

Curriculum Vitae

Sam Sukgoo Yoon



Solar Cell & Aerosol Science Laboratory

Mechanical Engineering Department

Korea University

Anamdong, 5-Ga, Sungbuk-Gu

Seoul, Korea, 136-713

Email: skyoon@korea.ac.kr

<http://solarcellaerosol.korea.ac.kr/>

Tel: 82-2-3290-3376 or 82-10-9907-3376

Fax: 82-2-926-9290

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: TEACHING ASSISTANT, 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: RESEARCH ASSISTANT, Mech. Eng., Colorado School of Mines, Designed a pipe system for ocean mining applications
- 1996/Jan to 1997/Apr: TEACHING ASSISTANT, Mech. Eng., Colorado School of Mines, Junior/senior level class, Graded and helped 80 students on fundamentals of incompressible fluids.

AWARD

- Purdue Forever Fellowship (2001)
- 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, 2018, 2019)

PUBLICATIONS

Refereed Journals

1. CW Park, TG Kim, MW Kim, A Aldabahi, M El-Newehy, **SS Yoon***, Splash suppression in wafer wet-cleaning by drop penetration across metal meshes and fiber mats, *Journal of Visualization*, published online
2. TG Kim, CW Park, DY Woo, JH Choi, **SS Yoon***, Efficient heat spreader using supersonically sprayed graphene and silver nanowire, *Applied Thermal Engineering*, published online
3. MW Kim, SP An, HJ Seok, HC Jung, DH Park, AL Yarin, **SS Yoon***, In vitro evaluation of Pt-coated electrospun nanofibers for endovascular coil embolization, *Acta Biomaterialia*, published online
4. SP An, BN Joshi, AL Yarin, MT Swihart, **SS Yoon***, Supersonic cold spraying for energy and environmental applications: one-step scalable coating technology for advanced micro- and nanotextured materials, *Advanced Materials*, published online
5. BH Bang, YI Kim, SG Jeong, YB Yoon, AL Yarin, **SS Yoon***, Theoretical model for swirling thin film flows inside nozzles with converging-diverging shapes, *Applied Mathematical Modelling*, 76, 607-616, 2019
6. HS Jo, SP An, CW Park, DW Woo, AL Yarin, **SS Yoon***, Wearable stretchable transparent all-in-one soft sensor formed from supersonically sprayed silver nanowires, *Applied Materials & Interface*, 11, 40232-40242, 2019
7. DH Cho, HS Jo, WJ Lee, TG Kim, BH Shin, **SS Yoon***, YD Chung, Enhanced electrical conductivity of transparent electrode using metal microfiber networks for gridless thin-film solar cells, *Solar Energy Materials and Solar Cells*, 200, 109998, 2019
8. E Samuel, TG Kim, CW Park, BN Joshi, MT Swihart, **SS Yoon***, Supersonically sprayed Zn₂SnO₄/CNT nanocomposites for high-performance supercapacitor electrodes, *ACS Sustainable Chemistry & Engineering*, 7, 14031-14040, 2019
9. E Samuel, BN Joshi, MW Kim, YI Kim, MT Swihart, **SS Yoon***, Hierarchical zeolitic imidazolate framework decorated carbon nanofiber for high performance of flexible supercapacitors, *Chemical Engineering Journal*, 371, 657-665, 2019
10. TG Kim, BN Joshi, CW Park, E Samuel, MW Kim, MT Swihart, **SS Yoon***, Supersonically sprayed iron oxide nanoparticles with atomic layer-deposited ZnO/TiO₂ layers for solar water splitting, *Journal of Alloys and Compounds*, 798, 35-44, 2019
11. MW Kim, SP An, HJ Seok, AL Yarin, **SS Yoon***, Removal of particulate matter by strong electrostatic field from transparent air filter comprising metallized microfibers, *Applied Materials & Interface*, 11(29), 26323-26332, 2019
12. JH Hong, SP An, KY Song, YI Kim, AL Yarin, JJ Kim, **SS Yoon***, Eco-friendly lignin nanofiber mat for wood protection against environmentally hazardous fungi attacks, *Polymer Testing*, 74, 113-118, 2019
13. CS Ahn, CW Park, MW Kim, TG Kim, SC James, AL Yarin, **SS Yoon***, Experimental and numerical investigation of smoke dynamics in vertical cylinders and open-air environment, *Int. J. Heat and Mass Transfer*, 135, 985-995, 2019
14. YI Kim, SP An, MW Kim, HS Jo, TG Kim, AL Yarin, **SS Yoon***, Highly transparent, conducting, body-attachable metallized fibers as a flexible and stretchable film, *Journal of Alloys and Compounds*, 790, 1127-1136, 2019
15. CS Ahn, BH Bang, MW Kim, HS Jo, AL Yarin, **SS Yoon***, Theoretical, numerical, and experimental investigation on smoke dynamics in high rise buildings, *Int. J. Heat and Mass Transfer*, 135, 604-613, 2019
16. HS Jo, E Samuel, HJ Kwon, BN Joshi, MW Kim, TG Kim, MT Swihart, **SS Yoon***, Highly flexible transparent photoelectrochemical substrate-free photoanodes using ZnO nanowires on nickel microfibers, *Chemical Engineering Journal*, 363, 13-22, 2019
17. BN Joshi, E Samuel, MW Kim, KR Kim, WY Yoon, **SS Yoon***, Electrospayed graphene films decorated with bimetallic (zinc-iron) oxide for lithium-ion battery anodes, *Journal of Alloys and Compounds*, 782, 699-708, 2019
18. KY Bae, MW Kim, BH Kim, KY Bae, SH Cho, SS Yoon, WY Yoon, Effect of electrostatic spray deposited nafion coating on non-lithiated LiV₃O₈ cathode in lithium-metal rechargeable batteries, *Solid State Ionics*, 331, 66-73, 2019
19. BH Bang, CS Ahn, YT Kim, MH Lee, MW Kim, AL Yarin, **SS Yoon***, Deflagration-to-detonation transition in pipes: The analytical theory, *Applied Mathematical Modelling*, 66, 332-343, 2019
20. YI Kim, E Samuel, BN Joshi, MW Kim, TG Kim, **SS Yoon***, Highly efficient electrodes for supercapacitors using silver-plated carbon nanofibers with enhanced mechanical flexibility and long-term stability, *Chemical Engineering Journal*, 353, 189-196, 2018
21. CS Ahn, BH Bang, MW Kim, TG Kim, SC James, AL Yarin, **SS Yoon***, Numerical investigation on smoke dynamics in unconfined and confined environments, *Int. J. Heat and Mass Transfer*, 127, 571-582, 2018

22. SD Kim, JG Lee, TG Kim, K Rana, JY Jeong, JH Park, **SS Yoon**, JH Ahn, Additive-free electrode fabrication with reduced graphene oxide using supersonic kinetic spray for flexible lithium-ion batteries, *Carbon*, 139, 195-204, 2018
23. BN Joshi, E Samuel, YI Kim, MW Kim, HS Jo, MT Swihart, WY Yoon, **SS Yoon***, Hierarchically designed ZIF8 derived Ni@ZnO/ carbon nanofiber freestanding composite for steady lithium storage, *Chemical Engineering Journal*, 351, 127-134, 2018
24. BN Joshi, E Samuel, TG Kim, CW Park, YI Kim, MT Swihart, WY Yoon, **SS Yoon***, Supersonically spray-coated zinc ferrite/graphitic-carbon nitride composite as a stable high-capacity anode material for lithium-ion batteries, *Journal of Alloys and Compounds*, 768, 525-534, 2018
25. MW Kim, KR Kim, BN Joshi, E Samuel, MT Swihart, **SS Yoon***, Tuning morphology of electrosprayed BiVO₄ from nanopillars to nanoferns via pH control for solar water splitting, *Journal of Alloys and Compounds*, 769, 193-200, 2018
26. HS Jo, HJ Kwon, TG Kim, CW Park, SP An, AL Yarin, **SS Yoon***, Wearable transparent thermal sensors and heaters based on metal-plated fibers and nanowires, *Nanoscale*, 10, 9720-9728, 2018
27. MW Kim, BN Joshi, E Samuel, KR Kim, YI Kim, TG Kim, **SS Yoon***, Highly nanotextured β -Bi₂O₃ pillars by electrostatic spray deposition as photoanodes for solar water splitting, *Journal of Alloys and Compounds*, 764, 881-889, 2018
28. HS Jo, MW Kim, TG Kim, SP An, HG Park, JG Lee, SC James, JH Choi, **SS Yoon***, Supersonically spray-coated copper meshes as textured surface for pool boiling, *Int. J. Thermal Sciences*, 132, 26-33, 2018
29. TG Kim, E Samuel, BN Joshi, CW Park, MW Kim, WY Yoon, **SS Yoon***, Supersonically sprayed rGO-Zn₂SnO₄ composites as flexible, binder-free, scalable, and high capacity lithium-ion battery anodes, *Journal of Alloys and Compounds*, 766, 331-340, 2018
30. BH Bang, MW Kim, YI Kim, **SS Yoon***, Growth rate and oscillation frequency of electrified jet and droplet: Effects of charge and electric field, *Aerosol Science and Technology*, 52, 1070-1082, 2018
31. 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. Heat and Mass Transfer*, 123, 1120-1127, 2018
32. TG Kim, JG Lee, CW Park, MS Choi, WY Kim, JS Yang, **SS Yoon***, Supersonically sprayed clay, silica, and silica aerogel hybrid films as thermal and electrical barriers, *Ceramic International*, 44, 12934-12939, 2018
33. HS Jo, JG Lee, TG Kim, HG Park, SC James, JH Choi, **SS Yoon***, Supersonically sprayed nanotextured surfaces with silver nanowires for enhanced pool boiling, *Int. J. Heat & Mass Transfer*, 123, 397-406, 2018
34. BN Joshi, E Samuel, MW Kim, YI Kim, SR Park, TG Kim, MT Swihart, WY Yoon, **SS Yoon***, ZIF8 derived ZnO/carbon nanofiber as freestanding electrodes for Lithium storage in Li-ion batteries, *Journal of Power Sources*, 395, 349-357, 2018
35. SP An, MW Lee, AL Yarin, **SS Yoon***, A review on corrosion-protective extrinsic self-healing: Comparison of microcapsule-based systems and those based on core-shell vascular networks, *Chemical Engineering Journal*, 344, 206-220, 2018
36. HS Jo, MW Kim, BN Joshi, E Samuel, H Yoon, MT Swihart, **SS Yoon***, Ni-core CuO-shell fibers as highly efficient photocathode for solar water splitting by electrospinning and electroplating, *Nanoscale*, 10, 9720-9728, 2018
37. MW Kim, SP An, KR Kim, TG Kim, HS Jo, DH Park, **SS Yoon***, AL Yarin, Packing of metalized polymer nanofibers for aneurysm embolization, *Nanoscale*, 10, 6589-6601, 2018
38. BN Joshi, E Samuel, MW Kim, SR Park, MT Swihart, WY Yoon, **SS Yoon***, Atomic layer deposited TiO₂-SnZnO/carbon nanofibers as highly stable, flexible, freestanding lithium-ion-battery anodes, *Chemical Engineering Journal*, 338(15), 72-81, 2018
39. 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 Alloys and Compounds*, 741, 781-791, 2018
40. TG Kim, JG Lee, CW Park, MV Hest, DH Cho, YD Jeong, **SS Yoon***, Effect of supersonic spraying impact velocity on opto-electric properties of transparent conducting flexible films consisting of silver nanowire, ITO, and polyimide multilayers, *Journal of Alloys and Compounds*, 739, 653-659, 2018
41. 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, *Journal of Electroanalytical Chemistry*, 810, 239-247, 2018
42. M Sreedhar, J Brijitta, I Neelakanta Reddy, M Cho, J Shim, P Bera, BN Joshi, **SS Yoon**, Dye degradation studies of Mo-doped TiO₂ thin films developed by reactive sputtering, *Surface and Interface Analysis*, 50, 171-179, 2018
43. MW Lee, SP An, **SS Yoon***, AL Yarin, Advances in self-healing materials based on polymer nanofibers, *Advances in Colloid and Interface Science*, 252, 21-37, 2018
44. MW Lee, SP An, YI Kim, **SS Yoon***, AL Yarin, Self-healing three-dimensional bulk materials based on core-shell nanofibers, *Chemical Engineering Journal*, 334, 1093-1100, 2018
45. MW Kim, KR Kim, TY Eom, BN Joshi, E Samuel, MT Swihart, SK Choi, HW Park, **SS Yoon***, Electrosprayed BiVO₄ nanopillars coated with atomic-layer-deposited ZnO/TiO₂ as highly efficient photoanodes for solar water splitting, *Chemical Engineering Journal*, 333, 721-729, 2018
46. 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
47. 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*, 143, 174-180, 2018
48. E Samuel, BN Joshi, HS Jo, YI Kim, MT Swihart, JM Yun, Kwang Ho Kim, **SS Yoon***, Flexible and freestanding core-shell SnO₂/carbon nanofiber mats for high-performance supercapacitors, *Journal of Alloys and Compounds*, 728, 1362-1371, 2017
49. MW Kim, KR Kim, TY Ohm, BN Joshi, E Samuel, H. Yoon, HW Park, **SS Yoon***, Mo-doped BiVO₄ nanotextured-pillars as highly efficient photoanodes for solar water splitting, *Journal of Alloys and Compounds*, 726, 1-9, 2017
50. BN Joshi, JG Lee, E Samuel, TG Kim, IW Seong, WY Yoon, **SS Yoon***, Supersonically blown reduced graphene oxide intertwined Fe-Fe₃C nanofibers for lithium ion battery anodes, *Journal of Alloys and Compounds*, 726, 114-120, 2017

51. 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
52. 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
53. 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
54. 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*, 18, 3219-3229, 2017
55. 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
56. 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
57. 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
58. 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
59. 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
60. 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 Alloys and Compounds*, 722, 996-1001, 2017
61. 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
62. 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
63. 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
64. 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 Alloys and Compounds*, 715, 161-169, 2017
65. 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
66. 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
67. 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
68. MW Lee, HS Jo, **SS Yoon***, AL Yarin, Thermally-driven self-healing using copper nanofiber (CuNF) heater, *Applied Physics Letters*, 111, 011902, 2017
69. 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
70. 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
71. MW Kim, BN Joshi, HS Jo, TY Eom, KR Kim, **SS Yoon***, Electrospayed copper hexaaxodivanadate (CuV₂O₆) and pyrovanadate (Cu₂V₂O₇) photoanodes for efficient solar water splitting, *Journal of Alloys and Compounds*, 708, 444-450, 2017
72. 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
73. 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
74. 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
75. 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
76. 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
77. BN Joshi, SP An, YI Kim, EP Samuel, KY Song, IW Seong, SS Al-Deyab, MT Swihart, WY Yoon, **SS Yoon***, Flexible freestanding Fe₂O₃-SnO_x-carbon nanofiber composites for Li ion battery anodes, *Journal of Alloys and Compounds*, 700, 259-266, 2017
78. 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

79. 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
80. 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
81. 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
82. SH Cho, SW Hwang, BH Kim, KY Bae, H Yoon, **SS Yoon**, WY Yoon, Electrochemical properties of Li metal batteries with P (PEGMA)-coated lithium trivanadate cathode and Li powder anode, *Journal of Nanoscience and Nanotechnology* 16 (10), 10607-10612, 2016
83. SS Pail, MG Mali, MS Tamboli, A Roy, VG Deonikar, DR Patil, SS Al-Deyab, **SS Yoon***, SS Kolekar, BB Kale, Graphene-wrapped Ag₃PO₄/LaCO₃OH heterojunction for water purification under solar light, *Journal of Energy Chemistry*, 25, 845-853, 2016
84. 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
85. 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 Alloys and Compounds*, 692, 294-300, 2017
86. 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-TiO₂ as highly efficient photocathodes, *Applied Catalysis B: Environmental*, 201, 479-485, 2017
87. MW Lee, S Sett, **SS Yoon***, AL Yarin, Self-healing of nanofiber-based composites in the course of stretching, *Polymer*, 103, 180-188, 2016
88. 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
89. 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
90. 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
91. 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
92. 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
93. 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
94. 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
95. 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
96. 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
97. 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
98. 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
99. 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
100. 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
101. 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
102. 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
103. 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
104. 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

- 105.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
- 106.SS Patil, MG Mali, MS Tamboli, 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
- 107.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
- 108.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
- 109.MW Lee, SS Yoon*, AL Yarin, Solution-blown core-shell self-healing nano- and microfibers, *ACS Applied Materials & Interface*, 8, 4955-4962, 2016
- 110.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
- 111.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
- 112.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
- 113.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
- 114.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
- 115.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
- 116.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
- 117.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 In₂O₃ micro-cubes and electro-sprayed Bi₂WO₆ textured nanopillars, *RSC Advances*, 5, 85323-85328, 2015
- 118.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
- 119.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
- 120.MW Lee, SP An, HS Jo, **SS Yoon***, AL Yarin, Self-healing nanofiber-reinforced polymer composites. 2. delamination/debonding and adhesive and cohesive properties, *ACS Applied Materials & Interface*, 7, 19555-19561, 2015
- 121.KD Lee MJ Park, DY Kim, SM Kim, BJ Kang, ST Kim, HH Kim, HS Lee, YM Kang, **SS Yoon**, BH Hong, DH Kim, Graphene quantum dot layers with energy-down-shift effect on crystalline-silicon solar cells, *ACS Applied Materials & Interface*, 7, 19043-19049, 2015
- 122.JS Lee, JH Seo, DJ Lee, HY Kim, **SS Yoon**, Combustion and NO emission characteristics of liquefied petroleum gas/dimethyl ether blended fuel in counterflow non-premixed flame, *Combustion Science & Technology*, 187, 1468-1484, 2015
- 123.S Liu, SS Latthe, Q Xu, L Gao, **SS Yoon**, S An, C Terashima, K Nakata, A Fujishima, Self-cleaning transparent superhydrophobic coatings through simple sol-gel processing of fluoroalkylsilane, *Applied Surface Science*, 351, 897-903, 2015
- 124.JG Lee, DY Kim, BJ Kang, D Kim, SC James, SS Al-Deyab, **SS Yoon***, Thin film metallization by supersonic spraying of copper and nickel nanoparticles on a silicon substrate, *Computational Materials Science*, 108, 114-120, 2015
- 125.JG Lee, YH Cha, DY Kim, JH Lee, TK Lee, WY Kim, D Lee, J Park, SC James, SS Al-Deyab, **SS Yoon***, Robust mechanical properties of electrically insulative alumina films by supersonic aerosol deposition, *Journal of Thermal Spray Technology*, 24, 1046-1051, 2015
- 126.H Yoon, MW Kim, HY Kim, SS Al-Deyab, SC James, SJ Ahn, **SS Yoon***, Three dimensional web-like fibrous CIS₂ film, *Applied Surface Science*, 351, 588-593, 2015.
- 127.H Yoon, HY Kim, MW Kim, SS Latthe, SS Al-Deyab, **SS Yoon***, A highly transparent self-cleaning superhydrophobic surface by organosilane-coated alumina particles deposited via electro spraying, *Journal of Materials Chemistry A*, 3, 11403-11410, 2015
- 128.MG Mali, H Yoon, M Kim, SS Al-Deyab, M Swihart, **SS Yoon***, Electro sprayed heterojunction WO₃/BiVO₄ films of nanotextured pillar structure for enhanced photoelectrochemical water splitting, *Applied Physics Letters*, 106, 151603, 2015
- 129.H Yoon, MG Mali, JY Choi, MW Kim, SK Choi, H Park, MS Swihart, SS Al-Deyab, **SS Yoon***, Nano-textured pillars of electro sprayed bismuth vanadate for efficient photoelectrochemical water splitting, *Langmuir*, 31, 3727–3737, 2015
- 130.JJ Park, JG Lee, SC James, SS Al-Deyab, **SS Yoon***, Thin-film metallization of CuInGaSe₂ nanoparticles by supersonic kinetic spraying, *Computational Materials Science*, 101, 66-76, 2015
- 131.DY Kim, BN Joshi, JG Lee, SS Latthe, SS Al-Deyab, **SS Yoon***, Self-cleaning superhydrophobic films by supersonic-spraying polytetrafluoroethylene-titania nanoparticles, *Journal of Materials Chemistry A*, 3, 3975–3983, 2015
- 132.AB Gurav, Q Xu, SS Latthe, RS Vhatkar, S Liu, H Yoon, **SS Yoon***, Superhydrophobic coatings prepared from methyl-modified silica particles using simple dip coating method, *Ceramic International*, 41, 3017–3023, 2015
- 133.MG Mali, S An, M Liou, SS Al-Deyab, **SS Yoon***, Photoelectrochemical solar water splitting using electrospun TiO₂ nanofibers, *Applied Surface Science*, 328, 109–114, 2015

134. JG Lee, DY Kim, BJ Kang, D Kim, DH Lee, JY Kim, WS Jung, SC James, SS Al-Deyab, **SS Yoon***, Nickel-copper hybrid electrodes self-adhered onto a silicon wafer by supersonic kinetic metallization, *Acta Materialia*, 93, 156-163, 2015
135. HJ Lee, SP An, JH Hwang, SG Jung, HS Jo, KN Kim, YS Sim, CH Park, **SS Yoon**, YW Park, BK Ju, Novel composite layer based on electrospun polymer nanofibers for efficient light scattering, *ACS Applied Materials & Interface*, 7, 68-74, 2015
136. J Seo, JS Lee, HY Kim, **SS Yoon**, Empirical model for the maximum spreading diameter of low-viscosity droplets on a dry wall, *Experimental Thermal and Fluid Science*, 60, 121-129, 2015
137. JS Lee, J Seo, HY Kim, J Chung, **SS Yoon**, Effects of geometry and operating conditions on hydrogen productivity of a fuel cell reformer, *Int. J. Heat and Mass Transfer*, 73, 318-329, 2014
138. S An, MW Lee, NY Kim, CM Lee, SS Al-Deyab, SC James, **SS Yoon***, Effect of viscosity, electrical conductivity, and surface tension on DC-pulsed drop-on-demand electrohydrodynamic printing frequency, *Applied Physics Letters*, 105, 214102, 2014
139. MG Mali, H Yoon, S An, JY Choi, HY Kim, BC Lee, BN Kim, JH Park, SS Al-Deyab, **SS Yoon***, Enhanced solar water splitting of electron beam irradiated titania photoanode by electrostatic spray deposition, *Applied Surface Science*, 319, 205-210, 2014
140. H Yoon, SH Na, JY Choi, SS Latthe, M Swihart, SS Al-Deyab, **SS Yoon***, Gravity-driven hybrid membrane for oleophobic/superhydrophilic oil-water separation and water purification by graphene, *Langmuir*, 30, 11761-11769, 2014
141. SP An, CM Lee, MH Liou, HS Cho, JJ Park, AL Yarin, **SS Yoon***, Supersonically blown ultra-thin thorny devil nanofibers for efficient air cooling, *ACS Applied Materials & Interface*, 6, 13657-13666, 2014
142. MW Lee, SP An, CM Lee, MH Liou, AL Yarin, **SS Yoon***, Hybrid self-healing matrix using core-shell nanofibers and capsuleless micro-droplets, *ACS Applied Materials & Interface*, 6, 10461-10468, 2014
143. DY Kim, S Sinha-Ray, JJ Park, JG Lee, YH Cha, SH Bae, JH Ahn, YC Jung, SM Kim, AL Yarin, **SS Yoon***, Self-healing reduced graphene oxide films by supersonic kinetic spraying, *Advanced Functional Materials*, 24, 4986-4995, 2014
144. H Yoon, SH Na, JY Choi, MW Kim H Kim, HS An, BK Min, SJ Ahn, JH Yun, J Gwak, KH Yoon, SS Kolekar, M van Hest, SS Al-Deyab, MT Swihart, **SS Yoon***, Carbon-free, Oxide-free Cu(InGa)(SSe)₂ Solar Cell with 4.63% Conversion Efficiency by Electrostatic Spray Deposition, *ACS Applied Materials & Interface*, 6, 8369-8377, 2014
145. DY Kim, BN Joshi, JJ Park, JG Lee, YH Cha, TY Seong, SI Noh, HJ Ahn, SS Al-Deyab, **SS Yoon***, Graphene-titania films by supersonic kinetic spraying for enhanced performance of dye-sensitized solar cells, *Ceramic International*, 40, 11089-11097, 2014
146. MW Lee, SP An, CM Lee, MH Liou, AL Yarin, **SS Yoon***, Self-healing Transparent Core-shell Nanofiber Coatings for Anti-corrosive Protection, *Journal of Materials Chemistry A*, 2, 7045-7053, 2014
147. SP An, BJ Joshi, MW Lee, NY Kim, **SS Yoon***, Electrospun Graphene-ZnO Nanofiber Mats for Photocatalysis Applications, *Applied Surface Science*, 294, 24-28, 2014
148. AB Gurav, SS Latthe, RS Vhatkar, JG Lee, **SS Yoon***, Superhydrophobic surface decorated with vertical ZnO nanorods modified by stearic acid, *Ceramic International*, 40, 7151-7160, 2014
149. JJ Park, DY Kim, JG Lee, YH Cha, M Swihart, **SS Yoon***, Supersonic aerosol-deposited TiO₂ photoelectrodes for photoelectrochemical solar water splitting, *RSC Advances*, 4, 8661-8670, 2014
150. H Yoon, BN Joshi, SH Na, JY Choi, **SS Yoon***, Photodegradation of methylene blue of niobium-doped zinc oxide thin films produced by electrostatic spray deposition, *Ceramic International*, 40(5), 7567-7571, 2014
151. SP An, MW Lee, BN Joshi, A Jo, J Jung, **SS Yoon***, Water Purification and Toxicity Control of Chlorophenols by 3D Nanofiber Membranes Decorated with Photocatalytic Titania Nanoparticles, *Ceramic International*, 40, 3305-3313, 2014
152. BN Joshi, H Yoon, SH Na, JY Choi, **SS Yoon***, Enhanced photocatalytic performance of graphene-ZnO nanoplatelet composite thin films by electrostatic spray deposition, *Ceramic International*, 40, 3647-3654, 2014
153. MW Lee, SP An, SS Latthe, SK Hong, **SS Yoon***, Electrospun Polystyrene Nanofiber Membrane with Superhydrophobicity and Superoleophilicity for Selective Separation of Water and Low Viscous Oil, *ACS Applied Materials & Interface*, 5, 10597-10604, 2013
154. SS Latthe, SP An, S Jin, **SS Yoon***, High energy electron beam irradiated TiO₂ photoanodes for efficient water splitting, *Journal of Material Chemistry A*, 1, 13567-13575, 2013
155. DY Kim, JJ Park, JG Lee, HY Kim, DH Kim, SJ Tark, S Chandra, **SS Yoon***, Cold spray deposition of copper electrodes on silicon and glass substrates, *Journal of Thermal Spray Technology*, 22(7), 1092-1102, 2013
156. JJ Park, DY Kim, JG Lee, M van Hest, **SS Yoon***, Wettability and photocatalysis of CF₄ plasma etched titania films of honeycomb structure, *Ceramic International*, 39, 9737-9742, 2013
157. MW Lee, NY Kim, S Chandra, **SS Yoon***, Coalescence of sessile droplets of varying viscosities for line printing, *Int. J. Multiphase Flow*, 56, 138-148, 2013
158. JJ Park, DY Kim, JG Lee, SS Latthe, M Swihart, **SS Yoon***, Thermally-Induced Superhydrophilicity in TiO₂ Films Prepared by Supersonic Aerosol Deposition, *ACS Applied Materials & Interface*, 5, 6155-6160, 2013
159. JH Seo, KH Choi, HY Kim, **SS Yoon**, Numerical investigation of combustion characteristics and wall impingement with the dependence on split injection strategies from a gasoline direct injection engine, *Inst. Mech. Eng., J. Auto. Eng.*, DOI: 10.1177/0954407013491216, 1-18, 2013
160. JS Lee, HY Kim, JT Jung, **SS Yoon**, Effects of combustion parameters on reforming performance of a steam-methane reformer, *Fuel*, 111, 461-471, 2013
161. MW Lee, SS Latthe, AL Yarin, **SS Yoon***, Dynamic Electrowetting-on-dielectric (DEWOD) on Unstretched and Stretched Teflon, *Langmuir*, 29, 7758-7767, 2013
162. BN Joshi, H Yoon, M van Hest, **SS Yoon***, Photocatalysis of niobium-doped titania film via sol-gel method, *J. American Ceramic Society*, DOI: 10.1111/jace.12336, 1-5, 2013
163. S Sinha-Ray, MW Lee, S Sinha-Ray, S An, B Pourdeyhimi, **SS Yoon***, AL Yarin, Supersonic nanoblowing: a new ultra-stiff phase of nylon 6 in 20-50 nm confinement, *Journal of Material Chemistry C*, 1, 3491-8, 2013

164. MW Lee, SP An, BN Joshi, SS Latthe, **SS Yoon***, Highly efficient wettability control via 3D suspension of titania nanoparticles with polystyrene nanofibers, *ACS Applied Materials & Interface*, 5(4), 1232-9, 2013
165. JJ Park, DY Kim, JG Lee, DH Kim, JH Oh, TY Seong, **SS Yoon***, Superhydrophilic transparent titania films by supersonic aerosol deposition, *J. American Ceramic Society*, 96(5), 1596-1601, 2013
166. MW Lee, S. An, NY Kim, JH Seo, J Huh, HY Kim, **SS Yoon***, Effects of pulsing frequency on characteristics of electrohydrodynamic inkjet using micro-Al and nano-Ag particles, *Experimental Thermal & Fluid Science*, 46, 103-110, 2013
167. Y Zhang, MW Lee, S. An, B. Joshi, S Sinha-Ray, S Khansari, AL Yarin, B. Pourdeyhimi, JH Hong, JJ Kim, S Hong, **SS Yoon***, Antibacterial activity of electrospun titania nanofiber mats and solution-blown soy protein nanofiber mats decorated with silver nanoparticles, *Catalysis Communication*, 34, 35-40, 2013
168. MW Lee, NY Kim, **SS Yoon***, On pinch-off behavior of electrified droplets, *Journal of Aerosol Science*, 57, 114-124, 2013
169. BN Joshi, H Yoon, **SS Yoon***, Structural, optical and electrical properties of tin oxide thin films by electrostatic spray deposition, *Journal of Electrostatics*, 71, 48-52, 2013
170. HG Kim, SB Cho, BM Chung, JY Huh, **SS Yoon**, Fire-Through Ag Contact Formation for Crystalline Si Solar Cells Using Single-Step Inkjet Printing, *Journal of Nanoscience and Nanotechnology*, 12, 3620-3623, 2012
171. JJ Park, JG Lee, DY Kim, JH Hong, JJ Kim, S Hong, **SS Yoon***, Antibacterial and Water Purification Activities of Self-Assembled Honeycomb Structure of Aerosol Deposited Titania Film, *Environmental Science & Technology*, 46(22), 12510-8, 2012
172. DY Kim, JJ Park, JG Lee, MW Lee, HY Kim, JH Oh, TY Seong, D Kim, SC James, M van Hest, S Chandra, **SS Yoon***, Tuning hydrophobicity with honeycomb surface structure and hydrophilicity with CF₄ plasma etching for aerosol-deposited titania films, *J. American Ceramic Soc.*, 95(12), 3955-3961, 2012
173. H Yoon, BN Joshi, SH Na, SC James, **SS Yoon***, Antibacterial Activity and Photocatalysis of Electrospayed Titania Films, *Journal of Electrochemical Society*, 159 (11) H823-H827, 2012
174. BN Joshi, H Yoon, HY Kim, JH Oh, TY Seong, SC James, **SS Yoon***, Effect of Zinc Acetate Concentration on Structural, Optical and Electrical Properties of ZnO Thin Films Deposited by Electrostatic Spray on ITO Substrate, *Journal of Electrochemical Society*, 159(8), H716-H721, 2012
175. JH Woo, H Yoon, JH Cha, DY Jung, **SS Yoon***, Electrostatic spray-deposited CuInGaSe₂ nanoparticles: Effects of precursors' Ohnesorge number, substrate temperature, and flowrate on thin film characteristics, *Journal of Aerosol Science*, 54, 1-12, 2012
176. MW Lee, DK Kang, **SS Yoon***, AL Yarin, Coalescence of two droplets on partially wettable substrates, *Langmuir*, 28(8), 3791-3798, 2012
177. MW Lee, JJ Park, MM Farid, **SS Yoon***, Comparison and correction of the breakup models for stochastic spray flow, *Applied Mathematical Modelling*, 36(9), 4512-4520, 2012
178. H Yoon, JH Woo, BN Joshi, YM Ra, **SS Yoon***, HY Kim, SJ Ahn, JH Yun, J Gwak, KH Yoon, SC James, CuInSe₂ (CIS) thin film solar cells by electrostatic spray deposition, *Journal of Electrochemical Society*, 159 (4) H444-H449, 2012
179. DJ Lee, HY Kim*, **SS Yoon**, SC James, Experimental study on the combustion and NO_x emission characteristics of DME/LPG blended fuel using counterflow burner, *Combustion Science & Technology*, 184, 97-113, 2012
180. MW Lee, DK Kang, HY Kim, SC James, **SS Yoon***, A study of ejection modes for pulsed-DC electrohydrodynamic inkjet printing, *Journal of Aerosol Science*, 46, 1-6, 2012
181. MW Lee, JJ Park, DY Kim, **SS Yoon***, HY Kim, DH Kim, SC James, S Chandra, T Coyle, JH Ryu, WH Yoon, DS Park, Optimization of supersonic nozzle flow for thin-film coating by aerosol deposition, *Journal of Aerosol Science*, 42, 771-780, 2011
182. DK Kang, MW Lee, HY Kim, **SS Yoon***, SC James, Electrohydrodynamic inkjet characteristics of various inks containing aluminum particles, *Journal of Aerosol Science*, 42, 621-630, 2011
183. H Yoon, JH Yoo, **SS Yoon***, HY Kim, SJ Ahn, JH Yun, JH Kwak, KH Yoon, SC James, Electrostatic spray deposition of copper-indium thin films, *Aerosol Science & Technology*, 45(12), 1448-1455, 2011
184. MW Lee, JJ Park, DY Kim, **SS Yoon***, HY Kim, SC James, S Chandra, T Coyle, Numerical studies on the effects of stagnation pressure and temperature on supersonic flow characteristics in cold spray applications, *Journal of Thermal Spray Technology*, 20(5), 1085-1097, 2011
185. JJ Park, MW Lee, **SS Yoon*** HY Kim, SC James, SD Heister, S Chandra, WH Yoon, DS Park, J Ryu, Supersonic nozzle flow simulations for particle coating applications: effects of shockwaves, nozzle geometry, ambient pressure, and substrate location upon flow characteristics, *Journal of Thermal Spray Technology*, 20(3), 514-522, 2011
186. B Bang, **SS Yoon***, HY Kim, SD Heister, H Park, SC James, Assessment of gas and liquid velocities induced by an impacting liquid drop, *Int. Jr. Multiphase Flow*, 37, 55-66, 2011
187. EJ Lee, SY Oh, HY Kim*, **SS Yoon**, SC James, Measuring air-core characteristics of a pressure-swirl atomizer in cold environment, *Experimental Thermal & Fluid Science*, 34, 1475-1483, 2010
188. IH Hwang, DJ Lee, **SS Yoon***, HY Kim, SC James, Splashing characteristics of monodisperse sprays with significant viscosity differences impacting a flat surface, *Drying Technology*, 28, 1321-1330, 2010
189. J Liu, H Vu, **SS Yoon***, RA Jepsen, G Aguilar, Splashing phenomena during liquid droplet impact, *Atomization and Sprays*, 20(4), 297-310, 2010
190. DJ Lee, HY Kim*, **SS Yoon**, Numerical studies on group combustion characteristics of staggeringly-arranged heptane droplets in a convective environment, *Fuel*, 89, 1447-1460, 2010
191. **SS Yoon***, TK Blanchat, AL Brown, V Figueroa, Experiments and modeling of benchmark enclosure fire suppression, *Journal of Fire Sciences*, 28, 109-139, 2010
192. JN Kim, HY Kim*, **SS Yoon**, JH Sohn, CR Kim, Numerical studies on mixing characteristics of EGR gases with air and their dependence on system geometries in four-cylinder engine applications, *Inst. Mech. Eng., J. Auto. Eng.*, 223, 585-597, 2009

193. **SS Yoon***, RA Jepsen, SC James, J Liu, G Aguilar, Are drop-impact phenomena described by Rayleigh-Taylor or Kelvin-Helmholtz?, *Drying Technology*, 27, 316-321, 2009
194. **SS Yoon***, HY Kim, DJ Lee, NS Kim, RA Jepsen, SC James, Experimental and numerical splash studies of monodisperse sprays impacting variously-shaped surfaces, *Drying Technology*, 27, 1-9, 2009
195. RA Jepsen, 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, *Measurement Science and Technologies*, 20, 025451, 2009
196. CP Cho, HY Kim*, **SS Yoon**, Interaction of the burning spherical droplets in oxygen-enriched turbulent environment, *Combustion and Flame*, 156, 14-24, 2009
197. S Jo, HY Kim*, **SS Yoon**, Numerical investigation on effects of inlet air temperature on spray combustion in a wall jet can combustion using k-epsilon turbulence model, *Numerical Heat Transfer-Part B*, 54, 1101-1120, 2008
198. Glaze, DJ, **Yoon, SS***, Hewson, JC, DesJardin, PE, Modeling transport phenomena of high mass loadings with applications to fire suppression, *Journal of Numerical Heat Transfer, Part B*, 53, 118-142, 2008
199. Park, H, **Yoon, SS***, Jepsen, RA, Heister, SD, Kim, HY, Droplet bounce simulations and air pressure effects on the deformation of pre-impact droplets, using a boundary element method, *Engineering Analysis with Boundary Element*, 32, 21-31, 2008
200. JN Kim, HY Kim, **SS Yoon, SS**, SD Sa, Effect of intake valve swirl on fuel-gas mixing and subsequent combustion in a CAI engine, *Int. J. Automotive Technology*, 9, 649-657, 2008
201. Cho, CP, Jo, S, Kim, HY*, **Yoon, SS**, Numerical studies on combustion characteristics of interacting pulverized coal particles at various oxygen concentration, *Journal of Numerical Heat Transfer, Part A*, 52, 1101-1122, 2007
202. **Yoon, SS***, Kim, HY, Hewson, JC, Effect of initial conditions of modeled PDFs on coalescing and evaporating turbulent water spray for fire suppression applications, *Fire Safety Journal*, 42, 393-406, 2007
203. **Yoon, SS***, Kim, HY, Hewson, JC, Glaze, DJ, Suo-Anttila, JM, DesJardin, PE, A modeling investigation of suppressant distribution from a prototype solid-propellant gas-generator suppression system into a simulated aircraft cargo bay, *Drying Technology*, 25, 1021-1033, 2007
204. Park, BS, Kim, HY*, **Yoon, SS**, Transitional instability of a pressure-swirl atomizer due to air-core eruption at low temperature, *Atomization and Sprays*, 17, 551-568, 2007
205. Zhao, Y, Kim, HY*, **Yoon, SS**, Transient group combustion of the pulverized coal particles in spherical cloud, *Fuel*, 86, 1102-1111, 2007
206. **Yoon, SS***, Jepsen, RA, Nissen, MR, O'Hern, TJ, Experimental investigation on splashing and nonlinear fingerlike instability of large water drops, *Jr. of Fluids and Structures*, 23, 101-115, 2007
207. **Yoon, SS***, DesJardin, PE, Hewson, JC, Tieszen, SR, Blanchat, TK, Kim, HY, Unsteady RANS modeling of water spray suppression for large scale compartment pool fires, *Atomization and Sprays*, 17, 1-45, 2007
208. Jepsen, RA, **Yoon, SS***, Demosthenous, B., Effects of air on splashing during a large droplet impact, *Atomization and Sprays*, 16, 1-16, 2006
209. Park, H, **Yoon, SS***, Heister, SD, On the nonlinear stability of a swirling liquid jet, *Int. Jr. Multiphase Flow*, 32(9), 1100-1109, 2006
210. **Yoon, SS***, DesJardin, PE, Modeling spray impingement using linear stability theories for shattering droplets, *Int. Jr. Numerical Methods in Fluids*, 50(4), Feb., 469-489, 2006.
211. **Yoon, SS***, DesJardin, PE, Presser, C, Hewson, JC, Avedisian, CT, Numerical modeling and experimental measurements of water spray impact and transport over a cylinder, *Int. Jr. Multiphase Flow*, 32(1), 132-157, 2006.
212. Park, H, **Yoon, SS**, Heister, SD*, A nonlinear atomization model for computation of drop-size distributions and complete spray simulation, *Int. Jr. Numerical Methods in Fluids*, 48(11), 1219-1240, 2005.
213. **Yoon, SS***, Droplet distributions at the liquid core of a turbulent spray, *Physics of Fluids*, 17(3), 035103, 2005.
214. Hewson, JC, **Yoon, SS***, On sampling from prescribed droplet PDFs using computational parcels, *Atomization and Sprays*, 15(2), pp. 119-131, 2005.
215. **Yoon, SS***, Hewson, JC, DesJardin, PE, Glaze, DJ, Black, AR, Skaggs, RR, Numerical modeling and experimental measurements of a high speed solid cone water spray for use in fire suppression applications, *Int. Jr. Multiphase Flow*, 30(11), pp. 1369-1388, 2004.
216. **Yoon, SS***, Heister, SD, Analytic formulas for the velocity field induced by an infinitely thin vortex ring, *Int. Jr. Numerical Methods in Fluids*, 44(6), pp. 665-672, 2004.
217. **Yoon, SS***, Heister, SD, A nonlinear atomization model based on a boundary layer instability mechanism, *Physics of Fluids*, 16(1), pp. 47-61, 2004.
218. **Yoon, SS***, Heister, SD, A fully nonlinear model for atomization of high-speed jets, *Engineering Analysis with Boundary Element*, 28(4), pp. 345-357, 2004.
219. **Yoon, SS***, Heister, SD, Categorizing linear theories for atomizing round jets, *Atomization and Sprays*, 13(5&6), pp. 499-516, 2003.
220. **Yoon, SS**, Heister, SD*, Epperson, JT, Sojka, PE, Modeling multi-jet mode electrostatic atomization using boundary element methods, *Journal of Electrostatics*, 50,(2) pp. 91-108, 2001.
221. **Yoon, SS**, Heister, SD*, Analytic solution for fluxes at interior points for the 2-D Laplace equation, *Engineering Analysis with Boundary Element*, 24(2), pp. 155-160, 2000.

Note: ()*, corresponding author

Proceeding/Conference Papers

1. JH Seo, CP Cho, HY Kim, **SS Yoon**, Combustion Characteristics of Interacting Coal Particles in Staggered, Arrangement for Turbulent and Laminar Flow, The Seventh JSME-KSME Thermal and Fluids Engineering Conference, Oct. 13-16, 2008, Sapporo, Japan
2. EJ Lee, HY Kim, CG Chun, Y Chung, **SS Yoon**, Measuring air-core characteristics of a pressure-swirl atomizer in cold environment, *3rd Int. Sym. On Adv. Fluid/Solid Sci. & Tech. in Exp. Mech.*, Dec. 7-10, Tainan, Taiwan, 2008
3. BB Bang, **SS Yoon**, HY Kim, RA Jepsen, SD Heister, H Park, SC James, Assessment of gas and liquid fluxes induced by liquid drop falling onto a smooth dry plate, ILASS Europe 2008, Como Lake, Italy, Sept 7-10, 2008.
4. **SG Yoon**, MW Lee, HY Kim, Research and development in fire modeling and experiment: Past studies and recent trends, *Korea Multimedia Society*, April, 2008
5. TK Blanchat, AL Brown, V Figueroa, **SS Yoon**, Benchmark enclosure fire suppression experiments and modeling, *Suppression and Detection Research and Applications-A Technical Working Conference (SUPDET)*, March 11-13, Orlando, Florida, USA, 2008
6. J Liu, RA Jepsen, **SS Yoon**, G Aguilar, Effect of ambient pressure and impact angle on splashing threshold during droplet impact, *21st Annual Conference on Liquid Atomization and Spray Systems*, Orlando, Florida, May, 2008.
7. AL Brown, RA Jepsen, **SS Yoon**, Modeling large-scale drop impact: Splash criteria and droplet distribution, *21st Annual Conference on Liquid Atomization and Spray Systems*, Orlando, Florida, May, 2008.
8. AL Brown, SS Yoon, RA Jepsen, Phenomenon identification and ranking exercise and a review of large-scale spray modeling technology, Proceedings of the ASME 2008 Summer Heat Transfer Conference, August 10-14, Jacksonville, Florida, USA, 2008
9. KD Kim, HY Kim, CP Cho, **SG Yoon**, The effect of coal particle arrangement and size difference on combustion characteristics, *34th Korean Society of Combustion (KOSCO) Symposium*, Choonchun, Korea, April, 2007.
10. DJ Lee, HY Kim, CP Cho, **SS Yoon**, The effects of droplets arrangement and size difference on the vaporization and combustion characteristics of liquid fuel droplets, *34th Korean Society of Combustion (KOSCO) Symposium*, Choonchun, Korea, April, 2007.
11. SW Lee, HY Kim, JK Kang, **SS Yoon**, Effect of hydrogen and ethylene gas concentration on their ignition and subsequent deflagration in a confined dome, *34th Korean Society of Combustion (KOSCO) Symposium*, Choonchun, Korea, April, 2007.
12. KD Kim, HY Kim, CP Cho, **SS Yoon**, Combustion characteristics of the interacting spherical droplets in oxygen-enriched turbulent flow, *6th Asia-Pacific Conference on Combustion (ASPACC)*, Nagoya, Japan, May 20-23, 2007.
13. SD Sa, HY Kim, JN Kim, **SS Yoon**, Analysis of flow characteristics for the various swirl ratio of intake port and CAI combustion characteristics, KSAE07-Sxxxx, Ducksan, Korea, 2007.
14. SD Sa, HY Kim, JN Kim, **SS Yoon**, Effects of intake valve timing and lift on mixture formation for the CAI engine, KSAE07-S0008, Changwon, Korea, 2007.
15. **SS Yoon**, HY Kim, DJ Lee, NS Kim, RA Jepsen, Experimental and numerical studies on splashing of mono-disperse spray injected onto a cylindrical rod of various surface shapes, *20th Annual Conference on Liquid Atomization and Spray Systems*, Chicago, Illinois, May, 2007.
16. Jepsen, RA, **Yoon**, SS, James, SC, Investigation of breakup, splash, and fingerlike instabilities for a large water slug impact, *ASME Int. Mech. Eng. Cong. & Exp. (IMECE)*, 2006, Chicago, Illinois, No. IMECE2006-14564
17. CP Cho, S Jo, HY Kim, **SS Yoon**, Y Kim, Effects of oxygen concentration on the combustion characteristics of interacting coal particles, *8th Asia-Pacific International Symposium on Combustion and Energy Utilization*, Oct. 10-12, 2006, Sochi, Russian Federation
18. HY Kim, JN Kim, JH Lee, WT Kim, **SS Yoon**, Analysis of flow and mixing characteristics of CAI-engine for the various exhaust valve timing, F2006P170, *FISITA, World Automotive Congress*, Oct. 22-27, 2006, Yokohama, Japan
19. BS Park, HY Kim, **SS Yoon**, Transitional instability of a pressure-swirl atomizer due to air-core eruption at low temperature, *ICLASS-2006*, Aug. 27-Sept. 1, 2006, Kyoto, Japan
20. **SS Yoon**, PE DesJardin, JC Hewson, SR Tieszen, TK Blanchat, HY Kim, Unsteady RANS modeling of water spray suppression for large scale compartment pool fires, *ICLASS-2006*, Aug. 27-Sept. 1, 2006, Kyoto, Japan
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 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. AL Yarin, MW Lee, SP An, **Yoon, SS**, *Self-Healing Nanotextured Vascular Engineering Materials*, 2019, Springer, ISBN 978-3-030-05266-9, <https://doi.org/10.1007/978-3-030-05267-6>
2. **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 기관, 10-2011-0060848, 10-1218888
8. 태양전지 제조 장치 및 이의 제어 방법, 10-2011-0060846, 10-1242299
9. 태양전지 전극 및 페시베이션층 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. 항공 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 증입자 분쇄
23. 선택적 투과 및 수처리를 위한 그래핀/고분자 복합 막
24. 오수 정화용 재활용이 가능한 그래핀 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

- Editorial Board, *Journal of Aerosol Science* (Aug. 1st 2019 – July 31st 2022)
- Associate Editor, *Journal of Mechanical Science & Technology* (2013.04.01 – 2019.03.31)
- 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) \12,0*00 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 유연기판 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. 증질/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, Electrospray 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