

Sunghwan Kim

List of Publications by Year in descending order

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Version: 2024-02-01

96
papers

1,669
citations

257450

24
h-index

330143

37
g-index

98
all docs

98
docs citations

98
times ranked

1046
citing authors

#	ARTICLE	IF	CITATIONS
1	Carbon fiber-based electrically conductive concrete for salt-free deicing of pavements. Journal of Cleaner Production, 2018, 203, 799-809.	9.3	121
2	Accuracy of Predictive Models for Dynamic Modulus of Hot-Mix Asphalt. Journal of Materials in Civil Engineering, 2009, 21, 286-293.	2.9	115
3	Superhydrophobic coatings on Portland cement concrete surfaces. Construction and Building Materials, 2017, 141, 393-401.	7.2	103
4	Influence of mix design variables on engineering properties of carbon fiber-modified electrically conductive concrete. Construction and Building Materials, 2017, 152, 168-181.	7.2	94
5	Superhydrophobic Coatings on Asphalt Concrete Surfaces: Toward Smart Solutions for Winter Pavement Maintenance. Transportation Research Record, 2016, 2551, 10-17.	1.9	70
6	Support Vector Machines Approach to HMA Stiffness Prediction. Journal of Engineering Mechanics - ASCE, 2011, 137, 138-146.	2.9	59
7	Advanced approaches to hot-mix asphalt dynamic modulus prediction. Canadian Journal of Civil Engineering, 2008, 35, 699-707.	1.3	53
8	Looking to the future: the next-generation hot mix asphalt dynamic modulus prediction models. International Journal of Pavement Engineering, 2009, 10, 341-352.	4.4	53
9	Development of Carbon Fiber-modified Electrically Conductive Concrete for Implementation in Des Moines International Airport. Case Studies in Construction Materials, 2018, 8, 277-291.	1.7	50
10	Electrically-conductive asphalt mastic: Temperature dependence and heating efficiency. Materials and Design, 2018, 157, 303-313.	7.0	48
11	Soil Stabilization with Bioenergy Coproduct. Transportation Research Record, 2010, 2186, 130-137.	1.9	47
12	Moisture Susceptibility of Subgrade Soils Stabilized by Lignin-Based Renewable Energy Coproduct. Journal of Transportation Engineering, 2012, 138, 1283-1290.	0.9	40
13	Global Sensitivity Analysis of Mechanistic-Empirical Performance Predictions for Flexible Pavements. Transportation Research Record, 2013, 2368, 12-23.	1.9	37
14	Effect of Carbon-Fiber Properties on Volumetrics and Ohmic Heating of Electrically Conductive Asphalt Concrete. Journal of Materials in Civil Engineering, 2019, 31, .	2.9	37
15	Knowledge discovery and data mining in pavement inverse analysis. Transport, 2013, 28, 1-10.	1.2	35
16	System Requirements for Electrically Conductive Concrete Heated Pavements. Transportation Research Record, 2016, 2569, 70-79.	1.9	35
17	A review of electrically conductive concrete heated pavement system technology: From the laboratory to the full-scale implementation. Construction and Building Materials, 2022, 329, 127139.	7.2	35
18	Assessment of soils stabilized with lignin-based byproducts. Transportation Geotechnics, 2018, 17, 122-132.	4.5	31

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19	Design and Full-scale Implementation of the Largest Operational Electrically Conductive Concrete Heated Pavement System. <i>Construction and Building Materials</i> , 2020, 255, 119229.	7.2	31
20	Calibration of Pavement ME Design and Mechanistic-Empirical Pavement Design Guide Performance Prediction Models for Iowa Pavement Systems. <i>Journal of Transportation Engineering</i> , 2014, 140, .	0.9	30
21	Sensitivity Analysis of Rigid Pavement Systems Using the Mechanistic-Empirical Design Guide Software. <i>Journal of Transportation Engineering</i> , 2009, 135, 555-562.	0.9	28
22	Towards resilient infrastructure systems for winter weather events: Integrated stochastic economic evaluation of electrically conductive heated airfield pavements. <i>Sustainable Cities and Society</i> , 2018, 41, 195-204.	10.4	27
23	Energy and thermal performance evaluation of an automated snow and ice removal system at airports using numerical modeling and field measurements. <i>Sustainable Cities and Society</i> , 2018, 43, 238-250.	10.4	25
24	HIGHWAY INFRASTRUCTURE HEALTH MONITORING USING MICRO-ELECTROMECHANICAL SENSORS AND SYSTEMS (MEMS). <i>Journal of Civil Engineering and Management</i> , 2014, 19, S188-S201.	3.5	24
25	Effect of M-E Design Guide Inputs on Flexible Pavement Performance Predictions. <i>Road Materials and Pavement Design</i> , 2007, 8, 375-397.	4.0	23
26	Experimental and theoretical characterization of electrodes on electrical and thermal performance of electrically conductive concrete. <i>Composites Part B: Engineering</i> , 2021, 222, 109003.	12.0	19
27	Design and Construction of the World's First Full-Scale Electrically Conductive Concrete Heated Airport Pavement System at a U.S. Airport. <i>Transportation Research Record</i> , 2018, 2672, 82-94.	1.9	18
28	Polyurethane-carbon microfiber composite coating for electrical heating of concrete pavement surfaces. <i>Heliyon</i> , 2019, 5, e02359.	3.2	17
29	Comparison between cement paste and asphalt mastic modified by carbonaceous materials: Electrical and thermal properties. <i>Construction and Building Materials</i> , 2019, 213, 121-130.	7.2	17
30	Renewable biomass-derived lignin in transportation infrastructure strengthening applications. <i>International Journal of Sustainable Engineering</i> , 2013, 6, 316-325.	3.5	15
31	Multi-objective Bayesian optimization of super hydrophobic coatings on asphalt concrete surfaces. <i>Journal of Computational Design and Engineering</i> , 2019, 6, 693-704.	3.1	15
32	Sensitivity analysis frameworks for mechanistic-empirical pavement design of continuously reinforced concrete pavements. <i>Construction and Building Materials</i> , 2014, 73, 498-508.	7.2	14
33	Life cycle assessment of heated apron pavement system operations. <i>Transportation Research, Part D: Transport and Environment</i> , 2016, 48, 316-331.	6.8	14
34	Statistics and Artificial Intelligence-Based Pavement Performance and Remaining Service Life Prediction Models for Flexible and Composite Pavement Systems. <i>Transportation Research Record</i> , 2020, 2674, 448-460.	1.9	14
35	Global Sensitivity Analysis of Jointed Plain Concrete Pavement Mechanistic-Empirical Performance Predictions. <i>Transportation Research Record</i> , 2013, 2367, 113-122.	1.9	12
36	Use of Pavement Management Information System for Verification of Mechanistic-Empirical Pavement Design Guide Performance Predictions. <i>Transportation Research Record</i> , 2010, 2153, 30-39.	1.9	11

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37	Local Sensitivity of Mechanistic-Empirical Flexible Pavement Performance Predictions to Unbound Material Property Inputs. , 2012, , .		11
38	Sensitivity quantification of jointed plain concrete pavement mechanistic-empirical performance predictions. Construction and Building Materials, 2013, 43, 545-556.	7.2	11
39	Characterization of environmental loads related concrete pavement deflection behavior using Light Detection and Ranging technology. International Journal of Pavement Research and Technology, 2018, 11, 470-480.	2.6	10
40	Neural Networks Application in Pavement Infrastructure Materials. Studies in Computational Intelligence, 2009, , 47-66.	0.9	10
41	Fabrication of Polytetrafluoroethylene-Coated Asphalt Concrete Biomimetic Surfaces: A Nanomaterials-Based Pavement Winter Maintenance Approach. , 2016, , .		9
42	Integrated stochastic life cycle benefit cost analysis of hydronically-heated apron pavement system. Journal of Cleaner Production, 2019, 224, 994-1003.	9.3	9
43	Investigation of Longitudinal Cracking in Widened Concrete Pavements. Baltic Journal of Road and Bridge Engineering, 2020, 15, 211-231.	0.8	9
44	Lignin Recovery and Utilization. , 2010, , 247-274.		8
45	Finite element modeling of environmental effects on rigid pavement deformation. Frontiers of Structural and Civil Engineering, 2014, 8, 101-114.	2.9	8
46	Integration of a prototype wireless communication system with micro-electromechanical temperature and humidity sensor for concrete pavement health monitoring. Cogent Engineering, 2015, 2, 1014278.	2.2	8
47	Neural Network-Based Multiple-Slab Response Models for Top-Down Cracking Mode in Airfield Pavement Design. Journal of Transportation Engineering Part B: Pavements, 2018, 144, 04018009.	1.5	8
48	Laboratory Evaluation of Silty Soils Stabilized with Lignosulfonate. , 2019, , .		8
49	Energy-efficient design of a carbon fiber-based self-heating concrete pavement system through finite element analysis. Clean Technologies and Environmental Policy, 2020, 22, 1145-1155.	4.1	8
50	Configuration of Electrodes for Electrically Conductive Concrete Heated Pavement Systems. , 2017, , .		7
51	Effect of Concrete Strength and Stiffness Characterization on Predictions of Mechanistic-Empirical Performance for Rigid Pavements. Transportation Research Record, 2011, 2226, 41-50.	1.9	6
52	Effects of concrete grinding residue (CGR) on selected sandy loam properties. Journal of Cleaner Production, 2019, 240, 118057.	9.3	6
53	The Influence of Concrete Grinding Residue on Soil Physical Properties and Plant Growth. Journal of Environmental Quality, 2019, 48, 1842-1848.	2.0	6
54	Evaluation of bio-based fog seal for low-volume road preservation. International Journal of Pavement Research and Technology, 2020, 13, 303-312.	2.6	6

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55	Innovative Nano-engineered Asphalt Concrete for Ice and Snow Controls in Pavement Systems. , 0, , .		6
56	NON-DESTRUCTIVE EVALUATION OF IN-PLACE REHABILITATED CONCRETE PAVEMENTS. Journal of Civil Engineering and Management, 2010, 16, 552-560.	3.5	5
57	A SIMPLIFIED APPROACH FOR PREDICTING EARLY-AGE CONCRETE PAVEMENT DEFORMATION / SUPAPRASTINTAS METODAS, PROGNOZUOJANTIS ANKSTYVOJO BETONO DANGOS DEFORMACIJAS. Journal of Civil Engineering and Management, 2011, 17, 27-35.	3.5	5
58	Influence of Deicing Salts on the Water-Repellency of Portland Cement Concrete Coated with Polytetrafluoroethylene and Polyetheretherketone. , 2017, , .		5
59	Development of Artificial Neural Networks Based Predictive Models for Dynamic Modulus of Airfield Pavement Asphalt Mixtures. , 2018, , .		5
60	Numerical analysis of longitudinal cracking in widened jointed plain concrete pavement systems. International Journal of Pavement Research and Technology, 2019, 12, 277-287.	2.6	5
61	Deterministic and stochastic life-cycle cost analysis for Otta seal surface treatment on low volume roads. International Journal of Pavement Research and Technology, 2019, 12, 101-109.	2.6	5
62	Impact of Bio-Fuel Co-Product Modified Subgrade on Flexible Pavement Performance. , 2012, , .		4
63	Effect of joint spacing and pavement thickness on concrete overlay performance. International Journal of Pavement Research and Technology, 2019, 12, 64-69.	2.6	4
64	ANNFAA: artificial neural network-based tool for the analysis of Federal Aviation Administration's rigid pavement systems. International Journal of Pavement Engineering, 2022, 23, 400-413.	4.4	4
65	In Situ Evaluation of Using Lignosulfonate for Subgrade Stabilization. , 2020, , .		4
66	Pavement curling and warping analysis using wavelet techniques. International Journal of Pavement Engineering, 2021, 22, 1833-1848.	4.4	4
67	Structural and Fatigue Analysis of Jointed Plain Concrete Pavement Top-Down and Bottom-Up Transverse Cracking Subjected to Superloads. Transportation Research Record, 2022, 2676, 76-93.	1.9	4
68	Hydronic Heated Pavement System Using Precast Concrete Pavement for Airport Applications. , 2018, , .		3
69	Critical Responses of Flexible Pavements Under Superheavy Loads and Data-Driven Surrogate Model. International Journal of Pavement Research and Technology, 0, , 1.	2.6	3
70	Evaluation of Small Uncrewed Aircraft Systems Data in Airfield Pavement Crack Detection and Rating. Transportation Research Record, 2023, 2677, 653-668.	1.9	3
71	Smoothness variations in early-age jointed plain concrete pavements. Canadian Journal of Civil Engineering, 2008, 35, 1388-1398.	1.3	2
72	Comparative Performance of Concrete Pavements with Recycled Concrete Aggregate (RCA) and Virgin Aggregate Subbases. , 2011, , .		2

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73	Structural Characterization of Iowa's Rubblized PCC Pavements. <i>Journal of Transportation Engineering</i> , 2012, 138, 406-413.	0.9	2
74	Unbound material characterisation with Nottingham asphalt tester. <i>Proceedings of Institution of Civil Engineers: Construction Materials</i> , 2012, 165, 355-365.	1.1	2
75	Evaluation of the Freeze and Thaw Durability of Road Soils Stabilized with a Biofuel Co-Product. , 2017, , .		2
76	Investigating the Heat Generation Efficiency of Electrically-Conductive Asphalt Mastic Using Infrared Thermal Imaging. , 2018, , .		2
77	Sensitivity Index comparison of pavement mechanistic-empirical design input variables to reflective cracking model for different climatic zones. <i>Road Materials and Pavement Design</i> , 2021, 22, 2232-2247.	4.0	2
78	Proposed Improvements to the Construction of Electrically Conductive Concrete Pavement System Based on Lessons Learned. , 2020, , .		2
79	Early-Age Response of Concrete Pavements to Temperature and Moisture Variations. <i>Baltic Journal of Road and Bridge Engineering</i> , 2010, 5, 132-138.	0.8	2
80	Impact of farm equipment loading on low-volume concrete road structural response and performance. <i>Baltic Journal of Road and Bridge Engineering</i> , 2015, 10, 325-332.	0.8	2
81	Assessment of satellite-based MERRA climate data in AASHTOWare pavement mechanistic-empirical design. <i>Road Materials and Pavement Design</i> , 2022, 23, 2876-2885.	4.0	2
82	Sustainable Use of Lignocellulosic Biorefineries Co-Products in Geotechnical Bulk Applications: Comparative Analysis of Lab Data. , 2011, , .		1
83	Computational Intelligence in Civil and Hydraulic Engineering. <i>Mathematical Problems in Engineering</i> , 2013, 2013, 1-2.	1.1	1
84	I-BACK: Iowa's Intelligent Pavement Backcalculation Software. , 2014, , .		1
85	Construction Techniques for Electrically Conductive Heated Pavement Systems. , 2018, , .		1
86	Long-term performance evaluation of Iowa concrete overlays. <i>International Journal of Pavement Engineering</i> , 2020, , 1-12.	4.4	1
87	Effect of M-E Design Guide Inputs on Flexible Pavement Performance Predictions. <i>Road Materials and Pavement Design</i> , 2007, 8, 375-397.	4.0	1
88	Sustainable Rehabilitation of Deteriorated Concrete Highways: Condition Assessment Using Shuffled Complex Evolution (SCE) Global Optimization Approach. , 2010, , 249-265.		1
89	Mechanistic-Based Characterization of Non-Linear Pavement Mechanical Properties with Evolving Intelligent Information Processing Systems. , 2011, , .		0
90	Performance Evaluation of Roadway Subdrain Outlets in Iowa. <i>Transportation Research Record</i> , 2014, 2462, 68-76.	1.9	0

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91	Alternative Approaches to Determining Robust ANN Based Models for Predicting Critical Airport Rigid Pavement Responses. , 2017, , .		0
92	Effect of Temperature Variations on Electrical Resistivity of Conductive Concrete Heated Pavement System. , 2019, , .		0
93	Evaluation of Radio Frequency Interference Potential of Electrically Conductive Concrete for Heated Pavement Systems. , 2019, , .		0
94	Iowa Experience on Local Calibration of AASHTOWare Pavement ME Design (PMED) for Jointed Plain Concrete Pavements. , 0, , .		0
95	System Design Improvements of Heated Pavements: Recommendations for Future Projects. , 0, , .		0
96	Accuracy assessment of light detection and ranging system measurements for jointed concrete pavement surface geometry. Road Materials and Pavement Design, 0, , 1-17.	4.0	0