TAEGUN KIM

Ph. D. candidate

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RESEARCH INTERESTS

- **Thin film coating process**: Cold Gas Dynamic Spray (CGDS) & Aerosol Deposition (AD)
- **Photocatalysis applications** : Water purification, Self-cleaning
- **Materials research**: Graphene(TCO, Heat sink), Lithium ion battery(Anode), Ceramic(TiO2), Metal(Copper, Fe_2O_3), AgNW(Silver Nanowire)

EDUCATION

- Master course in Mechanical Engineering
  Korea University, Seoul, Korea
  Advisor: Prof. Sam S. Yoon
- Bachelor of Mechanical System Design Engineering, Feb. 2016,
  Seoul National University of Science and Technology, Seoul, Korea
  Advisor: Prof. Seong-Dong Kim

EMPLOYMENT

- 2016/Aug. to 2016/Dec.: Teaching Assistant, School of Mechanical Engineering, ***Korea University***, Creativity in machine design: Capstone design.
- 2017/Mar. to 2017/June: Teaching Assistant, School of Mechanical Engineering, ***Korea University,*** Thermodynamics1.
- 2017/Aug. to 2017/Dec.: Teaching Assistant, School of Mechanical Engineering, ***Korea University,*** Thermodynamics2.

PUBLICATIONS

1. MW Kim†, **TG Kim†**, HS Jo, JG Lee, SC James, MS Choi, WY Kim, JS Yang, J Choi, Sam S. Yoon*, Nano-textured Surfaces using Hybrid Micro- and Nano-Materials for Efficient Water Cooling, ***International Journal of Heat and Mass Transfer(IF=3.458),*** **2018**
2. HS Jo†, **TG Kim†,** JG Lee, HG Park, SC James, JH Choi, SS Yoon*, supersonically sprayed nanotextured surface with silver nanowires for enhanced pool boiling, ***International Journal of Heat & Mass Transfer*****(IF=3.458**), **2018**
3. 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, ***Nano Energy(IF=12.343),*** submitted.
4. YI Kim†, S An†, MW Kim, HS Jo, **TG Kim**, AL Yarin*, SS Yoon*, Spiky Cactus-Like Nickel-Silver Core-Shell Microfibers for Flexible Electronics, ***Nanoscale (IF=7.367),*** submitted.

5. B. Joshi†, E. Samuel†, **TG Kim**, CW Park, YI Kim, Mark T. 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 Power Sources*(IF=6.395),** submitted.
6. **TG Kim**†, JG Lee†, CW Park, HS Jo, MW Kim, DH Cho, YD Chung*, 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*(IF=3.133), 2017**
7. **TG Kim**†, JG Lee†, 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*(IF=2.942),** submitted.
8. HS Jo†, MW Kim†, **TG Kim**, S An, HG Park, JG Lee, SC James, JH Choi*, SS Yoon*, Supersonically spray-coated copper meshes as textured surface for pool boiling, ***International Journal of Thermal Sciences (IF=3.615)***, Under review
9. JG Lee†, SP An†, **TG Kim**, MW Kim, HS Jo, MT Swihart, AL Yarin*, SS Yoon*, Self-Cleaning Anticondensing Glass via Supersonic Spraying of Silver Nanowires, Silica, and Polystyrene Nanoparticles, ***ACS Applied Materials & Interfaces* (IF=7.145), 2017**
10. 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*(IF=3.458), 2017**
11. B Joshi†, JG Lee†, E Samuel, **TG Kim**, WY Yoon*, SS Yoon*, "Supersonically Blown reduced graphene oxide intertwined Fe-Fe_3C nanofibers for lithium ion battery anodes" ***Journal of Alloys and Copounds*(IF=3.133), 2017**
12. E Samuel†, JG Lee†, B Joshi, **TG Kim**, MW Kim, IW Seong, WY Yoon*, SS Yoon*, "Supersonic Cold Spraying of Titania Nanoparticles on Reduced Graphene Oxide for Lithium Ion Battery Anodes", ***Journal of Alloys and Copounds*(IF=3.133), 2017**
13. JG Lee†, DY Kim†, **TG Kim**, JH Lee, SS. Al-Deyab, HW Lee, JS Kim, DH Yang, AL. Yarin*, SS Yoon*, "Supersonically Sprayed Copper-Nickel Microparticles as Flexible and Printable Thin-Film High-Temperature Heaters", ***Advanced Materials Interfaces*(IF=4.279), 2017**
14. JG Lee†, JH Lee†, S An, DY Kim, **TG Kim**, SS. Al-Deyab, A Yarin, SS Yoon*, "Highly Flexible, Stretchable, Wearable, Patternable, Transparent Heaters on Complex 3D Surface formed from Supersonically Sprayed Silver Nanowires", ***Journal of Materials Chemistry A*(IF=8.867), 2016**
15. JG Lee†, B Joshi†, JH Lee, **TG Kim**, DY Kim, SS. Al-Deyab, IW Seong, M 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* (IF=4.803),2016**

PRESENTATIONS

1. **Tae-Gun Kim**, Sam S. Yoon* Supersonically-Sprayed Aerogel and Clay particles as Thermal Barrier Films., Tokyo, Japan, Nov. 4-6th, 2017
2. **Tae-Gun Kim**, Anti-condensing, Thermally-insulating, and Self-cleaning Glass by Supersonic Spraying of Silver Nanowires, Silica, and Polystyrene Nanoparticles, Pusan, Korea, Nov. 6-7th, 2017
3. **Tae-Gun Kim**, Jong-Gun Lee, The Electrical and Mechanical Properties of kinetic Sprayed Ni-Cu Electrodes, Gwang-Ju, Korea, Mar. 14-15th, 2017
4. **Tae-Gun Kim**, Jong-Hyuk Lee, Jong-Gun Lee, Supersonic sprayed Fe-Fe_3C nanofibers entangled with reduced graphene oxide for lithium ion battery anodes, Hong Kong, China, Jan. 19-21th, 2017

SKILLS

- Technique: SEM (Scanning electron microscopy), EDX (Energy dispersive x-ray spectroscopy), AFM (Atomic force microscopy), XRD (X-ray diffraction), XPS (X-ray photoelectron spectroscopy), FTIR (Fourier transform infrared spectroscopy), Raman spectroscopy, UV-VIS

spectrometer, TEM (Transmission electron microscopy).

- Device fabrication: Aerosol deposition, Cold spray thin film deposition

REFERENCE

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