

# Seunghwan Wi

## List of Publications by Year in descending order

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91  
papers

2,264  
citations

186265  
28  
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276875  
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91  
all docs

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docs citations

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times ranked

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citing authors

| #  | ARTICLE  | IF   | CITATIONS |
|----|--|------|-----------|
| 1  | Thermal properties of shape-stabilized phase change materials using fatty acid ester and exfoliated graphite nanoplatelets for saving energy in buildings. <i>Solar Energy Materials and Solar Cells</i> , 2015, 143, 168-173. | 6.2  | 106       |
| 2  | Energy efficient Bio-based PCM with silica fume composites to apply in concrete for energy saving in buildings. <i>Solar Energy Materials and Solar Cells</i> , 2015, 143, 430-434.  | 6.2  | 87        |
| 3  | Latent heat storage biocomposites of phase change material-biochar as feasible eco-friendly building materials. <i>Environmental Research</i> , 2019, 172, 637-648.  | 7.5  | 76        |
| 4  | Improvement of thermal inertia effect in buildings using shape stabilized PCM wallboard based on the enthalpy-temperature function. <i>Sustainable Cities and Society</i> , 2020, 56, 102067.                                  | 10.4 | 64        |
| 5  | Characterization of biocomposite using coconut oil impregnated biochar as latent heat storage insulation. <i>Chemosphere</i> , 2019, 236, 124269.  | 8.2  | 63        |
| 6  | Structurally advanced hybrid support composite phase change materials: Architectural synergy. <i>Energy Storage Materials</i> , 2021, 42, 164-184.   | 18.0 | 63        |
| 7  | Engineering biochar with multiwalled carbon nanotube for efficient phase change material encapsulation and thermal energy storage. <i>Energy</i> , 2021, 216, 119294.  | 8.8  | 59        |
| 8  | An experimental study on applying organic PCMs to gypsum-cement board for improving thermal performance of buildings in different climates. <i>Energy and Buildings</i> , 2019, 190, 183-194.                                  | 6.7  | 56        |
| 9  | A comparative analysis of biochar, activated carbon, expanded graphite, and multi-walled carbon nanotubes with respect to PCM loading and energy-storage capacities. <i>Environmental Research</i> , 2021, 195, 110853.        | 7.5  | 56        |
| 10 | Biochar-red clay composites for energy efficiency as eco-friendly building materials: Thermal and mechanical performance. <i>Journal of Hazardous Materials</i> , 2019, 373, 844-855.  | 12.4 | 55        |
| 11 | Comparative analysis of the PCM application according to the building type as retrofit system. <i>Building and Environment</i> , 2019, 151, 291-302.   | 6.9  | 52        |
| 12 | Introduction of eicosane into biochar derived from softwood and wheat straw: Influence of porous structure and surface chemistry. <i>Chemical Engineering Journal</i> , 2021, 415, 128887.                                     | 12.7 | 52        |
| 13 | Integrated analysis of the energy and economic efficiency of PCM as an indoor decoration element: Application to an apartment building. <i>Solar Energy</i> , 2020, 196, 437-447.  | 6.1  | 51        |
| 14 | Analysis of walls of functional gypsum board added with porous material and phase change material to improve hygrothermal performance. <i>Energy and Buildings</i> , 2019, 183, 803-816.                                       | 6.7  | 46        |
| 15 | Hygrothermal performance improvement of the Korean wood frame walls using macro-packed phase change materials (MPPCM). <i>Applied Thermal Engineering</i> , 2017, 114, 457-465.  | 6.0  | 45        |
| 16 | Spent coffee grounds as supporting materials to produce bio-composite PCM with natural waxes. <i>Chemosphere</i> , 2019, 235, 626-635.   | 8.2  | 45        |
| 17 | Energy retrofit of PCM-applied apartment buildings considering building orientation and height. <i>Energy</i> , 2021, 222, 119877.   | 8.8  | 43        |
| 18 | Climatic cycling assessment of red clay/perlite and vermiculite composite PCM for improving thermal inertia in buildings. <i>Building and Environment</i> , 2020, 167, 106464.   | 6.9  | 41        |

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|----|---|------|-----------|
| 19 | Optimal energy retrofit plan for conservation and sustainable use of historic campus building: Case of cultural property building. <i>Applied Energy</i> , 2020, 275, 115313.   | 10.1 | 41        |
| 20 | Evaluation of environmental impact on the formaldehyde emission and flame-retardant performance of thermal insulation materials. <i>Journal of Hazardous Materials</i> , 2021, 402, 123463.   | 12.4 | 39        |
| 21 | Development of thermal enhanced n-octadecane/porous nano carbon-based materials using 3-step filtered vacuum impregnation method. <i>Thermochimica Acta</i> , 2017, 655, 194-201.   | 2.7  | 38        |
| 22 | Thermal transfer behavior of biochar-natural inorganic clay composite for building envelope insulation. <i>Construction and Building Materials</i> , 2019, 223, 668-678.  | 7.2  | 38        |
| 23 | Optimization of phase change materials to improve energy performance within thermal comfort range in the South Korean climate. <i>Energy and Buildings</i> , 2019, 185, 12-25.  | 6.7  | 36        |
| 24 | Impact of a passive retrofit shading system on educational building to improve thermal comfort and energy consumption. <i>Energy and Buildings</i> , 2020, 216, 109930.   | 6.7  | 35        |
| 25 | Evaluation and analysis of volatile organic compounds and formaldehyde emission of building products in accordance with legal standards: A statistical experimental study. <i>Journal of Hazardous Materials</i> , 2020, 393, 122381. | 12.4 | 35        |
| 26 | Evaluation of energy efficient hybrid hollow plaster panel using phase change material/xGnP composites. <i>Applied Energy</i> , 2017, 205, 1548-1559.   | 10.1 | 30        |
| 27 | Mechanical and thermal properties of artificial stone finishing materials mixed with PCM impregnated lightweight aggregate and carbon material. <i>Construction and Building Materials</i> , 2021, 272, 121882.                       | 7.2  | 30        |
| 28 | Thermal performance evaluation of macro-packed phase change materials (PCMs) using heat transfer analysis device. <i>Energy and Buildings</i> , 2016, 117, 120-127.   | 6.7  | 28        |
| 29 | Energy efficient concrete with n-octadecane/xGnP SSPCM for energy conservation in infrastructure. <i>Construction and Building Materials</i> , 2016, 106, 543-549.  | 7.2  | 28        |
| 30 | Microstructure and thermal characterization of aerogel-graphite polyurethane spray-foam composite for high efficiency thermal energy utilization. <i>Journal of Hazardous Materials</i> , 2020, 397, 122656.                          | 12.4 | 27        |
| 31 | Hygrothermal and energy retrofit planning of masonry facade historic building used as museum and office: A cultural properties case study. <i>Energy</i> , 2020, 201, 117607.   | 8.8  | 27        |
| 32 | Thermal bridging analysis of connections in cross-laminated timber buildings based on ISO 10211. <i>Construction and Building Materials</i> , 2019, 213, 709-722.   | 7.2  | 26        |
| 33 | Thermal Performance Evaluation of Fatty Acid Ester and Paraffin Based Mixed SSPCMs Using Exfoliated Graphite Nanoplatelets (xGnP). <i>Applied Sciences (Switzerland)</i> , 2016, 6, 106.  | 2.5  | 25        |
| 34 | Development and performance evaluation of heat storage paint with MPCM for applying roof materials as basic research. <i>Energy and Buildings</i> , 2016, 112, 62-68.   | 6.7  | 23        |
| 35 | Thermal and characteristic analysis of shape-stabilization phase change materials by advanced vacuum impregnation method using carbon-based materials. <i>Journal of Industrial and Engineering Chemistry</i> , 2019, 70, 281-289.    | 5.8  | 23        |
| 36 | Moisture risk assessment of cross-laminated timber walls: Perspectives on climate conditions and water vapor resistance performance of building materials. <i>Building and Environment</i> , 2020, 168, 106502.                       | 6.9  | 23        |

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|----|---|------|-----------|
| 37 | Field study on the improvement of indoor air quality with toluene adsorption finishing materials in an urban residential apartment. <i>Environmental Pollution</i> , 2020, 261, 114137.   | 7.5  | 23        |
| 38 | Thermoconductive n-alkane enables ultra-high shape/thermal stability, durability, and ambient thermal energy harvesting. <i>Chemical Engineering Journal</i> , 2021, 420, 130374.   | 12.7 | 23        |
| 39 | Field study on indoor air quality of wood remodeled welfare facilities for physical and psychological benefits. <i>Journal of Cleaner Production</i> , 2019, 233, 197-208.  | 9.3  | 22        |
| 40 | Novel proposal to overcome insulation limitations due to nonlinear structures using 3D printing: Hybrid heat-storage system. <i>Energy and Buildings</i> , 2019, 197, 177-187.  | 6.7  | 22        |
| 41 | Energy performance evaluation of heat-storage gypsum board with hybrid SSPCM composite. <i>Journal of Industrial and Engineering Chemistry</i> , 2017, 51, 237-243.   | 5.8  | 21        |
| 42 | Thermal performance enhancement of a phase change material with expanded graphite via ultrasonication. <i>Journal of Industrial and Engineering Chemistry</i> , 2019, 79, 437-442.  | 5.8  | 21        |
| 43 | Hygrothermal properties analysis of cross-laminated timber wall with internal and external insulation systems. <i>Journal of Cleaner Production</i> , 2019, 231, 1353-1363.   | 9.3  | 21        |
| 44 | Development of wood-lime boards as building materials improving thermal and moisture performance based on hygrothermal behavior evaluation. <i>Construction and Building Materials</i> , 2019, 204, 576-585.                    | 7.2  | 21        |
| 45 | Development of heat storage gypsum board with paraffin-based mixed SSPCM for application to buildings. <i>Journal of Adhesion Science and Technology</i> , 2017, 31, 297-309.   | 2.6  | 20        |
| 46 | Assessment of recycled ceramic-based inorganic insulation for improving energy efficiency and flame retardancy of buildings. <i>Environment International</i> , 2019, 130, 104900.  | 10.0 | 20        |
| 47 | Evaluation of thermal properties of phase change material-integrated artificial stone according to biochar loading content. <i>Construction and Building Materials</i> , 2021, 305, 124682.                                     | 7.2  | 20        |
| 48 | Hazard evaluation of indoor environment based on long-term pollutant emission characteristics of building insulation materials: An empirical study. <i>Environmental Pollution</i> , 2021, 285, 117223.                         | 7.5  | 19        |
| 49 | Development and evaluation of gypsum/shape-stabilization phase change materials using large-capacity vacuum impregnator for thermal energy storage. <i>Applied Energy</i> , 2019, 241, 278-290.                                 | 10.1 | 18        |
| 50 | Experimental study and assessment of high-tech thermal energy storing radiant floor heating system with latent heat storage materials. <i>International Journal of Thermal Sciences</i> , 2020, 155, 106410.                    | 4.9  | 18        |
| 51 | Thermal, hygric, and environmental performance evaluation of thermal insulation materials for their sustainable utilization in buildings. <i>Environmental Pollution</i> , 2021, 272, 116033.                                   | 7.5  | 18        |
| 52 | Effect of eco-friendly pervious concrete with amorphous metallic fiber on evaporative cooling performance. <i>Journal of Environmental Management</i> , 2021, 297, 113269.  | 7.8  | 18        |
| 53 | Exterior insulation finishing system using cementitious plaster/microencapsulated phase change material for improving the building thermal storage performance. <i>Construction and Building Materials</i> , 2021, 299, 123932. | 7.2  | 17        |
| 54 | Numerical analysis of hygrothermal properties and behavior of Korean based cross-laminated timber (CLT) wall system to deduce optimal assemblies. <i>Journal of Cleaner Production</i> , 2019, 213, 1217-1227.                  | 9.3  | 16        |

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|----|--|------|-----------|
| 55 | Numerical analysis of phase change materials/wood-plastic composite roof module system for improving thermal performance. Journal of Industrial and Engineering Chemistry, 2020, 82, 413-423.  | 5.8  | 16        |
| 56 | Toxicity characteristics and fire retardant performance of commercially manufactured organic insulation materials for building applications. Construction and Building Materials, 2022, 341, 127898.   | 7.2  | 16        |
| 57 | Analysis of energy retrofit system using latent heat storage materials applied to residential buildings considering climate impacts. Applied Thermal Engineering, 2020, 169, 114904.   | 6.0  | 15        |
| 58 | Performance of the hygrothermal behavior of the CLT wall using different types of insulation; XPS, PF board and glass wool. Case Studies in Thermal Engineering, 2021, 24, 100846.   | 5.7  | 15        |
| 59 | Evaluation of thermal properties and acetaldehyde adsorption performance of sustainable composites using waste wood and biochar. Environmental Research, 2021, 196, 110910.  | 7.5  | 15        |
| 60 | Experimental verification of the theoretical aging of vacuum insulated panels. Journal of Industrial and Engineering Chemistry, 2020, 90, 300-304.   | 5.8  | 13        |
| 61 | Evaluation of hygrothermal performance of wood-derived biocomposite with biochar in response to climate change. Environmental Research, 2021, 193, 110359.   | 7.5  | 13        |
| 62 | Three-dimensional hybrid carbon nanocomposite-based intelligent composite phase change material with leakage resistance, low electrical resistivity, and high latent heat. Journal of Industrial and Engineering Chemistry, 2021, 98, 435-443. | 5.8  | 13        |
| 63 | Energy retrofit analysis of cross-laminated timber residential buildings in Seoul, Korea: Insights from a case study of packages. Energy and Buildings, 2019, 202, 109329.   | 6.7  | 12        |
| 64 | Analysis of Cooling and Heating Energy Demands of Wooden Houses with Cross-laminated Timber (CLT) Using Domestic Plywood as Core Materials. Journal of the Korean Society of Living Environmental System, 2017, 24, 752-759.                   | 0.2  | 12        |
| 65 | Prediction evaluating of moisture problems in light-weight wood structure: Perspectives on regional climates and building materials. Building and Environment, 2020, 168, 106521.  | 6.9  | 11        |
| 66 | Analysis on phase transition range of the pure and mixed phase change materials (PCM) using a thermostatic chamber test and differentiation. Journal of Thermal Analysis and Calorimetry, 2018, 131, 1999-2004.                                | 3.6  | 10        |
| 67 | Dynamic heat transfer and thermal performance evaluation of PCM-doped hybrid hollow plaster panels for buildings. Journal of Hazardous Materials, 2019, 374, 428-436.  | 12.4 | 10        |
| 68 | Development of vacuum impregnation equipment and preparation of mass/uniform shape-stabilized phase change materials. International Journal of Heat and Mass Transfer, 2019, 132, 817-824.   | 4.8  | 10        |
| 69 | Numerical analysis on the hygrothermal behavior of building envelope according to CLT wall assembly considering the hygrothermal-environmental zone in Korea. Environmental Research, 2020, 191, 110198.                                       | 7.5  | 10        |
| 70 | Developing energy-efficient temporary houses for sustainable urban regeneration: Manufacturing homes with loess, perlite, and vermiculite. Sustainable Cities and Society, 2020, 61, 102287.   | 10.4 | 10        |
| 71 | Thermal performance evaluation of Hwangtoh board developed with styrene butadiene latex/SSPCM. Construction and Building Materials, 2019, 200, 310-317.  | 7.2  | 9         |
| 72 | Thermal performance analysis of phase change materials composed of double layers considering heating and cooling period. Journal of Industrial and Engineering Chemistry, 2019, 72, 255-264.   | 5.8  | 9         |

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|----|--|------|-----------|
| 73 | Passive PM2.5 control plan of educational buildings by using airtight improvement technologies in South Korea. Journal of Hazardous Materials, 2022, 423, 126990.  | 12.4 | 9         |
| 74 | Practical solutions with PCM for providing thermal stability of temporary house, school and hospital in disaster situations. Building and Environment, 2022, 207, 108540.                                | 6.9  | 9         |
| 75 | Energy-efficient Heat Storage using Gypsum Board with Fatty Acid Ester as Layered Phase Change Material. Energy Technology, 2017, 5, 1392-1398.  | 3.8  | 8         |
| 76 | Analysis of the influence of moisture and temperature control according to the combination of porous sediment and MPCM. Journal of Industrial and Engineering Chemistry, 2021, 97, 390-401.              | 5.8  | 7         |
| 77 | Evaluation of the Adsorption Performance and Sustainability of Exfoliated Graphite Nanoplatelets (xGnP) for VOCs. Materials, 2015, 8, 7615-7621.   | 2.9  | 6         |
| 78 | Performance evaluation of macro-packed fatty acid ester composites using energy-efficient thermal storage systems. Journal of Industrial and Engineering Chemistry, 2017, 55, 215-223.                   | 5.8  | 6         |
| 79 | Framework for developing a building material property database using web crawling to improve the applicability of energy simulation tools. Renewable and Sustainable Energy Reviews, 2020, 121, 109665.  | 16.4 | 6         |
| 80 | Thermal Storage Effect Analysis of Floor Heating Systems Using Latent Heat Storage Sheets. International Journal of Precision Engineering and Manufacturing - Green Technology, 2019, 6, 799-807.        | 4.9  | 5         |
| 81 | Effective thermal performance analysis of vacuum insulation panel with metal-less film and infrared-dried core material. Energy and Buildings, 2021, 233, 110684.  | 6.7  | 5         |
| 82 | Evaluation of Toluene Adsorption Performance of Mortar Adhesives Using Porous Carbon Material as Adsorbent. Materials, 2017, 10, 853.  | 2.9  | 3         |
| 83 | Energy performance evaluation of heat storage of calcium sulfate hemihydrate composite with fine aggregate based on paraffinic phase change material. Journal of Building Engineering, 2021, 42, 103075. | 3.4  | 3         |
| 84 | Analysis of Hygrothermal Performance for Standard Wood-frame Structures in Korea. Journal of the Korean Wood Science and Technology, 2016, 44, 440-448.  | 3.0  | 3         |
| 85 | Evaluation and Analysis of The Building Energy Saving Performance by Component of Wood Products Using EnergyPlus. Journal of the Korean Wood Science and Technology, 2016, 44, 655-663.                  | 3.0  | 3         |
| 86 | Verification of particle matter generation due to deterioration of building materials as the cause of indoor fine dust. Journal of Hazardous Materials, 2021, 416, 125920.                               | 12.4 | 2         |
| 87 | Smart heat storage building material development with Loess and SSPCM for building energy saving. IOP Conference Series: Materials Science and Engineering, 2019, 609, 062017.                           | 0.6  | 0         |
| 88 | Manufacture of optimized PCM within thermal comfort range to improve building energy performance. IOP Conference Series: Materials Science and Engineering, 2019, 609, 042019.                           | 0.6  | 0         |
| 89 | Dynamic heat transfer analysis on hwangtooh with PCM/eco-material for improving thermal inertia. IOP Conference Series: Materials Science and Engineering, 2019, 609, 062019.                            | 0.6  | 0         |
| 90 | Simulation-based analysis of optimized PCM to improve building energy performance and indoor thermal environment. IOP Conference Series: Materials Science and Engineering, 2019, 609, 042056.           | 0.6  | 0         |

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|----|--|-----|-----------|
| 91 | Simulation analysis of Macro-Packed Phase Change Materials (MPPCM) to reduce building energy use. IOP Conference Series: Materials Science and Engineering, 2019, 609, 042058. | 0.6 | 0         |