

Hyun Sun Park

List of Publications by Year in descending order

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Version: 2024-02-01

82
papers

1,849
citations

236833

25
h-index

289141

40
g-index

85
all docs

85
docs citations

85
times ranked

1334
citing authors

| # | ARTICLE | IF | CITATIONS |
|----|---|-----|-----------|
| 1 | Boiling heat transfer and critical heat flux evaluation of the pool boiling on micro structured surface. <i>International Journal of Heat and Mass Transfer</i> , 2015, 91, 1140-1147. | 2.5 | 143 |
| 2 | Numerical analysis of air-foil shaped fin performance in printed circuit heat exchanger in a supercritical carbon dioxide power cycle. <i>Nuclear Engineering and Design</i> , 2015, 288, 110-118. | 0.8 | 95 |
| 3 | Critical heat flux and nucleate boiling on several heterogeneous wetting surfaces: Controlled hydrophobic patterns on a hydrophilic substrate. <i>International Journal of Multiphase Flow</i> , 2014, 62, 101-109. | 1.6 | 91 |
| 4 | Optimization and thermodynamic analysis of supercritical CO2 Brayton recompression cycle for various small modular reactors. <i>Energy</i> , 2018, 160, 520-535. | 4.5 | 91 |
| 5 | Numerical Analysis of Jet Injection Behavior for Fuel-Coolant Interaction using Particle Method. <i>Journal of Nuclear Science and Technology</i> , 2001, 38, 174-182. | 0.7 | 84 |
| 6 | Boiling on spatially controlled heterogeneous surfaces: Wettability patterns on microstructures. <i>Applied Physics Letters</i> , 2015, 106, . | 1.5 | 73 |
| 7 | Optimization of airfoil-type PCHE for the recuperator of small scale brayton cycle by cost-based objective function. <i>Nuclear Engineering and Design</i> , 2016, 298, 192-200. | 0.8 | 60 |
| 8 | The effect of through plane pore gradient GDL on the water distribution of PEMFC. <i>International Journal of Hydrogen Energy</i> , 2018, 43, 2369-2380. | 3.8 | 59 |
| 9 | Single bubble dynamics on hydrophobic-hydrophilic mixed surfaces. <i>International Journal of Heat and Mass Transfer</i> , 2016, 93, 554-565. | 2.5 | 52 |
| 10 | Experimental investigation on validity of buoyancy parameters to heat transfer of CO2 at supercritical pressures in a horizontal tube. <i>Experimental Thermal and Fluid Science</i> , 2018, 92, 222-230. | 1.5 | 50 |
| 11 | Loss of superhydrophobicity of hydrophobic micro/nano structures during condensation. <i>Scientific Reports</i> , 2015, 5, 9901. | 1.6 | 47 |
| 12 | Film boiling heat transfer on a completely wettable surface with atmospheric saturated distilled water quenching. <i>International Journal of Heat and Mass Transfer</i> , 2016, 93, 67-74. | 2.5 | 45 |
| 13 | Synchrotron x-ray imaging visualization study of capillary-induced flow and critical heat flux on surfaces with engineered micropillars. <i>Science Advances</i> , 2018, 4, e1701571. | 4.7 | 44 |
| 14 | Experimental study of water droplets on over-heated nano/microstructured zirconium surfaces. <i>Nuclear Engineering and Design</i> , 2014, 278, 367-376. | 0.8 | 40 |
| 15 | Induced liquid-solid contact via micro/nano multiscale texture on a surface and its effect on the Leidenfrost temperature. <i>Experimental Thermal and Fluid Science</i> , 2017, 84, 156-164. | 1.5 | 40 |
| 16 | Wetting and evaporation phenomena of water droplets on textured surfaces. <i>International Journal of Heat and Mass Transfer</i> , 2015, 90, 191-200. | 2.5 | 39 |
| 17 | Fine fragmentation of molten droplet in highly subcooled water due to vapor explosion observed by X-ray radiography. <i>Experimental Thermal and Fluid Science</i> , 2005, 29, 351-361. | 1.5 | 35 |
| 18 | Transient analysis and validation with experimental data of supercritical CO2 integral experiment loop by using MARS. <i>Energy</i> , 2018, 147, 1030-1043. | 4.5 | 34 |

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|----|--|-----|-----------|
| 19 | Investigation of the effect of operating pressure on the performance of proton exchange membrane fuel cell: In the aspect of water distribution. <i>Renewable Energy</i> , 2018, 115, 896-907. | 4.3 | 33 |
| 20 | Heat flux partitioning analysis of pool boiling on micro structured surface using infrared visualization. <i>International Journal of Heat and Mass Transfer</i> , 2016, 102, 756-765. | 2.5 | 32 |
| 21 | Smart surface in flow boiling: Spontaneous change of wettability. <i>International Journal of Heat and Mass Transfer</i> , 2017, 105, 147-156. | 2.5 | 32 |
| 22 | Wetting state on hydrophilic and hydrophobic micro-textured surfaces: Thermodynamic analysis and X-ray visualization. <i>Applied Physics Letters</i> , 2015, 106, . | 1.5 | 30 |
| 23 | Effect of heterogeneous wetting surface characteristics on flow boiling performance. <i>International Journal of Heat and Fluid Flow</i> , 2018, 70, 141-151. | 1.1 | 29 |
| 24 | Quenching of candidate materials for accident tolerant fuel-cladding in LWRs. <i>Annals of Nuclear Energy</i> , 2018, 112, 794-807. | 0.9 | 28 |
| 25 | Subcooled water quenching on a super-hydrophilic surface under atmospheric pressure. <i>International Journal of Heat and Mass Transfer</i> , 2018, 117, 538-547. | 2.5 | 27 |
| 26 | Film Boiling Heat Transfer on a High Temperature Sphere in Nanofluid. , 2004, , 469. | | 25 |
| 27 | Smart surface in pool boiling: Thermally-induced wetting transition. <i>International Journal of Heat and Mass Transfer</i> , 2017, 109, 231-241. | 2.5 | 24 |
| 28 | Zirconium-silicide coating on zircaloy-4 substrate for accident tolerance: Effects on oxidation resistance and boiling. <i>Annals of Nuclear Energy</i> , 2019, 126, 350-358. | 0.9 | 24 |
| 29 | Measurement of the vapor layer under a dynamic Leidenfrost drop. <i>International Journal of Heat and Mass Transfer</i> , 2018, 124, 1163-1171. | 2.5 | 23 |
| 30 | A study of nucleate bubble growth on microstructured surface through high speed and infrared visualization. <i>International Journal of Multiphase Flow</i> , 2017, 95, 12-21. | 1.6 | 21 |
| 31 | Minimum heat flux and minimum film-boiling temperature on a completely wettable surface: Effect of the Bond number. <i>International Journal of Heat and Mass Transfer</i> , 2018, 120, 399-410. | 2.5 | 19 |
| 32 | Modeling of pressure drop in two-phase flow of mono-sized spherical particle beds. <i>International Journal of Heat and Mass Transfer</i> , 2018, 127, 986-995. | 2.5 | 19 |
| 33 | Simultaneous high speed digital cinematographic and X-ray radiographic imaging of a intense multi-fluid interaction with rapid phase changes. <i>Experimental Thermal and Fluid Science</i> , 2009, 33, 754-763. | 1.5 | 18 |
| 34 | Impact of system parameters on quenching heat transfer in the candidate materials for accident tolerant fuel-cladding in LWRs. <i>Annals of Nuclear Energy</i> , 2019, 129, 375-389. | 0.9 | 17 |
| 35 | Minimum film-boiling quench temperature increase by CuO porous-microstructure coating. <i>Applied Physics Letters</i> , 2017, 110, . | 1.5 | 16 |
| 36 | Adequacy of effective diameter in predicting pressure gradients of air flow through packed beds with particle size distribution. <i>Annals of Nuclear Energy</i> , 2018, 112, 769-778. | 0.9 | 15 |

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|----|--|-----|-----------|
| 37 | Development of an ex-vessel corium debris bed with two-phase natural convection in a flooded cavity. Nuclear Engineering and Design, 2016, 298, 240-254. | 0.8 | 14 |
| 38 | Influence of particle morphology on pressure gradients of single-phase air flow in the mono-size non-spherical particle beds. Annals of Nuclear Energy, 2018, 115, 1-8. | 0.9 | 13 |
| 39 | Numerical validation and investigation for the sedimentation of solid particles in liquid pool using the CFD-DEM coupling algorithm. Nuclear Engineering and Design, 2019, 355, 110364. | 0.8 | 13 |
| 40 | Heat transfer model for horizontal flows of CO ₂ at supercritical pressures in terms of mixed convection. International Journal of Heat and Mass Transfer, 2019, 131, 1117-1128. | 2.5 | 13 |
| 41 | Numerical Analysis of Jet Injection Behavior for Fuel-Coolant Interaction using Particle Method.. Journal of Nuclear Science and Technology, 2001, 38, 174-182. | 0.7 | 13 |
| 42 | The plant-specific uncertainty analysis for an ex-vessel steam explosion-induced pressure load using a TEXAS- ² SAUNA coupled system. Nuclear Engineering and Design, 2012, 249, 400-412. | 0.8 | 12 |
| 43 | Experiments on Sedimentation of Particles in a Water Pool with Gas Inflow. Nuclear Engineering and Technology, 2016, 48, 457-469. | 1.1 | 12 |
| 44 | 3-D simulation of plunging jet penetration into a denser liquid pool by the RD-MPS method. Nuclear Engineering and Design, 2016, 299, 154-162. | 0.8 | 12 |
| 45 | Effects of wettability on droplet movement in a V-shaped groove. Scientific Reports, 2018, 8, 16013. | 1.6 | 12 |
| 46 | Time effect on wetting transition of smart surface and prediction of the wetting transition for critical heat flux in pool boiling. International Journal of Heat and Mass Transfer, 2017, 114, 735-742. | 2.5 | 11 |
| 47 | Two-phase flow friction at high void fraction in porous media with small particles and its impact on dryout heat flux evaluation. International Journal of Multiphase Flow, 2019, 118, 75-86. | 1.6 | 11 |
| 48 | Analysis of experimental uncertainties in jet breakup length and jet diameter during molten fuel-coolant interaction. Nuclear Engineering and Design, 2019, 344, 183-194. | 0.8 | 11 |
| 49 | Three-Dimensional Modeling of Debris Mixing and Sedimentation in Severe Accidents Using the Moving Particle Semi-Implicit Method Coupled with Rigid Body Dynamics. Nuclear Technology, 2013, 181, 227-239. | 0.7 | 10 |
| 50 | Boiling performance and material robustness of modified surfaces with multi scale structures for fuel cladding development. Nuclear Engineering and Design, 2015, 291, 204-211. | 0.8 | 8 |
| 51 | FARO tests corium-melt cooling in water pool: Roles of melt superheat and sintering in sediment. Nuclear Engineering and Design, 2016, 305, 569-581. | 0.8 | 8 |
| 52 | Two-phase flow pressure loss through packed particle bed for wide void fraction range. Experimental Thermal and Fluid Science, 2019, 108, 85-94. | 1.5 | 8 |
| 53 | An experimental study on heat transfer of different aqueous surfactant solutions horizontal impinging jet using infrared thermography. Applied Thermal Engineering, 2021, 188, 116668. | 3.0 | 8 |
| 54 | Uncertainty analysis of in-vessel retention in a high power reactor during severe accident. Nuclear Engineering and Design, 2017, 319, 1-11. | 0.8 | 8 |

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|----|---|-----|-----------|
| 55 | Probability distribution of ex-vessel steam explosion loads considering influences of water level and trigger timing. Nuclear Engineering and Design, 2015, 293, 292-303. | 0.8 | 7 |
| 56 | Analysis of ex-vessel melt jet breakup and coolability. Part 1: Sensitivity on model parameters and accident conditions. Nuclear Engineering and Design, 2016, 302, 107-117. | 0.8 | 7 |
| 57 | Analysis of ex-vessel melt jet breakup and coolability. Part 2: Uncertainty analysis. Nuclear Engineering and Design, 2016, 302, 118-127. | 0.8 | 7 |
| 58 | Effective Thermal Conductivity and Diffusivity of Containment Wall for Nuclear Power Plant OPR1000. Nuclear Engineering and Technology, 2017, 49, 459-465. | 1.1 | 7 |
| 59 | Estimation Model for Effective Thermal Conductivity of Reinforced Concrete Containing Multiple Round Rebars. International Journal of Concrete Structures and Materials, 2018, 12, . | 1.4 | 7 |
| 60 | Effect of surface structure and coating on the heat transfer deflection behavior in the early stage of nucleate boiling. International Journal of Heat and Mass Transfer, 2018, 126, 1315-1322. | 2.5 | 7 |
| 61 | Enhanced Boiling Heat Transfer Performance on Microstructured Silicate Glass Surfaces Derived from Inorganic Polymer-Based Soft Lithography. Advanced Materials Interfaces, 2016, 3, 1600507. | 1.9 | 5 |
| 62 | Simulation of melt jet breakup experiments by JASMINE with an empirical correlation for melt particle size distribution. Journal of Nuclear Science and Technology, 2016, 53, 1608-1621. | 0.7 | 5 |
| 63 | Flow boiling critical heat flux enhancement in ZrSi ₂ accident-tolerant fuel cladding with porous structures. Applied Thermal Engineering, 2022, 207, 118164. | 3.0 | 5 |
| 64 | Experimental study of the role of nanoparticles in sodium-water reaction. Nuclear Engineering and Design, 2014, 277, 46-54. | 0.8 | 4 |
| 65 | A theoretical study of Ti nanoparticle effect on sodium water reaction: Using ab initio calculation. Nuclear Engineering and Design, 2015, 281, 15-21. | 0.8 | 4 |
| 66 | Sensitivity and uncertainty analyses of ex-vessel molten core cooling in a flooded cavity during a severe accident. Nuclear Engineering and Design, 2018, 328, 121-133. | 0.8 | 4 |
| 67 | The analysis of adhesion force at the interface of gas diffusion layer and channel in polymer electrolyte membrane fuel cell. International Journal of Hydrogen Energy, 2018, 43, 16258-16267. | 3.8 | 4 |
| 68 | Wetting characteristic of bubble on micro-pillar structured surface under a water pool. Experimental Thermal and Fluid Science, 2019, 100, 135-143. | 1.5 | 4 |
| 69 | Effective and uniform cooling on a porous micro-structured surface with visualization of liquid/vapor interface. International Journal of Heat and Mass Transfer, 2019, 128, 1114-1124. | 2.5 | 4 |
| 70 | Interparticle potential of 10 nanometer titanium nanoparticles in liquid sodium: theoretical approach. Nuclear Engineering and Technology, 2015, 47, 662-668. | 1.1 | 3 |
| 71 | Parameter dependence of steam explosion loads and proposal of a simple evaluation method. Nuclear Engineering and Technology, 2015, 47, 907-914. | 1.1 | 3 |
| 72 | Prandtl number effect on thermal behavior in volumetrically heated pool in the high Rayleigh number region. Nuclear Engineering and Design, 2019, 351, 72-79. | 0.8 | 3 |

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|----|--|-----|-----------|
| 73 | Experimental study on evaluation of effective diameter for non-spherical particles in predicting pressure gradients of water/air two-phase flow in particle beds. International Journal of Heat and Mass Transfer, 2019, 140, 139-146. | 2.5 | 3 |
| 74 | Minimum diameter limit of particle size distribution and its effect on coolability of debris bed. Nuclear Engineering and Design, 2020, 363, 110606. | 0.8 | 3 |
| 75 | Reaction rate of Na-based titanium nanofluid with water. Journal of Nuclear Science and Technology, 2016, 53, 749-755. | 0.7 | 2 |
| 76 | Simulation of 3D charging effect and neutral beam transports in dry-etching using PIC code. , 0, , . | | 0 |
| 77 | The effect of titanium nanoparticles on Na-water vapor reaction at 105 Å°C. Nuclear Engineering and Design, 2015, 293, 105-111. | 0.8 | 0 |
| 78 | Porous and Wettability-Controlled Microstructures for Enhanced Heat Transfer Coefficient in Pool Boiling. , 2017, , . | | 0 |
| 79 | Parametric Model for Ex-Vessel Melt Jet Breakup and Debris Bed Cooling. , 2018, , . | | 0 |
| 80 | The Effect of Initial Condition of Melt Jet on the Jet Breakup Phenomenon in the Subcooled Water Pool. , 2018, , . | | 0 |
| 81 | 10.1063/1.4974923.4. , 2017, , . | | 0 |
| 82 | Generalized semi-mechanistic model of impinging jet quenching heat transfer. International Journal of Heat and Mass Transfer, 2022, 192, 122896. | 2.5 | 0 |