

# William G Buttler

## List of Publications by Year in descending order

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Version: 2024-02-01

61  
papers

2,592  
citations

218381

26  
h-index

197535

49  
g-index

62  
all docs

62  
docs citations

62  
times ranked

1458  
citing authors

#	ARTICLE	IF	CITATIONS
1	A bilinear cohesive zone model tailored for fracture of asphalt concrete considering viscoelastic bulk material. <i>Engineering Fracture Mechanics</i> , 2006, 73, 2829-2848.	2.0	317
2	Simulation of Crack Propagation in Asphalt Concrete Using an Intrinsic Cohesive Zone Model. <i>Journal of Engineering Mechanics - ASCE</i> , 2006, 132, 1215-1223.	1.6	162
3	Simulation of Fracture Behavior in Asphalt Concrete Using a Heterogeneous Cohesive Zone Discrete Element Model. <i>Journal of Materials in Civil Engineering</i> , 2008, 20, 552-563.	1.3	162
4	Deep machine learning approach to develop a new asphalt pavement condition index. <i>Construction and Building Materials</i> , 2020, 247, 118513.	3.2	139
5	Micromechanical fracture modeling of asphalt concrete using a single-edge notched beam test. <i>Materials and Structures/Materiaux Et Constructions</i> , 2009, 42, 677-689.	1.3	126
6	Effects of Recycled Asphalt Pavement Amounts on Low-Temperature Cracking Performance of Asphalt Mixtures Using Acoustic Emissions. <i>Transportation Research Record</i> , 2011, 2208, 64-71.	1.0	112
7	Evaluation of Warm Mix Asphalt Mixtures Containing Reclaimed Asphalt Pavement through Mechanical Performance Tests and an Acoustic Emission Approach. <i>Journal of Materials in Civil Engineering</i> , 2013, 25, 1887-1897.	1.3	94
8	Pavement Image Datasets: A New Benchmark Dataset to Classify and Densify Pavement Distresses. <i>Transportation Research Record</i> , 2020, 2674, 328-339.	1.0	94
9	Investigation of the Fracture Resistance of Hot-Mix Asphalt Concrete Using a Disk-Shaped Compact Tension Test. <i>Transportation Research Record</i> , 2005, 1929, 183-192.	1.0	86
10	Numerical fracture analysis on the specimen size dependency of asphalt concrete using a cohesive softening model. <i>Construction and Building Materials</i> , 2009, 23, 2112-2120.	3.2	83
11	Effect of Factors Affecting Fracture Energy of Asphalt Concrete at Low Temperature. <i>Road Materials and Pavement Design</i> , 2008, 9, 397-416.	2.0	80
12	New machine learning-based prediction models for fracture energy of asphalt mixtures. <i>Measurement: Journal of the International Measurement Confederation</i> , 2019, 135, 438-451.	2.5	77
13	Evaluation of low temperature viscoelastic properties and fracture behavior of bio-asphalt mixtures. <i>International Journal of Pavement Engineering</i> , 2018, 19, 362-369.	2.2	70
14	Low-Temperature Performance Characterization of Biomodified Asphalt Mixtures that Contain Reclaimed Asphalt Pavement. <i>Transportation Research Record</i> , 2013, 2371, 49-57.	1.0	62
15	Laboratory Mixed-Mode Cracking of Asphalt Concrete Using the Single-Edge Notch Beam. <i>Road Materials and Pavement Design</i> , 2010, 11, 947-968.	2.0	58
16	Thermal reflective cracking of asphalt concrete overlays. <i>International Journal of Pavement Engineering</i> , 2010, 11, 477-488.	2.2	52
17	Investigating short-term and long-term binder performance of high-RAP mixtures containing waste cooking oil. <i>Journal of Traffic and Transportation Engineering (English Edition)</i> , 2019, 6, 396-406.	2.0	52
18	Effect of Binder Type, Aggregate, and Mixture Composition on Fracture Energy of Hot-Mix Asphalt in Cold Climates. <i>Transportation Research Record</i> , 2007, 2001, 102-109.	1.0	51

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19	Performance Evaluation of Asphalt Mixtures with Reclaimed Asphalt Pavement and Recycled Asphalt Shingles in Missouri. <i>Transportation Research Record</i> , 2019, 2673, 392-403.	1.0	43
20	IlliTc " low-temperature cracking model for asphalt pavements. <i>Road Materials and Pavement Design</i> , 2013, 14, 57-78.	2.0	39
21	Evaluation of Low-Temperature Cracking Performance of Asphalt Pavements Using Acoustic Emission: A Review. <i>Applied Sciences (Switzerland)</i> , 2018, 8, 306.	1.3	39
22	Application of Graded Finite Elements for Asphalt Pavements. <i>Journal of Engineering Mechanics - ASCE</i> , 2006, 132, 240-249.	1.6	37
23	Cooling cycle effects on low temperature cracking characteristics of asphalt concrete mixture. <i>Materials and Structures/Materiaux Et Constructions</i> , 2014, 47, 1359-1371.	1.3	33
24	Characterization of embrittlement temperature of asphalt materials through implementation of acoustic emission technique. <i>Construction and Building Materials</i> , 2016, 111, 147-152.	3.2	33
25	Performance Analysis of Asphalt Mixtures Modified with Ground Tire Rubber Modifiers and Recycled Materials. <i>Sustainability</i> , 2019, 11, 1792.	1.6	31
26	Developing a prediction model for rutting depth of asphalt mixtures using gene expression programming. <i>Construction and Building Materials</i> , 2021, 267, 120543.	3.2	31
27	Development of a balanced cracking index for asphalt mixtures tested in semi-circular bending with load-LLD measurements. <i>Measurement: Journal of the International Measurement Confederation</i> , 2021, 173, 108658.	2.5	30
28	Performance space diagram for the evaluation of high- and low-temperature asphalt mixture performance. <i>Road Materials and Pavement Design</i> , 2017, 18, 336-358.	2.0	29
29	Acoustic emission quantitative evaluation of rejuvenators to restore embrittlement temperatures to oxidized asphalt mixtures. <i>Construction and Building Materials</i> , 2016, 126, 913-923.	3.2	28
30	Using binder and mixture space diagrams to evaluate the effect of re-refined engine oil bottoms on binders and mixtures after ageing. <i>Road Materials and Pavement Design</i> , 2017, 18, 154-182.	2.0	22
31	Micromechanical Fracture Modeling of Asphalt Mixture Using the Discrete Element Method. , 2005, , 1.		21
32	Influence of the Cohesive Zone Model Shape Parameter on Asphalt Concrete Fracture Behavior. <i>AIP Conference Proceedings</i> , 2008, , .	0.3	21
33	Nondestructive Low-Temperature Cracking Characterization of Asphalt Materials. <i>Journal of Materials in Civil Engineering</i> , 2017, 29, .	1.3	21
34	An efficient mixed-mode rate-dependent cohesive fracture model using sigmoidal functions. <i>Engineering Fracture Mechanics</i> , 2018, 192, 307-327.	2.0	20
35	Viscoelastic Functionally Graded Finite-Element Method Using Correspondence Principle. <i>Journal of Materials in Civil Engineering</i> , 2011, 23, 39-48.	1.3	19
36	Investigation of cracking mechanisms in rubber-modified asphalt through fracture testing of mastic specimens. <i>Road Materials and Pavement Design</i> , 2022, 23, 1544-1563.	2.0	18

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37	Fractional calculus derivation of a rate-dependent PPR-based cohesive fracture model: theory, implementation, and numerical results. <i>International Journal of Fracture</i> , 2019, 216, 1-29.	1.1	17
38	Low Temperature Cracking Prediction with Consideration of Temperature Dependent Bulk and Fracture Properties. <i>Road Materials and Pavement Design</i> , 2010, 11, 33-59.	2.0	15
39	Spiral cracking pattern in asphalt materials. <i>Materials and Design</i> , 2017, 116, 609-615.	3.3	15
40	Laboratory and Field Evaluation of Pre-Treated Dry-Process Rubber-Modified Asphalt Binders and Dense-Graded Mixtures. <i>Transportation Research Record</i> , 2021, 2675, 381-394.	1.0	15
41	Compact tension test for fracture characterization of thin bonded asphalt overlay systems at low temperature. <i>Materials and Structures/Materiaux Et Constructions</i> , 2012, 45, 1207-1220.	1.3	14
42	Cracking resistance of thin-bonded overlays using fracture test, numerical simulations and early field performance. <i>International Journal of Pavement Engineering</i> , 2013, 14, 540-552.	2.2	14
43	Rate-dependent fracture modeling of asphalt concrete using the discrete element method. <i>Canadian Journal of Civil Engineering</i> , 2009, 36, 320-330.	0.7	11
44	A deep learning approach to predict Hamburg rutting curve. <i>Road Materials and Pavement Design</i> , 2021, 22, 2159-2180.	2.0	11
45	Recycled asphalt shingle modified asphalt mixture design and performance evaluation. <i>Journal of Traffic and Transportation Engineering (English Edition)</i> , 2020, 7, 205-214.	2.0	10
46	Use of Nonlinear Acoustic Measurements for Estimation of Fracture Performance of Aged Asphalt Mixtures. <i>Transportation Research Record</i> , 2017, 2631, 11-19.	1.0	9
47	Three-dimensional micromechanical pavement model development for the study of block cracking. <i>Construction and Building Materials</i> , 2019, 206, 35-45.	3.2	9
48	Viscoelastic functionally graded finite element method with recursive time integration and applications to flexible pavements. <i>International Journal for Numerical and Analytical Methods in Geomechanics</i> , 2012, 36, 1194-1219.	1.7	7
49	Development of two-dimensional micromechanical, viscoelastic, and heterogeneous-based models for the study of block cracking in asphalt pavements. <i>Construction and Building Materials</i> , 2020, 244, 118146.	3.2	7
50	Investigation of recycled asphalt mixtures in Missouri: laboratory, field, and ILLI-TC modelling. <i>Road Materials and Pavement Design</i> , 2022, 23, 1345-1369.	2.0	6
51	Adjustment of Measuring Devices With Linear Models. <i>Technometrics</i> , 2004, 46, 127-134.	1.3	5
52	Characterization of viscoelastic properties of asphalt mixture at low temperatures using DC(T) creep test. <i>Construction and Building Materials</i> , 2021, 298, 123731.	3.2	5
53	Can crumb rubber modifier effectively replace the use of polymer- modified bitumen in asphalt mixture?. <i>Sustainable and Resilient Infrastructure</i> , 2022, 7, 515-530.	1.7	5
54	Nondestructive Acoustic Emission Test to Evaluate Thermal Damage in Asphalt Concrete Materials. <i>Journal of Testing and Evaluation</i> , 2018, 46, 118-126.	0.4	5

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55	Evaluation and Life Extension of Asphalt Pavements Using Rejuvenators and Noncollinear Ultrasonic Wave Mixing: A Review. Journal of Nondestructive Evaluation, Diagnostics and Prognostics of Engineering Systems, 2018, 1, .	0.7	4
56	Three-dimensional analytical model for exploration of the block cracking phenomenon in asphalt pavements. Road Materials and Pavement Design, 2020, 21, 985-1005.	2.0	4
57	Development of a Performance-Related Framework for Asphalt Mixture Design for the Illinois Tollway. Transportation Research Record, 0, , 036119812110148.	1.0	4
58	Mechanisms of cracking: characterisation and modelling. Road Materials and Pavement Design, 2018, 19, 495-495.	2.0	3
59	Demonstration Project for Ground Tire Rubber and Post-Consumer Recycled Plastic-Modified Asphalt Mixtures. Transportation Research Record, 2022, 2676, 468-482.	1.0	3
60	Performance grade of asphalt mixtures based on mixture performance test thresholds. Construction and Building Materials, 2021, 302, 124357.	3.2	1
61	Application of a Coupled Digital Image Correlation and Discrete Element Method Approach to Model Low Temperature Asphalt Concrete Fracture. RILEM Bookseries, 2016, , 713-718.	0.2	1