B Shane Underwood

List of Publications by Year
in descending order

71	2,249	218592 26	233338 45
papers	citations	h-index	g-index

71	71	71	1404
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Improved calculation method of damage parameter in viscoelastic continuum damage model. International Journal of Pavement Engineering, 2010, 11, 459-476.	2.2	170
2	Simplified Viscoelastic Continuum Damage Model as Platform for Asphalt Concrete Fatigue Analysis. Transportation Research Record, 2012, 2296, 36-45.	1.0	146
3	Transportation resilience to climate change and extreme weather events â€“ Beyond risk and robustness. Transport Policy, 2019, 74, 174-186.	3.4	127
4	Increased costs to US pavement infrastructure from future temperature rise. Nature Climate Change, 2017, 7, 704-707.	8.1	103
5	Healing characteristics of asphalt binder. Construction and Building Materials, 2012, 27, 570-577.	3.2	100
6	Experimental investigation into the multiscale behaviour of asphalt concrete. International Journal of Pavement Engineering, 2011, 12, 357-370.	2.2	85
7	Fail-safe and safe-to-fail adaptation: decision-making for urban flooding under climate change. Climatic Change, 2017, 145, 397-412.	1.7	85
8	Microstructural investigation of asphalt concrete for performing multiscale experimental studies. International Journal of Pavement Engineering, 2013, 14, 498-516.	2.2	83
9	Effects of Oxidative Aging on Asphalt Mixture Properties. Transportation Research Record, 2012, 2296, 77-85.	1.0	78
10	Application of Artificial Neural Networks for Estimating Dynamic Modulus of Asphalt Concrete. Transportation Research Record, 2009, 2127, 173-186.	1.0	70
11	Effect of volumetric factors on the mechanical behavior of asphalt fine aggregate matrix and the relationship to asphalt mixture properties. Construction and Building Materials, 2013, 49, 672-681.	3.2	70
12	Impact of climate change on pavement structural performance in the United States. Transportation Research, Part D: Transport and Environment, 2017, 57, 172-184.	3.2	70
13	A continuum damage model for asphalt cement and asphalt mastic fatigue. International Journal of Fatigue, 2016, 82, 387-401.	2.8	67
14	A four phase micro-mechanical model for asphalt mastic modulus. Mechanics of Materials, 2014, 75, 13-33.	1.7	62
15	Keeping infrastructure reliable under climate uncertainty. Nature Climate Change, 2020, 10, 488-490.	8.1	59
16	Application of viscoelastic continuum damage model based finite element analysis to predict the fatigue performance of asphalt pavements. KSCE Journal of Civil Engineering, 2008, 12, 109-120.	0.9	51
17	Autonomous Vehicles. Transportation Research Record, 2017, 2640, 21-28.	1.0	51
18	Interpreting Stress Sensitivity in the Multiple Stress Creep and Recovery Test. Journal of Materials in Civil Engineering, 2018, 30, .	1.3	39

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19	Effects of aging on asphalt mixture and pavement performance. Construction and Building Materials, 2020, 258, 120309.	3.2	36
20	Nonlinear viscoelastic analysis of asphalt cement and asphalt mastics. International Journal of Pavement Engineering, 2015, 16, 510-529.	2.2	35
21	Infrastructure resilience to navigate increasingly uncertain and complex conditions in the Anthropocene. Npj Urban Sustainability, 2021, 1, .	3.7	35
22	Time-Temperature Superposition for HMA with Growing Damage and Permanent Strain in Confined Tension and Compression. Journal of Materials in Civil Engineering, 2010, 22, 415-422.	1.3	33
23	Low-temperature performance grade characterisation of asphalt binder using the dynamic shear rheometer. International Journal of Pavement Engineering, 2022, 23, 811-823.	2.2	32
24	Effect of Synthetic Fiber State on Mechanical Performance of Fiber Reinforced Asphalt Concrete. Transportation Research Record, 2018, 2672, 42-51.	1.0	31
25	Testing and Modeling of Fine Aggregate Matrix and Its Relationship to Asphalt Concrete Mix. Transportation Research Record, 2015, 2507, 120-127.	1.0	30
26	Fatigue and healing performance assessment of asphalt binder from rheological and chemical characteristics. Materials and Structures/Materiaux Et Constructions, 2018, 51, 1.	1.3	30
27	Comparison of conventional, polymer, and rubber asphalt mixtures using viscoelastic continuum damage model. Road Materials and Pavement Design, 2014, 15, 588-605.	2.0	25
28	Experimental Investigations of the Viscoelastic and Damage Behaviors of Hot-Mix Asphalt in Compression. Journal of Materials in Civil Engineering, 2011, 23, 459-466.	1.3	24
29	Effects of the International Roughness Index and Rut Depth on Crash Rates. Transportation Research Record, 2018, 2672, 418-429.	1.0	24
30	Past and Present Design Practices and Uncertainty in Climate Projections are Challenges for Designing Infrastructure to Future Conditions. Journal of Infrastructure Systems, 2020, 26, .	1.0	24
31	Review of the Superpave performance grading system and recent developments in the performance-based test methods for asphalt binder characterization. Construction and Building Materials, 2022, 319, 126063.	3.2	24
32	Microstructural Association Model for Upscaling Prediction of Asphalt Concrete Dynamic Modulus. Journal of Materials in Civil Engineering, 2013, 25, 1153-1161.	1.3	21
33	Fatigue Performance Prediction of Asphalt Composites Subjected to Cyclic Loading with Intermittent Rest Periods. Transportation Research Record, 2016, 2576, 72-82.	1.0	18
34	Micromechanical shear modulus modeling of activated crumb rubber modified asphalt cements. Construction and Building Materials, 2017, 150, 56-65.	3.2	17
35	Uncertainty Quantification of Simplified Viscoelastic Continuum Damage Fatigue Model using the Bayesian Inference-Based Markov Chain Monte Carlo Method. Transportation Research Record, 2020, 2674, 247-260.	1.0	17
36	Reduced Testing Protocol for Measuring the Confined Dynamic Modulus of Asphalt Mixtures. Transportation Research Record, 2011, 2210, 20-29.	1.0	16

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37	Comprehensive Evaluation of Small Strain Viscoelastic Behavior of Asphalt Concrete. Journal of Testing and Evaluation, 2012, 40, 622-632.	0.4	16
38	Effect of MSCR Percent Recovery on Performance of Polymer Modified Asphalt Mixtures. Transportation Research Record, 2019, 2673, 308-319.	1.0	15
39	Relationship between Asphalt Binder Parameters and Asphalt Mixture Rutting. Transportation Research Record, 2019, 2673, 431-446.	1.0	14
40	Nonlinear Viscoelastic Behavior of Asphalt Concrete and Its Implication for Fatigue Modeling. Transportation Research Record, 2013, 2373, 100-108.	1.0	13
41	Characterization of Microdamage Healing in Asphalt Concrete with a Smeared Continuum Damage Approach. Transportation Research Record, 2014, 2447, 126-135.	1.0	13
42	Molecular weight distribution of asphalt binders from Laser Desorption Mass Spectroscopy (LDMS) technique and its relationship to linear viscoelastic relaxation spectra. Fuel, 2020, 262, 116444.	3.4	13
43	Reliability Analysis of Fatigue Life Prediction from the Viscoelastic Continuum Damage Model. Transportation Research Record, 2016, 2576, 91-99.	1.0	12
44	A method to select general circulation models for pavement performance evaluation. International Journal of Pavement Engineering, 2021, 22, 134-146.	2.2	12
45	Investigation of Aging in Hydrated Lime and Portland Cement Modified Asphalt Concrete at Multiple Length Scales. Journal of Materials in Civil Engineering, 2016, 28, .	1.3	11
46	Simulation of the asphalt concrete stiffness degradation using simplified viscoelastic continuum damage model. International Journal of Fatigue, 2020, 140, 105850.	2.8	11
47	Comparison of Fatigue Damage, Healing, and Endurance Limit with Beam and Uniaxial Fatigue Tests. Transportation Research Record, 2014, 2447, 32-41.	1.0	10
48	Effect of Loading Waveform Pattern and Rest Period on Fatigue Life of Asphalt Concrete Using Viscoelastic Continuum Damage Model. Transportation Research Record, 2018, 2672, 451-461.	1.0	10
49	Identifying Indicators for Fatigue Cracking in Hot-Mix Asphalt Pavements Using Viscoelastic Continuum Damage Principles. Transportation Research Record, 2016, 2576, 28-39.	1.0	9
50	Nonlinear Viscoelastic Response of Crumb Rubber Modified Asphalt Binder Under Large Strains. Transportation Research Record, 2020, 2674, 139-149.	1.0	9
51	Rutting performance prediction using index-volumetrics relationships with stress sweep rutting test and Hamburg wheel-track test. Construction and Building Materials, 2021, 295, 123664.	3.2	9
52	Experimental Study for Crowdsourced Ride Quality Index Estimation Using Smartphones. Journal of Transportation Engineering Part B: Pavements, 2020, 146, .	0.8	8
53	Statistical Validation of Crowdsourced Pavement Ride Quality Measurements from Smartphones. Journal of Computing in Civil Engineering, 2020, 34, .	2.5	8
54	Correlation of asphalt binder linear viscoelasticity (LVE) parameters and the ranking consistency related to fatigue cracking resistance. Construction and Building Materials, 2022, 322, 126450.	3.2	8

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55	Evaluation of the sensitivity of asphalt concrete modulus to binder oxidation with a multiple length scale study. Construction and Building Materials, 2017, 152, 954-963.	3.2	7
56	Development of a Test Protocol to Measure Uniaxial Fatigue Damage and Healing. Transportation Research Record, 2016, 2576, 10-18.	1.0	6
57	Use of Fine Aggregate Matrix Experimental Data in Improving Reliability of Fatigue Life Prediction of Asphalt Concrete: Sensitivity of This Approach to Variation in Input Parameters. Transportation Research Record, 2017, 2631, 65-73.	1.0	6
58	Strain-Level Determination Procedure for Small-Specimen Cyclic Fatigue Testing in the Asphalt Mixture Performance Tester. Transportation Research Record, 2019, 2673, 824-835.	1.0	5
59	Predictive Framework for Modeling Changes in Asphalt Mixture Moduli with Oxidative Aging. Transportation Research Record, 2020, 2674, 79-93.	1.0	5
60	Effect of laboratory oxidative aging on dynamic shear rheometer measures of asphalt binder fatigue cracking resistance. Construction and Building Materials, 2022, 337, 127566.	3.2	5
61	Estimation of Asphalt Concrete Modulus Using the Ultrasonic Pulse Velocity Test. Journal of Transportation Engineering Part B: Pavements, 2018, 144, 04018008.	0.8	4
62	Top-Down Cracking Prediction Tool for Hot Mix Asphalt Pavements. RILEM Bookseries, 2012, , 465-474.	0.2	4
63	Exploring indicators for fatigue cracking in hot mix asphalt pavements using simplified-viscoelastic continuum damage theory. Road Materials and Pavement Design, 2018, 19, 536-545.	2.0	3
64	Implementation of the AASHTO M 332 Specification: A Case Study. Transportation Research Record, 2020, 2674, 959-971.	1.0	3
65	Use of Resampling Method to Construct Variance Index and Repeatability Limit of Damage Characteristic Curve. Transportation Research Record, 2021, 2675, 194-207.	1.0	3
66	COVID-19, Uncertainty, and the Need for Resilience-Based Thinking in Pavement Engineering. Journal of Transportation Engineering Part B: Pavements, 2021, 147, 02520001.	0.8	2
67	Developing an Indicator for Fatigue Cracking in Hot Mix Asphalt Pavements Using Viscoelastic Continuum Damage Principles. RILEM Bookseries, 2016, , 381-387.	0.2	2
68	Using Limited Purchase Specification Tests to Perform Full Linear Viscoelastic Characterization of Asphalt Binder. Journal of Testing and Evaluation, 2010, 38, 558-566.	0.4	2
69	Novel Index for Vulnerability Assessment of Flexible Pavement Infrastructure to Temperature Rise: Case Study of Developing Countries. Journal of Infrastructure Systems, 2022, 28, .	1.0	2
70	Cracking performance predictions using index-volumetrics relationships with direct tension cyclic fatigue test and Illinois Flexibility Index Test (I-FIT). Construction and Building Materials, 2021, 315, 125631.	3.2	1
71	Fatigue behaviour of conventional and rubber-modified gap-graded asphalt mixtures using bending and axial fatigue tests. Australian Journal of Civil Engineering, 2021, 19, 195-207.	0.6	0