of air splashing during a droplet impact, *19th Annual Conference on Liquid Atomization and Spray Systems*, Toronto, Canada, May, 2006.
26. H Park, **SS Yoon**, SD Heister, Nonlinear breakup mechanism of a swirling round jet, *19th Annual Conference on Liquid Atomization and Spray Systems*, Toronto, Canada, May, 2006.

27. Cho, CP, Kim, HY, **Yoon, SG**, Combustion characteristics of spherical droplet in turbulent flow field, *31st Korean Society of Combustion (KOSCO) Symposium*, Busan, Korea, October, pp. 132-137, 2005.
28. **Yoon, SS**, DesJardin, PE, Modeling spray impingement using linear stability theories for shattering droplets, AIAA-2005-3588, *41st AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit*, Tucson, Arizona, 10-13, July, 2005.
29. **Yoon, SS**, Jepsen, RA, O'Hern, TJ, Experimental investigation on splashing and fingerlike instability of large water droplet, *18th Annual Con Conference on Liquid Atomization and Spray Systems*, Irvine, California, May, 2005.
30. **Yoon, SS**, DesJardin, PE, Presser, C, Hewson, JC, Avedisian, CT, Numerical modeling and experimental measurements of water spray impact and transport over a cylinder, *18th Annual Con Conference on Liquid Atomization and Spray Systems*, Irvine, California, May, 2005.
31. **Yoon, SS**, Hewson, JC, DesJardin, PE, Glaze, DJ, Black, AR, Skaggs, RR, On the modeling of a solid-cone spray, *17th Annual Con Conference on Liquid Atomization and Spray Systems*, Arlington, Virginia, May, 2004.
32. Park, H, **Yoon, SS**., Heister, SD, A fully nonlinear primary atomization model for high-speed jets, *16th Annual Conference on Liquid Atomization and Spray Systems*, Monterey, California, May, 2003.
33. **Yoon, SS**, Heister, SD, A fully nonlinear primary atomization model, AIAA-2002-4179, *38th AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit*, Indianapolis, Indiana 7-10, July, 2002.
34. **Yoon, SS**, Heister, SD, A fully nonlinear primary atomization model, *15th Annual Conference on Liquid Atomization and Spray Systems*, Madison, Wisconsin, May, 2002.
35. **Yoon, SS**, Srinivasan, B, An upwind interpolation scheme for cavitating flows on nonuniform meshes, *First International Conference on Computational Methods in Multiphase Flow*, W.I.T. Press, Southampton, Boston, pp. 241-250, 2001.
36. **Yoon, SS**, Pham, TL, Heister, SD, Development of a fully-coupled injection/atomization code, *First International Conference on Computational Methods in Multiphase Flow*, W.I.T. Press, Southampton, Boston, pp. 265-273, 2000.
37. **Yoon, SS** and Heister, SD, Simulation of the nonlinear dynamics of charged liquids using boundary element methods, *Boundary Element Technology XII*, W.I.T. Press, Southampton, Boston, pp. 13-23, 1999.
38. **Yoon, SS**, Heister, SD, Modeling multi-jet mode electrostatic atomization, *12th Annual Conference on Liquid Atomization and Spray Systems*, pp. 247-251, May, 1999.

Book/Chapters

1. **Yoon, SS**, Heister, SD, Modeling atomization using boundary element methods (BEM), ***Handbook of Atomization and Sprays: Chapter 18***, 2011, Part 2, 359-382, DOI: 10.1007/978-1-4419-7264-4_18

Theses

- **Yoon, SS**, A fully nonlinear primary atomization model, Ph.D. Thesis, *Purdue University,* 2002.
- **Yoon, SS**, Simulation of the nonlinear dynamics of charged liquids using boundary element methods, M.S. Thesis, *Purdue University,* 1999.

Technical Report

- **Yoon, SS**, Glaze, DJ, Hewson, JC, Suo-Anttila, JM, Suppressant distribution from a prototype Goodrich-244 fire suppression system into a simulated aircraft cargo bay, for ***Goodrich Corporation***, June, 2003
- **Yoon, SS**, Hewson, JC, DesJardin, PE, Glaze, DJ, Black, AR, Skaggs, RR, On the modeling of a solid-cone water spray, for the ***United States Army***, November, 2003
- Romero, VJ, Dempsey, JF, Figueroa, VG, Hobbs, ML, Erikson, WW, Sherman, MP, Bainbridge, BL, Rajan, M, Dowding, KJ, Helton, JC, Hogan, RE, Dobranich, D, Tieszen, SR, Romero, CA, **Yoon, SS**, Advances in an approach to QMU (Quantifying Margins and Uncertainty) applied to weapon safety in abnormal thermal environments, SAND2005-1322, June, 2005, Albuquerque, NM.

PATENTS

1. 전기방사법을 이용한 나노섬유 제조장치, 출원번호:10-2010-0106943, 등록번호:10-1251731
2. 에어로졸 입자 공급장치 및 이를 이용한 에어로졸 증착 장치, 10-2010-0116245, 10-1209349
3. 태양전지 도선 전극 제조 장치, 10-2011-0012062, 10-1217304
4. 무기물 박막 태양전지 제조 장치, 10-2011-0012063, 10-1217330
5. 태양전지 그리드 전극 제조 장치 및 이를 사용한 그리드 전극 제조 방법, 10-2011-0016727, 10-1202826
6. 염료감응형 태양전지 에어로졸 증착 장치 및 이를 사용한 에어로졸 증착 방법, 10-2011-0016726, 10-1202827
7. 자가세정 방식 태양전지 기판, 10-2011-0060848, 10-1218888
8. 태양전지 제조 장치 및 이의 제어 방법, 10-2011-0060846, 10-1242299
9. 태양전지 전극 및 패시베이션층 제조 장치, 10-2011-0060847, 10-1242352
10. 정전기 스프레이 장치, 10-2011-0073580
11. 콘젯 모드 정전기 스프레이 장치, 10-2011-0073579
12. 콘젯 모드 정전기 스프레이 장치, 10-2011-0080230
13. 전기 방사 장치, 10-2011-0104222
14. 무기물 박막 태양전지 제조 장치 및 이의 제어 방법, 10-2012-0005920
15. 무기물 박막 태양전지 제조 장치 및 이의 제어 방법, PCT/KR2012/000972

16. 전기 방사 및 정전기 스프레이 방식을 이용한 혼합 코팅 장치, 10-2012-0028398
17. 전기 방사 장치, 10-2012-0029142
18. 전기 방사 장치, PCT/KR2012/004803
19. 항균 코팅층 형성 장치, 10-2012-0072899
20. 저온 스프레이 방식 그래핀 증착 장치, 10-2013-0002613
21. 전기방사를 이용한 물과 기름의 분리용 필터 제작
22. 초음속 노즐을 이용한 종입자 분쇄
23. 선택적 투과 및 수처리를 위한 그래핀/고분자 복합 막
24. 오수 정화용 재활용이 가능한 그라핀 필터 제작

COURSES TAUGHT

Undergraduate

- Thermodynamics (2011-Fall, Colorado School of Mines)
- Thermodynamics I, II, and Numerical Analysis (2007, Korea University)
- Jet Propulsion Power Plants (2001, Purdue University)
- Energy Conversion, Multiphase Flow (2006, Korea University)
- Thermal System Design (2005, Korea University)

Graduate

- Special Topics in Photovoltaic (2008-Present, Korea University)
- Computational Fluid Dynamics (2007-Present, Korea University))
- Applied Mathematics (2005-7, Korea University)

EDITORSHIP & COMMITTEE

- Associate Editor, Journal of Mechanical Science & Technology (2013.04.01 – 2016.03.31)
- Editorial Board, *Int. Journal of Aeronautical and Space Sciences*, (Nov. 2012 – Present)
- Editorial Board, *Atomization and Sprays (SCI)*, (Nov. 2006-Nov. 2008)
- Executive Committee, *The Korean Vacuum Society*, (April 1st, 2013 – March 31st, 2015)
- Organizing Committee, *Global Photovoltaic Conference (GPVC)*, Busan, Korea, Nov. 19-21, 2012
- Advisory Board, McDonnell Academy Global Energy and Environment Partnership, A CONSORTIUM OF 28 UNIVERSITIES AND CORPORATE PARTNERS WORKING TOGETHER IN ENERGY, ENVIRONMENTAL AND SUSTAINABILITY RESEARCH, EDUCATION, AND OPERATIONS, Jan, 2011 - Present
- Organizing Committee, *6th National Congress on Fluids Engineering*, Busan, Korea, Aug. 18-20, 2010
- Organizing Committee, *19th Int. Photovoltaic Sci. & Eng. Conf. & Exhib. (PVSEC)*, Jeju, Korea, Nov. 9-13, 2009
- International Advisory, *6th Asia-Pacific Drying Conf. (ADC)*, Bangkok, Thailand, Oct. 19-21, 2009
- Editorial Executive, *KSME Thermo & Fluid Division*,(Dec. 2007-2008)

JOURNAL REFEREE FOR

- *Chemistry of Materials*
- *Fuel*
- *Fire Safety Journal*
- *Applied Surface Science*
- *Surface & Coatings Technology*
- *ACS Applied Materials & Interfaces*
- *J. of Colloid & Interface Science*
- *Nanoscale*
- *Journal of Power Sources*
- *Carbon*
- *Computers & Fluids*
- *Experiments in Fluids*
- *International Journal for Numerical Methods in Fluids*
- *Journal of Fluids Mechanics*
- *Journal of Fluids and Structures*
- *International Journal of Heat and Mass Transfer*
- *Ceramics International*
- *Journal of the American Ceramic Society*
- *Catalysis Today*
- *Combustion & Flames*
- *Journal of Aerosol Sciences*

- *Aerosol Science & Technology*
- *Current Applied Physics*
- *Journal of the Electrochemical Society*
- *Applied Mathematical Modelling*
- ASME, *Journal of Fluid Engineering*
- *Atomization and Sprays*
- *Experiments in Fluids*
- *International Journal on Energy for a Clean Environment*
- *International Journal of Heat and Fluid Flows*
- *International Journal of Multiphase Flow*
- *International Journal of Offshore and Polar Engineering*
- *Journal of Aerosol Science*
- *Journal of Mechanical Science and Technology*
- *Physics of Fluids*
- *Proceedings of the Combustion Institute*
- *Thin Solid Films*
- *Experiments in Fluids*
- *Journal of Electrochemical Society*
- *Journal of Thermal Spray Technology*
- *Surface Coating & Technology*
- *International Journal of Air-Conditioning and Refrigeration*
- *Applied Mathematical Modelling*
- *Journal of Propulsion and Power*
- *Drying Technology*
- *International Journal of Thermal Sciences*
- *International Journal of Heat and Mass Transfer*
- *Microfluidics & Nanofluidics*

PROFESSIONAL SOCIETIES

- AIAA (American Institute of Aeronautics and Astronautics)
- ILASS (Institute for Liquid Atomization and Spray Systems)
- ASME (American Society of Mechanical Engineers)

RESEARCH GRANTS

1. 신성장융합형, 에너지기술연구원
2. 밤에도 작동가능한 미생물 태양전지, **\24,000 만원, 윤석구(PI),** 한국연구재단, 2011.11.18-2014.10.31
3. 전기수력학(EHD) 잉크젯 프린팅기술을 이용한 태양전지 및 전자부품 박막 패터닝, **\30,000 만원, 윤석구(PI),** 한국연구재단, 2010.05.01-2013.04.30
4. 비진공법 CIGS 박막 증착기술 개발 (ERC 센터-3 세부), **\16,000 만원, 윤석구(PI),** 한국연구재단, 2011.03.01-2015.02.28
5. 태양전지 Oxides 투명전극과 CIGS 와 CdTe 흡수층의 제조 및 연구, **\2,000 만원, 윤석구(PI),** 한국연구재단, 2011.06.30-2012.06.29
6. 친환경 스마트 표면처리를 위한 파우더 코팅 기초연구 모델링 및 실험연구, **\2,700 만원, 윤석구(PI),** 한국연구재단, 2011.02.01-2012.02.01
7. 스프레이 코팅 최적화를 위한 액적-기판 충돌현상 모델링 및 실험연구, **\4,000 만원, 윤석구(PI),** 한국연구재단, 2010.04.01-2012.03.31
8. PHEV 초고효율 엔진기술개발, **\7,000 만원, 윤석구(PI),** 한국산업기술평가관리원, 2010.04.01-2011.03.31
9. 성균관대-화합물 반도체 태양전지 원천기술 연구센터 (고려대-위탁) **\12,000 만원, 윤석구(PI),** 한국에너지기술평가원, 2009.05.01-2012.04.30
10. 고속,고해상도 프린팅 기술을 이용한 Flexible CIGS 태양전지 그리드 전극 프린팅 기술 개발(주관과제명:고효율 장수명 금속 유영기판 CIGS 박막 태양전지 및 모듈 양산기술개발), **\70,000 만원, 윤석구(PI),** 한국에너지기술평가원, 2009.12.01-2011.11.30
11. 한·독 공동세미나: 박막형 태양전지 기판 코팅을 위한 액적 충돌현상 연구 세미나, **\1,000 만원, 윤석구(PI),** 한국과학재단, 2009.08.27-2009.08.29
12. 정전장에서 액적입자의 거동에 관한 고찰, **\3,500 만원, 윤석구(PI),** 동부재단, 2009.06.01-2009.11.30
13. 핵주기관련 웹기반 품질보증 정보시스템 개발, **\6,000 만원, 윤석구(PI),** 한국원자력연구원, 2009.07.01-2010.12.31,
14. Application of Electrostatic Sprays to Wurster-Based Fluidized Bed Coating Devices, **$8000 by NSF and $2000 USD by KOSEF** to Andrew Lee (PI), **$3000 by NSF to $1000 USD** by KOSEF to Sam Yoon, EAPSI, NSF08-603.
15. 태양전지용 폴리실리콘 제작을 위한 Si 입자의 유동층 및 Jet Mill 모델 해석 및 실험 연구**, \10,000 만원**, **윤석구(PI),** 지식경제부, 2008.12-2010.02

16. 스프레이 기술을 이용한 태양전지용 용매 코팅기술 최적화 (Development and Optimization of Solar Cell Precursor Coating Technique using Electrostatic Spray) , **\12,000 만원**, **윤석구(PI),** 한국에너지기술연구원, 산업기술연구회, 2008.12-2012.02
17. 휴대폰 케이스의 균일한 도장 및 페인팅을 위한 정전기 액적 부착 기술 개발 (Development of Electrostatic Spray Coating Technique for use in Cellular Phone Applications), **\4,000 만원**, **윤석구(PI),** Multimedia Communication, LG Electronics, 2009.03.01-2010.02.28
18. 정전기 충전 나노액적 분무를 이용한 효율적 제약분말 유동층 분무 코팅기술 개발, **\4,000 만원**, 학술진흥재단(KRF), **윤석구(PI)**, Proposal No.: KRF2008-313-D00135, 2008.11-2009.10
19. 극한조건의 단일액적충돌에 관한 수치해석 연구, **\2,000 만원**, 학술진흥재단(KRF), **윤석구(PI)**, Proposal No.: KRF2007-331-D00061, 2007.08-2008.07
20. 중질/경질유 분무 순산소 연소특성 연구, **\10,000 만원**, 과학재단(KOSEF), **윤석구 (PI)**, Proposal No.: , 2006.04-2008.03.
21. Investigation on pressure pulsation of a spreading drop on dry surface using boundary element methods, **$20,000USD**, Sandia National Lab (SNL, Albuquerque, NM), **Sam Yoon (PI)**, Proposal No.: R0504532, 2006.11-2007.09.
22. Investigation of liquid jet breakup and dispersion, **$580,000USD**, Sandia National Lab (SNL, Albuquerque, NM), Richard Jepsen (PI), **Sam Yoon**, Timothy O'Hern, Proposal No.: LDRD05-0030, 2005.05-2007.08

INVITED SEMINARS AND PRESENTATIONS

1. Seminar, Univ. Toronto (2017.02.03)
2. Invited Speaker, Electrospin 2016, Italy (2016.07.12)
3. Seminar, American University at Cairo, Egypt (2013.04.09)
4. Seminar, Colorado School of Mines (2011.09.29), Univ. Illinois at Chicago (2012.02.28), Purdue Univ (2012.03.01)
5. Seminar, Univ. Toronto (2011.01.11), Handong Univ (2011.06.07), Samsung Chemical (2011.12.14),
6. Invited Speaker at MRS-Korea (2011.05.27),
7. Seminar, Utilizing spray technologies for particle coating in solar cell applications, ADD, 2010.06.21
8. Seminar, Utilizing spray technologies for particle coating in solar cell applications, SKKU, 2010.06.10
9. Seminar, Hong Kong Polytechnic University, Hong Kong, China, 2010.05.07
10. Seminar, Utilizing spray technologies for particle coating in solar cell applications, Seoul National University, 2009,12.09
11. Seminar, Making the low cost solar cells using spray technology, 태양전지 융복합 기술연구회, Busan, 2009.12.19
12. Seminar, Photovoltaic research: Making the low cost solar cells using spray technology, TKK and VTT, Finland, 2009.12.08
13. Presentation at 19th PVSEC, Jeju, Korea, 2009.11.12
14. Presentation at 6th Asian Drying Technology, Bangkok, Thailand, Oct 18-22, 2009.
15. Seminar at Aachen RWTH, Aachen, Germany, 2009.08.28
16. Invited keynote speaker at *The 16th Symposium on Atomization, ILASS-Japan*, 2007, Dec, 20-21,
17. Invited colloquium at *Korea Institute of Construction Technology (KICT)*, Hwasung, Kyungkido, Korea, Topic: Future fire science research at KICT, March 2, 2007
18. Invited seminar at *University of New Mexico*, Albuquerque, New Mexico, Topic: Diagnostics for high speed, large liquid slug impact and dispersion, February 2, 2006.
19. Invited colloquium at *Korea Ocean Research & Development Institute (KORDI)*, Daejeon, Korea, Topic: Fire safety solution: fire mitigation/suppression using water spray, July 4, 2006.
20. Invited colloquium at *Seoul National University*, Seoul, Korea in Mech. & Aero. Eng. Dep., Dec. 19, 2005.
21. Presentation at *41st AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit*, Topic: Modeling spray impingement using linear stability theories for shattering droplets, Tucson, Arizona, July 10, 2005.
22. Presentation at *18th Annual Conference on Liquid Atomization and Spray System,* Topic: Numerical modeling and experimental measurements of water spray impact and transport over a cylinder, Irvine, California, May 20, 2005.
23. Invited at *Yonsei University*, Seoul, Korea in Mech. Eng. Dep.
24. Invited Seminars at *Sandia National Laboratories* in orgz. 6863 Nuclear and Risk Technologies (Dr. Gary Rochau, Group Manager) Topic: Liquid spray breakup & dispersion for fire-suppression applications, Albuquerque, NM, April 27th, 2005.
25. Invited Seminar at *Korea University*, Seoul, Korea in Mech. Eng. Dep. Topic: Liquid spray breakup & dispersion for fire-suppression applications, April 18, 2005.
26. Presentation at *17th Annual Conference on Liquid Atomization and Spray System,* Topic: On the Modeling of a Solid-Cone Spray, Washington DC, May 19, 2004.
27. Invited at *Hanyang University*, Seoul, Korea in Mech. Eng Dep.
28. Invited Seminar at *Pohang University of Science and Technology* in Mechanical Engineering Department. Topic: On the modeling of various sprays, September 29, 2003.
29. Invited Seminar at *University of New Mexico*, Albuquerque, New Mexico, Topic: A nonlinear atomization model based on a boundary layer instability mechanism, September 16, 2003.
30. Presentation at *38th AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit*, Topic: A Fully Nonlinear Primary Atomization Model, Indianapolis, Indiana, July 8, 2002.
31. Presentation at *15th Annual Conference on Liquid Atomization and Spray System,* Topic: A Fully Nonlinear Primary Atomization Model, Madison, Wisconsin, May 14, 2002.
32. Invited Seminar at *Sandia National Laboratories* for a *Post-Doctoral Fellow* position, Topic: A Fully Nonlinear Primary Atomization Model, Albuquerque, NM, March 5th, 2002.

33. Presentation at *First Int. Conference on Computational Methods in Multiphase Flow*, Topics: **a)** An Upwind Interpolation Scheme for Cavitating Flows on Nonuniform Meshes, **b)** Development of a Fully-Coupled Injection/Atomization Code, Orlando, Florida on March 15-17, 2001.
34. Invited Seminar at *Korea University*, Seoul, Korea, Topic: Simulation of the Nonlinear Dynamics of Charged Liquids using Boundary Element Methods, July 30, 1999.
35. Presentation at *Boundary Element Technology XII* Conference, Topic: Simulation of the Nonlinear Dynamics of Charged Single Column and Droplet using Boundary Element Methods, Las Vegas, Nevada, June 9, 1999.
36. Presentation at *12th Annual Conference on Liquid Atomization and Spray System,* Topic: Simulation of the Nonlinear Dynamics of Charged Multi-Jet using Boundary Element Methods, Indianapolis, Indiana, May 17, 1999.

ADVISING STUDENTS & ALUMNI

Post Doc:

1. Sanjay Latthe (2012.10.01 – 2013.09.31)
2. Bhavana N. Joshi (2011.07.01 – 2013.02.28)

PhD Course:

1. Min Wook Lee (2014), Senior Researcher at KIST
2. Hyun Yoon (2015), Research Professor at KIER
3. Jung Jae Park (2016), Senior Researcher at 한수원
4. Do Yeon Kim (2016), Senior Engineer at SEMES
5. Jong-Gun Lee (2017), Post-Doc at Technion
6. Seongpil An (2017), Post-Doc at UIC
7. Min-Woo Kim (expected 2020)
8. Hong-Seok Jo (expected 2020)
9. Chan Sol Ahn, (expected in 2015) in progress
10.

Master Course:

1. Chang Min Lee (expected 2015), in progress
2. Yoo Hong Cha (expected 2015), in progress
3. Jae Young Choi (expected 2015), in progress
4. Na Young Kim (expected 2013), in progress
5. Jong Gun Lee (expected 2013), in progress
6. Seung Hun Na (expected 2013), in progress
7. Young Min Ra (2012), Shindorico
8. Do Yeon Kim (2012), PhD course at KU
9. Dong Kyun Kang (2012), LG Electronics
10. Ji Hoon Woo (2012), Royal College of Art, UK
11. Hyun Yoon (2011), PhD course at KU
12. Chang Hyun Cho (2009), LG Telecom
13. Min Wook Lee (2009), PhD course at KU
14. In Hyuk Hwang (2009), LG Electronics
15. Bu Hyoung Bang (2009), LG Electronics