Seong Hyuk Lee, Ph. D.

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HIGHLIGHTED RESEARCH AREAS

1. Computational Physics (Fluid Dynamics, Heat/Mass Transfer, Multiphysics)
2. Electrospay with Biocompatible Materials
3. Interface Phenomena in Contact Line Region
4. Microscale Visualization Technique (Surface Plasmon Resonance Imaging and PIV)
5. Phase Change Heat Transfer (Evaporation/Condensation)

BIOGRAPHY

Seong Hyuk Lee is currently professor of the Department of Mechanical Engineering at Chung-Ang University (CAU). He received his bachelor, master, and Ph.D. degrees from the Mechanical Engineering Department, Chung-Ang University, South Korea, in 1992, 1995, and 1999, respectively. He joined Professor Joon Sik Lee's research group first at Seoul National University in 2001 and exploited micro-scale thermal physics for three years. Then, he joined the CAU School of Mechanical Engineering in 2004 and was promoted to professor in 2013. Also, he visited ME-EM Department of Michigan Technological University (USA) as visiting scholar in 2010, and worked together with Prof. Chang Kyoug Choi about evaporation and frosting phenomena using the near-field visualization technique.

Professor Lee has made important contributions to phase change heat transfer phenomena such as evaporation, condensation, and frosting, and focused on visualizing droplet evaporation, especially with the use of confocal microscopy and surface plasmon resonance (SPR) imaging to capture high-resolution images during evaporation. With the visualization results, he has even suggested a new model for estimating evaporation flux at the edge of a sessile droplet during evaporation. In addition, his research group has conducted many industrial and academic research projects by using the multi-scale/multi-physics simulations. His research group is recently advancing the field of nanoscale energy transport, including diffusive-ballistic polariton transport in thin metal films, even to find out a new scale-up simulation method.

Until now, he has published ~182 journal articles and over 230 conference presentations. Besides, Professor Lee has done extensive service within and outside CAU. He served as the Head of Next Generation Energy Safety Research Institute in CAU. Also, he served as the head of the Department of Mechanical Engineering in CAU from September 2012 to February 2015. Outside CAU, he is serving on the editorial board of JMST(*Journal of Mechanical Science and Technology*), JMST-advanced, and Applied Sciences. He is now serving as vice-chairman of KSME (Korea Society of Mechanical Engineers)-Thermal Division and ILASS-KOREA.

Also, he received Young Scientist Award (KSME) in 2016, Best Award on Industrial Collaboration (CAU), together with some of the best paper awards, notably Best Paper Award from Minister of Land,

Infrastructure, and Transport (South Korea) in 2019, Best Paper Award from IJACR (International Journal of Air-Conditioning and Refrigeration) and JMST (Journal of Mechanical Science and Technology, 2020. Also, he received the best paper award from UKC2020 (organized by KSEA) in 2020.

EDUCATION / PROFESSIONAL PREPARATION

4/2001 – 2/2004 Post-doctoral research fellow in Seoul National University (Micro Thermal System Research Center, ERC project supported by NRF)

- Microscale Heat Transfer (subject: ultrashort pulse laser interaction with dielectrics and semiconductors)
- Simulation program development for thin film optics and Fokker-Planck equation
- Thermal radiation in semiconductor manufacturing
- Advisors: Drs. Joon Sik Lee, Seungho Park.

3/1999 – 3/2001 Post-doctoral research fellow in Chung-Ang University (Department of Mechanical Engineering)

- Conducted in the area of turbulent flows and two-phase flows in diesel spray interaction with solid walls
- Advisors: Dr. H.S. Ryou

3/1995 – 2/1999 Chung-Ang University, Seoul, Korea

- Ph.D. in the Department of Mechanical Engineering
- *Dissertation*: Development of a New Model and Heat Transfer Analysis of Impinging Diesel Sprays on a Wall
- Advisor: Dr. H.S. Ryou

3/1993 – 2/1995 Chung-Ang University, Seoul, Korea

- MS in the Department of Mechanical Engineering
- Turbulence Modeling and Computational Fluid Dynamics
- *Thesis Title*: Numerical Simulation of Three-dimensional Turbulent Boundary Layer in a 30 degree Bend Using the Reynolds Stress Closure
- Advisor: Dr. H.S. Ryou

3/1989 – 2/1993 Chung-Ang University, Seoul, Korea

- BS in the Department of Mechanical Engineering

APPOINTMENTS

- 2013/March to Present: Professor, School of Mech. Eng. Chung-Ang Univ.
- 2022/January to Present: Director, Multidimensional Battery Research Institute, Chung-Ang

University.

- 2012/September to 2015/Feb.: Department Chairperson, Department of Mech. Eng. Chung-Ang Univ.
- 2010/September to 2011/August: Visiting Professor, Michigan Technology University. USA.
- 2008/March to Present: Associate Professor, School of Mech. Eng. Chung-Ang Univ.
- 2011/Sept. to 2013/Feb.: Director, Next Generation Energy Safety Research Institute, Chung-Ang University
- 2005/March to 2007/Feb.: Vice-Chairman, School of Mech. Eng. Chung-Ang Univ.
- 2004/March to 2008/Feb: Assistant Professor, School of Mech. Eng. Chung-Ang Univ.
- 2003/May to 2004/Feb: Post-Doctoral Research Fellow, Micro Thermal System Research Center, Seoul National University, Seoul, Korea.
- 2001/April to 2003/April: Post-Doctoral Research Fellow, BK21 Seoul National University
- 1999/March to 2001/March: Post-Doctoral Research Fellow, Research Institute of Production Engineering, Chung-Ang University

PROFESSIONAL EXPERIENCE

Editorship

- **Associate Editor,** *Journal of Mechanical Science & Technology Advances (Since 2018)*
- **Associate Editor,** *Journal of Mechanical Science & Technology (Since 2017)*
- **Associate Editor,** *International Journal of Air-Conditioning and Refrigeration (Since 2021)*
- **Guest Editor,** *Applied Sciences (Special Issue: Computational Fluid Mechanics and Heat Transfer) (Since 2019~2021.03)*

International conference organizing committee members

- NOC member: Heat Pump Conference 2020, National Organizing Committee (NOC) member. April 26-20, 20201, Ramada Plaza Hotel Jeju, Jeju, Korea.
- International Committee Member on Visualization of Heat Transfer (K-22), 2011-2012 THE ASME Heat Transfer Division, 2011.
- ACTS Asian Conference on Thermal Sciences 2017, LOC **March 26 - 30, 2017 / Jeju, Korea**
- ILASS-ASIA 2010, Organizing Committee, International Committee Member. (2010)

Domestic conference organizing committee members

2010 년 열공학부문 춘계학술대회 조직위원 (2010)
2012 년 대한기계학회 추계학술대회 조직위원 (2012)

Professional committee

- 국제냉동기구한국위원회, 이사 (2021.3.1~2024.2.29)
- ILASS-ASIA Board Member, (2021.1.1~현재)
- 대한기계학회 열공학부문, 부회장(2020.1~현재)
- 한국분무공학회 부회장/편집위원장 (2020.1~현재)
- 대한설비공학회 저온설비부문위원(콜드체인부문) (2016.1.1~ 현재)
- 대한설비공학회 국제협력부문위원 (2017.1.1~ 현재)
- 대한설비공학회 냉동부문위원 (2017.1.1.~ 현재)
- 한국연구재단 기초연구본부 공학단 전문위원 (2020.11.1~2022.10.31)
- 서울시 사전재난영향성검토 위원회 위원 (2020.7.2~2022.7.1)

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- 수도권매립지관리공사 기술자문설계심의 분과위원회 기계분과위원 (2019.7.1~2020.6.30)
- 건설교통 연구 평가단 평가위원/자문위원 (2011, 9/6~2012.12)
- 가스기술기준위원회 분과위원(냉동기 특정설비 분과) (2011.12.1 ~ 2020.11.30)
- 연구소장, 중앙대학교 차세대에너지안전연구소 소장 (2011.9.1~ 2012.12.31)

- 대한설비공학회 총무이사 (2017.1.1~2020.12.31)
- 대한기계학회 열공학부문 재무이사/총무이사(2017.1.1 ~ 2019.12)
- 대한기계학회 열공학부문 학술이사/편집이사 (2008.1.1~2016.12.31)
- 에너지 인력양성사업단장 (에너지기술평가원) (2008.7~2011.7)
- 한국액체미립화학회(분무공학회) 총무이사/편집이사 (2006.1.1 ~ 2019.12)
- 전산유체공학회 학술이사 (2009.1~2011.12)

AWARDS

1. IJACR Best Paper Award in 2020, *Condensation frosting characteristics of SAM coated nanostructured superhydrophic surface"*. (IJACR 최우수논문상)
2. 2019 JMST Best Paper Award, JMST, 2020. "*Quantitative measurement of Quantitative measurements of nanoparticle layer thicknesses near the contact line region after droplet drying-out"*
3. Best Paper Award, Minister of Land, Infrastructure, and Transport (최우수논문 국토교통부장관상), 2019.
4. Best Paper Award, Society of Air-conditioning and Refrigerating Engineers of Korea(대한설비공학회 학술대회 우수논문상), 2018.
5. Best Paper Award, Society of Air-conditioning and Refrigerating Engineers of Korea (대한설비공학회 학술대회 우수논문상), 2017.

6. Young Scientist Award, Korean Society of Mechanical Engineers (대한기계학회 열공학 젊은과학자상, 열공학부문), 2016.
7. Best Award on Industrial Collaboration, Chung-Ang University (산학협력우수상, 중앙대학교), 2012.
8. Best Paper Award, Korea Heat Treatment Society (열처리학회,우수논문상), 2009.

COURSES TAUGHT

- Fluid Mechanics
- Thermodynamics
- Heat Transfer
- Computational Fluid Dynamics and Application
- Multiphase Flows
- Applied Thermal Engineering and Design
- Nano-to-micro transport process and its application

REVIEWERS

- Experiments in Fluids (Since 2009)
- Langmuir (2008)
- Experimental Thermal and Fluid Science (2010)
- Transactions of the ASME-Journal of heat transfer (2011)
- International Journal of Heat and Mass Transfer (Since 2014)
- Journal of Mechanical Science and Technology Advances (Since 2018)
- Journal of Mechanical Science and Technology Advances (Since 2018)
- Applied Thermal Engineering
- International Journal of Thermal Science

INVITED TALKS

1. ILASS-ASIA, Plenary Lecture, Surface plasmon resonance imaging of evaporating thin film in the contact line region of a sessile droplet, China, 23rd-26th, Oct., 2020.
2. Quantitative analysis of evaporating thin films in the contact line region using high-resolution surface plasmon resonance imaging, Taiwan, APTSE, 2019
3. Korea-Japan Joint Seminar on Heat Transfer, 2018. 03.23-25, Jeju, Korea
4. UKC conference 2019
5. SG – 추후
6. POSTECH – 2020, Oct. 14, Dept. Mech. Engr, POSTECH

PUBLICATIONS

Peer-reviewed International Journal Publications (Since 2014):

2022

1. Hong Seok Kim and Seong Hyuk Lee, Numerical Analysis of Heat Transfer Area Effect on Cooling Performance in Regenerator of Free-Piston Stirling Cooler, *Case studies in Thermal Engineering*, under review.
2. Joo Hyun Moo, Jungho Lee, and Seong Hyuk Lee, Numerical Study of the Boiling Heat Transfer Characteristics of Bluff Body Quenching in Cylindrical Tube, *Case studies in Thermal Engineering*, under review.
3. Joo Hyun Moon, Soyeong Lee, Jungho Lee, and Seong Hyuk Lee, Numerical Study on Subcooled Water Jet Impingement Cooling on Superheated Surfaces, *Case studies in Thermal Engineering*, under review.
4. Kyeong Ho Jang, Hyung Ju Lee, and Seong Hyuk Lee, Evaluation of surface temperature uniformity of multi-zone ceramic heaters with embedded cooling channels for electrostatic chuck, *Journal of Mechanical Science and Technology*, Vol. 36, March, 2022. (IF: 1.734)

2021

5. Chan Ho Jeong, Hyung Ju Lee, Chang Kyoung Choi, and Seong Hyuk Lee, Review of the Binary Mixture Droplet Evaporation Studies, *Journal of Mechanical Science and Technology*, Vol. 35, pp. 5259-5272, December, 2021. (IF: 1.734)
6. Hyung Ju Lee and Seong Hyuk Lee, Numerical evaluation on surface temperature uniformity of multi-zone and single-zone heaters with electrostatic chuck, *Journal of Mechanical Science and Technology*, Vol. 35, pp. 3763-3770, July, 2021. (IF: 1.734)
7. Chan Ho Jeong, Hyung Ju Lee, Chang Kyoung Choi, and Seong Hyuk Lee, Selective evaporation rate modeling of volatile binary mixture droplets, *International Journal of Heat and Mass Transfer*, Vol. 178, 121584, October, 2021. (IF: 5.584, Top 7%)
8. Joo Hyun Moon, Chang Kyoung Choi, and Seong Hyuk Lee, Local mass flux and pinning behavior of an evaporating droplet on heated aluminum surfaces, *Case Studies in Thermal Engineering*, Vol. 26, 101171, August, 2021. (IF: 4.724, Top 11%)

9. Joo Hyun Moon, Sang Min Lee, Chang Kyoung Choi, and Seong Hyuk Lee*, Dynamic Characteristics of Droplet Impingement on Microscale Hole-Patterned Surfaces with Anodization, *International Communications in Heat and Mass Transfer*, Vol. 124, 105260, May, 2021. (IF: 5.683, Top 6%)
10. Chan Ho Jeong, Kwan Gu Kang, Hyung Ju Lee, Ui Joon Park, Hong Seok Kim, Jin-Yeong Park, and Seong Hyuk Lee, Numerical investigation on the evolution of thin liquid layer and dynamic behavior of an electro-thermal drilling probe during close-contact heat transfer, *Applied Sciences*, Vol. 11, No. 8, 3443, April, 2021. (IF: 2.679)
11. Hyung Ju Lee, Chan Ho Jeong, Dae Yun Kim, Chang Kyoung Choi, and Seong Hyuk Lee, Solid-liquid interface temperature measurement of evaporating droplet using thermoresponsive polymer aqueous solution, *Applied sciences*, Vol. 11, No. 8, 3379, April, 2021. (IF: 2.679)
12. Ui-Joon Park, Kwangu Kang, Hyung Ju Lee, Chan Ho Jeong, Jin-Yeong Park, and Seong Hyuk Lee, Numerical analysis of the close-contact heat transfer of the electro-thermal drilling probes for glacier-ice exploration, *Journal of Mechanical Science and Technology*, Vol. 35, pp. 1309–1317, February, 2021. (IF: 1.734)
13. Chan Ho Jeong, Hyung Ju Lee, Dae Yun Kim, Shahab Bayani-Ahangar, Chang Kyoung Choi, and Seong Hyuk Lee, Quantitative analysis of contact line behavior of evaporating binary mixture droplet using surface plasmon resonance imaging, *International Journal of Heat and Mass Transfer*, Vol. 165 (Part A), 120690, February, 2021. (IF: 5.584, Top 7%)

2020

14. Shahab Bayani-Ahangar, Fei Long, Jeffery S. Allen, Chan Ho Jeong, Seong Hyuk Lee, and Chang Kyoung Choi, The effect of absorbed volatile organic compounds on the surface plasmon resonance measurement of ultrathin film in dropwise condensation, *Applied Science*, Vol. 10, No. 17, 5981, August, 2020. (IF: 2.217, Top 50%)
15. Dae Yun Kim, Chan Ho Jeong, Hyung Ju Lee, *Chang Kyoung Choi, and Seong Hyuk Lee*, Modeling of the finite boundary limit of evaporation flux in the contact line region using the surface plasmon resonance imaging, *International Communications in Heat and Mass Transfer*, Vol. 116, July, 2020. (IF: 4.127) *[Corresponding authors]*
16. Chan-Ho Jeong, Min Kyu Ko, Moonjin Lee, and *Seong Hyuk Lee*, CFD-based metamodeling of propagation distribution of styrene spilled from ship, *Applied Science*, Vol. 10, No. 6, 2109, March, 2020. (IF: 2.217) *[Corresponding author]*

17. Hyung Ju Lee and *Seong Hyuk Lee*, Effect of Secondary Vortex Flow near Contact Point on Thermal Performance in the Plate Heat Exchanger with Different Corrugation Profiles, *Energies*, Vol. 12, No. 6, March, 2020. (IF: 2.707) *[Corresponding author]*
18. Shahab Bayani Ahangar, Jeffrey S. Allen, and *Seong Hyuk Lee, and Chang Kyoung* Choi, Surface Plasmon Resonance Imaging: A Technique to Reveal the Dropwise Condensation Mechanism, *ASME Journal of Heat Transfer*, Vol. 142, No.3, Photo gallery, 030903, March, 2020. *[Corresponding authors]*
19. Shahab Bayani Ahangar, Vinaykummar Konduru, Jeffrey S. Allen, Nenad Miljkovic, *Seong Hyuk Lee, and Chang Kyoung Choi*, Development of Automated Angle-Scanning, High-speed Surface Plasmon Imaging for Visualization of Dropwise Condensation, *Experiments in Fluids*, Vol. 61, Vol. 12, doi.org/10.1007/s00348-019-2844-9, 2020. (IF=2.443) *[Co-Corresponding authors]*

2019

20. Min Kyu Ko, Chang Ho Jeong, Moonjin Lee, and *Seong Hyuk Lee*, Development of a Metamodel for Predicting Near-Field Propagation of Hazardous and Noxious Substances Spilled from a Ship, *Applied Sciences*, Vol. 9, No. 18, 3838, 2019 (IF= 2.217) *[Corresponding author]*
21. Hyung Ju Lee, *Jaivoung Ryu, and Seong Hyuk Lee*, Influence of Perforated Fin of Flow Characteristics and Thermal Performance in Spiral Finned-Tube Heat Exchanger, *Energies*, Vol. 12, No. 3 pp. 556, 2019. (IF=2.676) *[Corresponding authors]*
22. Dae Yun Kim, Chan Ho Jeong, Beom Jin Park, Min Suk Ki, Myung-Soo Shin and Seong Hyuk Lee, Numerical Study on Gaseous CO2 Leakage and Thermal Characteristics of Containers in a Transport Ship, *Applied Sciences*, Vol. 9, pp. 2536. 2019. (IF=2.217) *[Corresponding author]*
23. Hongyi Kenneth Tan, Jong Dae Baek, Chen-Nan Sun, Jun Wei, *Seong Hyuk Lee, Pei-Chen Su*, Effect of laser-derived surface remelting of YSZ electrolyte on performance of SOFCs, *International Journal of Precision Engineering and Manufacturing (Green Technologies)*, Vol. 6, pp. 225-239, 2019. (IF: 3.774, Top 10%) *[Corresponding authors]*

24. D.H. Shin, D.Y. Kim, *C.K. Choi*, *S.H. Lee*, Quantitative measurements of nanoparticle layer thicknesses near the contact line region after droplet drying-out, *Journal of Mechanical Science and Technology*, Vol. 33, No.2, pp.1-5, 2019. (IF: 1.194) *[Corresponding authors]*

25. J.H. Moon, M. Cho, *S.H. Lee*, Dynamic contact angle and liquid displacement of a droplet impinging on heated textured surfaces, *Experimental Thermal and Fluid Science*, Vol. 101, 128-135, 2019. (IF: 3.204, Top 14%) *[Corresponding author]*

2018

26. C.H. Jeong, M.K. Ko, M. Lee, *S.H. Lee*, Numerical Simulation on Propagation Characteristics of Hazardous Noxious Substance Spilled from the Transport Ship, *Applied Science*, Vol. 8, No. 12, 2409, 2018. (IF: 2.217) *[Corresponding author]*

27. J. Moon, S. Lee, *C.K. Choi*, *S.H. Lee*, Modeling of Evaporation Rates of Liquid Droplets on Anodized Heated Surfaces, *International Communications in Heat and Mass Transfer*, Vol. 98, 209-215, 2018. (IF: 4.463, 4%) *[Corresponding authors]*

28. S. Bayani, Y. Tabe, Y.T. Kang, *S.H. Lee*, *C.K. Choi*, High-Speed Surface Plasmon Resonance Imaging and Image Processing Method, *Journal of Flow Visualization and Image Processing*, Vol. 25, No.3-4, 191-205, 2018. *[Corresponding authors]*

29. Joo Hyun Moon, *Chang.Kyoung. Choi*, Jeffry S. Allen, *Seong Hyuk Lee*, Observation of a Mixed Regime for an Impinging Droplet on a Sessile Droplet, *International Journal of Heat and Mass Transfer*, Vol. 127 (Part C), 130~135, 2018. (IF: 3.891, Top 7%) *[Corresponding authors]*

30. C.H. Jeong, D.H. Shin, V. Konduru, J. Allen, *C.K. Choi*, *S.H. Lee*, Quantitative Measurements of Nanoscale Thin Frost Layers Using Surface Plasmon Resonance Imaging, *International Journal of Heat and Mass Transfer*, 124, 83~89, 2018 (September). (IF: 3.891, Top 7%) *[Corresponding authors]*

31. Joo Hyun Moon, So Yeong Lee, Jee Min Park, Jungho Lee, Daejoong Kim, *Seong Hyuk Lee* , Numerical study on flow and heat transfer characteristics of air-jet cooling system, *Journal of Mechanical Science and Technology*, Vol. 32, Issue 12, 2018. (IF:1.194) *[Corresponding author]*

32. Jeongmin Lee, Hyung Ju Lee, Jaiyoung Ryu, *Seong Hyuk Lee*, Three-dimensional turbulent flow and heat transfer characteristics of longitudinal vortices embedded in turbulent boundary layer in bent channels, *International Journal of Heat and Mass Transfer*, Vol. 117, 958-965, 2018. (IF: 3.891, Top 7%) *[Corresponding author]*

33. Chan Ho Jeong, *Seong Hyuk Lee*, Condensation frosting characteristics of SAM coated nanostructured superhydrophobic surface, *International Journal of Air-Conditioning and Refrigeration*, Vol. 26, No.1, 2018. *[Corresponding author]*

34. Jee Min Park, Dae Yun Kim, Jong Dae Baek, Yong-Jin Yoon, *Pei-Chen Su, Seong Hyuk Lee*, Effect of electrolyte thickness on electrochemical reactions and thermo-fluidic characteristics inside a SOFC unit cell, *Energies*, Vol. 11, No. 3, 2018. (IF: 2.676, Top 49%) *[Corresponding authors]*

35. Jung Hee Lee, Joo Hyun Moon, *Seong Hyuk Lee*, Numerical investigation on electrical and thermal characteristics of vertical-cavity surface-emitting lasers, *Journal of Mechanical Science and Technology*, Vol. 32, No.3, 2018. (IF: 1.194) *[Corresponding author]*

36. Jee Min Park, Dae Yun Kim, Jong Dae Baek, Yong Jin Yoon, *Pei-Chen Su, Seong Hyuk Lee*, Numerical study on electrochemical performance of low-temperature micro-solid oxide fuel cells with submicron platinum electrodes, *Energies*, Vol. 11, No. 5, 2018. (IF: 2.676, Top 49%) *[Corresponding authors]*

37. Taehun Kim, Dae Yun Kim, Junseo Yun, Banseok Kim, Seong Hyuk Lee, Dongseob Kim, Sangmin Lee, Direct-current triboelectric nanogenerator via water electrification and phase control, *Nano Energy*, Vol. 52, 95-104, 2018. (IF: 13.12, Top 6%) *[Co-author]*

38. Tsung-Han Lee, Jong Dae Baek, Liangdong Fan, Florencia Edith Wiria, *Pei-Chen Su, Seong Hyuk Lee*, SDC-infitrated microporous silver membrane with superior resistance to thermal agglomeration for cathode-supported solid oxide fuel cells, *Energies*, Vol. 11, No. 9, 2018. (IF: 2.676, Top 49%) *[Corresponding authors]*

2017

39. Longnan Li, Jinwook Choi, Joowon Bang, Soyeong Lee, Seong Hyuk Lee, Daejoong Km, Numerical investigation of LNG gas dispersion in a confined space: An engineering model, *Journal of Mechanical Science and Technology*, Vol. 31, pp. 4533-4540. Sep., 2017. (IF: 1.128)

[Co-author]

40. Kang-Yu Liu, Yong Jin Yoon, *Seong Hyuk Lee*, *Pei-Chen Su*, Sputtered nanoporous PtNi thin film cathodes with improved thermal stability for low temperature solid oxide fuel cells, *Electrochimica Acta*, Vol. 247, pp.558-563. Sep., 2017. (IF: 4.798, Top 12%) *[Corresponding authors]*
41. Hyung Ju Lee, Jaeyong Park, *Seong Hyuk Lee*, Numerical investigation for influence of fan speed and swirling gas injection on thermal-flow characteristics in nitrocarburizing furnace, *Materials Transactions*, Vol. 58, pp. 1322-1328. Sep., 2017. (IF: 0.713) *[Corresponding author]*
42. Wei Xuan Chan, *Seong Hyuk Lee*, Namkeun Kim, Choongsoo S. Shin, *Young Jin Yoon*, Mechanical model of an arched basilar membrane in gerbil cochlea, *Hearing Research*, Vol. 345, pp.1-9. Mar., 2017. (IF: 2.906, Top 6%) *[Corresponding authors]*
43. Chan Ho Jeong, Dong Hwan Shin, Vinaykumar Konduru, Jeffrey S. Allen, *Chang Kyoung Choi*, *Seong Hyuk Lee*, High speed SPR visualization of frost propagation inside a subcooled water droplet, *Journal of Heat Transfer-Transactions of ASME*, Vol. 139, p. 020905. Feb., 2017. (IF: 1.866, Top 34%) *[Corresponding authors]*
44. Shol Kim, Seong Hyuk Lee, Yong Tae Kang, Characteristics of CO_2 hydrate formation/dissociation in H_2O-THF aqueous solution and estimation of CO_2 emission reduction by district cooling application, *Energy*, Vol. 120, pp. 362-373. Feb., 2017. (IF: 4.52, Top 4%) *[Co-author]*

2016

45. Jinsub Kim, Seongchul Jun, Jungho Lee, Seong Hyuk Lee, Seung Mun You, Effect of wettability on pool boiling incipience in saturated water, *Journal of Heat Transfer-Transactions of the ASME*, Vol. 138, p. 080910. 2016. (IF: 1.723, Top 27%) *[Co-author]*
46. Sukyung Lee, Jihoon Chung, Dae Yun Kim, Jung-Yeul Jung, *Seong Hyuk Lee*, *Sangmin Lee*, Cylindrical water triboelectric nanogenerator via controlling geometrical shape of anodized aluminum for enhanced electrostatic induction, *ACS Applied Materials and Interfaces*, Vol. 8, pp. 25014-25018. 2016. (IF: 7.145, Top 16%) *[Corresponding authors]*
47. Dong Hwan Shin, *Jeffry S. Allen*, *Seong Hyuk Lee*, *Chang Kyoung Choi*, Observations of internal flow inside an evaporating nanofluid sessile droplet in the presence of an entrapped air bubble, *Scientific Reports*, Vol. 6, pp. 32767. 2016. (IF: 5.228, Top 10%) *[Corresponding authors]*

48. Taehun Kim, Jihoon Chung, Dae Yun Kim, Joo Hyun Moon, Sukyung Lee, Minhaeng Cho, *Seong Hyuk Lee, Sangmin Lee*, Design and optimization of rotating triboelectric nanogenerator by water electrification and inertia, *Nano Energy*, Vol. 27, pp. 340-351, 2016. (IF: 11.553, Top 5%) *[Corresponding authors]*
49. Vinaykumar Konduru, Dong Hwan Shin, Jeffry S. Allen, Chang Kyoung Choi, Seong Hyuk Lee, Young Ki Choi, Sosan Cheon, Kenneth D. Kihm, High-speed surface plasmon resonance(SPR) reflectance imagng of drop coalescence during condensation and evaporation, *Journal of Heat Transfer-Transactions of the ASME,* Vol. 138, p. 080903, 2016. (IF: 1.723, Top 27%) *[Co-author]*
50. Kun Hyuk Sung, Joo Won Bang, Longnan Lee, Jinwook Choi, Daejoong Kim, Hong Sun Ryou, Kee Bong Yoon, *Seong Hyuk Lee*, Effect of crack size on gas leakage characteristics in a confined space, *Journal of Mechanical Science and Technology*, Vol. 30, pp. 3411-3419, 2016. (IF: 0.761) *[Corresponding author]*
51. Joo Hyun Moon, Jin Woon Lee, Chan Ho Jeong, *Seong Hyuk Lee*, Thermal comfort analysis in a passenger compartment considering the solar radiation effect, *International Journal of Thermal Sciences*, Vol. 107, pp. 77-88, 2016. (IF: 2.769, Top 13%) *[Corresponding author]*
52. Dae Yun Kim, Jae Bin Lee, Jung-Yeol Jung, *Seong Hyuk Lee*, Evaporative characteristics of Al2O3 nanofluid droplet on heated surface, *Journal of Heat Transfer-Transactions of the ASME*, Vol. 138, p. 080907, 2016. (IF: 1.723, Top 27%) *[Corresponding author]*
53. Jeongmin Lee, Jun Hee Han, Joo Hyun Moon, Chan Ho Jeong, Myeongmin Kim, Ji Yoon Kim, *Seong Hyuk Lee*, Characteristics of heat transfer and chemical reaction of methane-steam reforming in a porous catalytic medium, *Journal of Mechanical Science and Technology*, Vol. 30, pp. 473-481, 2016. (IF: 0.761) *[Corresponding author]*
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