

Michael R Hill

List of Publications by Year in descending order

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136
papers

2,768
citations

172386

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214721

47
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142
all docs

142
docs citations

142
times ranked

1451
citing authors

#	ARTICLE	IF	CITATIONS
1	Residual stress, stress relief, and inhomogeneity in aluminum plate. <i>Scripta Materialia</i> , 2002, 46, 77-82.	2.6	226
2	The effects of laser peening and shot peening on high cycle fatigue in 7050-T7451 aluminum alloy. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2010, 527, 699-707.	2.6	145
3	The effects of laser peening and shot peening on fretting fatigue in Ti-6Al-4V coupons. <i>Tribology International</i> , 2009, 42, 1250-1262.	3.0	132
4	Uncertainty, Model Error, and Order Selection for Series-Expanded, Residual-Stress Inverse Solutions. <i>Journal of Engineering Materials and Technology, Transactions of the ASME</i> , 2006, 128, 175-185.	0.8	106
5	Through-thickness distributions of residual stresses in two extreme heat-input thick welds: A neutron diffraction, contour method and deep hole drilling study. <i>Acta Materialia</i> , 2013, 61, 3564-3574.	3.8	92
6	Assessment of Tensile Residual Stress Mitigation in Alloy 22 Welds Due to Laser Peening. <i>Journal of Engineering Materials and Technology, Transactions of the ASME</i> , 2004, 126, 465-473.	0.8	84
7	The effects of laser peening on high-cycle fatigue in 7085-T7651 aluminum alloy. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2008, 477, 208-216.	2.6	80
8	Multi-Axial Contour Method for Mapping Residual Stresses in Continuously Processed Bodies. <i>Experimental Mechanics</i> , 2006, 46, 473-490.	1.1	78
9	Effect of interlayers and scanning strategies on through-thickness residual stress distributions in additive manufactured ferritic-austenitic steel structure. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2019, 744, 618-629.	2.6	76
10	Effect of compressive residual stress introduced by cavitation peening and shot peening on the improvement of fatigue strength of stainless steel. <i>Journal of Materials Processing Technology</i> , 2021, 288, 116877.	3.1	70
11	The effect of residual stresses on brittle and ductile fracture initiation predicted by micromechanical models. <i>International Journal of Fracture</i> , 1996, 82, 317-333.	1.1	62
12	Estimation of Uncertainty for Contour Method Residual Stress Measurements. <i>Experimental Mechanics</i> , 2015, 55, 577-585.	1.1	53
13	Eigenstrain-based model for prediction of laser peening residual stresses in arbitrary three-dimensional bodies Part 1: Model description. <i>Journal of Strain Analysis for Engineering Design</i> , 2009, 44, 1-11.	1.0	51
14	Residual stress and fatigue life in laser shock peened open hole samples. <i>International Journal of Fatigue</i> , 2012, 44, 8-13.	2.8	51
15	Through-thickness distributions of residual stresses in an 80mm thick weld using neutron diffraction and contour method. <i>Journal of Materials Science</i> , 2015, 50, 784-793.	1.7	51
16	The effects of process variations on residual stress in laser peened 7049 T73 aluminum alloy. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2003, 349, 279-291.	2.6	50
17	Intralaboratory Repeatability of Residual Stress Determined by the Slitting Method. <i>Experimental Mechanics</i> , 2007, 47, 745-752.	1.1	49
18	Residual Stress Measurement in a Ceramic-Metallic Graded Material. <i>Journal of Engineering Materials and Technology, Transactions of the ASME</i> , 2002, 124, 185-191.	0.8	48

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19	Outcomes and Conclusions from the 2018 AM-Bench Measurements, Challenge Problems, Modeling Submissions, and Conference. Integrating Materials and Manufacturing Innovation, 2020, 9, 1-15.	1.2	47
20	Elastic Residual Strain and Stress Measurements and Corresponding Part Deflections of 3D Additive Manufacturing Builds of IN625 AM-Bench Artifacts Using Neutron Diffraction, Synchrotron X-Ray Diffraction, and Contour Method. Integrating Materials and Manufacturing Innovation, 2019, 8, 318-334.	1.2	45
21	Reducing residual stress by selective large-area diode surface heating during laser powder bed fusion additive manufacturing. Additive Manufacturing, 2019, 28, 228-235.	1.7	44
22	Fatigue crack growth performance of peened friction stir welded 2195 aluminum alloy joints at elevated and cryogenic temperatures. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2009, 519, 61-69.	2.6	43
23	The effect of cold-rolling on the microstructure and corrosion behaviour of 316L alloy in FLiNaK molten salt. Corrosion Science, 2018, 142, 133-144.	3.0	38
24	Measurement of Fiber-scale Residual Stress Variation in a Metal-matrix Composite. Journal of Composite Materials, 2004, 38, 2079-2095.	1.2	37
25	Repeatability of the Contour Method for Residual Stress Measurement. Experimental Mechanics, 2014, 54, 1269-1277.	1.1	37
26	Eigenstrain-based model for prediction of laser peening residual stresses in arbitrary three-dimensional bodies Part 2: Model verification. Journal of Strain Analysis for Engineering Design, 2009, 44, 13-27.	1.0	35
27	Effect of laser peening on fatigue performance in 300M steel. Fatigue and Fracture of Engineering Materials and Structures, 2011, 34, 521-533.	1.7	34
28	Effect of Strain Gage Length When Determining Residual Stress by Slitting. Journal of Engineering Materials and Technology, Transactions of the ASME, 2007, 129, 143-150.	0.8	33
29	Fatigue crack growth rates of X100 steel welds in high pressure hydrogen gas considering residual stress effects. Engineering Fracture Mechanics, 2018, 194, 42-51.	2.0	32
30	Three Dimensional Finite Element Analysis of a Split-Sleeve Cold Expansion Process. Journal of Engineering Materials and Technology, Transactions of the ASME, 2009, 131, .	0.8	31
31	Effects of ultrasonic impact treatment on weld microstructure, hardness, and residual stress. Materials Science and Technology, 2017, 33, 1601-1609.	0.8	29
32	Superposition and Destructive Residual Stress Measurements. Experimental Mechanics, 2013, 53, 339-344.	1.1	27
33	Improved test method for very low fatigue-crack-growth-rate data. Fatigue and Fracture of Engineering Materials and Structures, 2011, 34, 270-279.	1.7	25
34	Fatigue crack growth rates in high pressure hydrogen gas for multiple X100 pipeline welds accounting for crack location and residual stress. Engineering Fracture Mechanics, 2020, 228, 106846.	2.0	24
35	A New Mechanical Method for Biaxial Residual Stress Mapping. Experimental Mechanics, 2015, 55, 1139-1150.	1.1	23
36	Improved data reduction for the deep-hole method of residual stress measurement. Journal of Strain Analysis for Engineering Design, 2003, 38, 65-77.	1.0	22

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37	Intermethod Comparison and Evaluation of Measured Near Surface Residual Stress in Milled Aluminum. <i>Experimental Mechanics</i> , 2021, 61, 1309-1322.	1.1	21
38	A single loading direction for fatigue life prediction and testing of handlebars for off-road bicycles. <i>International Journal of Fatigue</i> , 2002, 24, 1149-1157.	2.8	20
39	Correlation of one-dimensional fatigue crack growth at cold-expanded holes using linear fracture mechanics and superposition. <i>Engineering Fracture Mechanics</i> , 2011, 78, 1389-1406.	2.0	20
40	Domain-independent values of the J-integral for cracks in three-dimensional residual stress bearing bodies. <i>Engineering Fracture Mechanics</i> , 2002, 69, 1301-1314.	2.0	19
41	Two-Dimensional Mapping of In-plane Residual Stress with Slitting. <i>Experimental Mechanics</i> , 2018, 58, 151-166.	1.1	18
42	Micromechanical modeling of fracture initiation in 7050 aluminum. <i>Engineering Fracture Mechanics</i> , 2002, 69, 2163-2186.	2.0	17
43	Forensic determination of residual stresses and KI from fracture surface mismatch. <i>Engineering Fracture Mechanics</i> , 2014, 116, 158-171.	2.0	17
44	Analysis of machining-induced residual stresses of milled aluminum workpieces, their repeatability, and their resulting distortion. <i>International Journal of Advanced Manufacturing Technology</i> , 2021, 115, 1089.	1.5	17
45	Measurement of Thickness-Average Residual Stress Near the Edge of a Thin Laser Peened Strip. <i>Journal of Engineering Materials and Technology, Transactions of the ASME</i> , 2003, 125, 283-293.	0.8	16
46	Characterisation of residual stresses in heat treated, high strength aluminium alloy extrusions. <i>Materials Science and Technology</i> , 2016, 32, 1427-1438.	0.8	16
47	On the effect of cold-rolling on the corrosion of SS316L alloy in a molten carbonate salt. <i>Solar Energy Materials and Solar Cells</i> , 2019, 202, 110136.	3.0	16
48	Measurement of laser peening residual stresses. <i>Materials Science and Technology</i> , 2005, 21, 3-9.	0.8	15
49	A benchmark fracture mechanics solution for a two-dimensional eigenstrain problem considering residual stress, the stress intensity factor, and superposition. <i>Engineering Fracture Mechanics</i> , 2016, 163, 313-326.	2.0	15
50	Validation of a Contour Method Single-Measurement Uncertainty Estimator. <i>Experimental Mechanics</i> , 2018, 58, 767-781.	1.1	15
51	Two-dimensional mapping of residual stresses in a thick dissimilar weld using contour method, deep hole drilling, and neutron diffraction. <i>Journal of Materials Science</i> , 2016, 51, 10620-10631.	1.7	14
52	Evaluation of Residual Stress Corrections to Fracture Toughness Values. <i>Journal of ASTM International</i> , 2008, 5, 1-11.	0.2	14
53	The influence of residual stress on fatigue crack growth rates of additively manufactured Type 304L stainless steel. <i>International Journal of Fatigue</i> , 2022, 162, 106954.	2.8	14
54	An improved cutting plan for removing laser amplifier slabs from Yb:S-FAP single crystals using residual stress measurement and finite element modeling. <i>Journal of Crystal Growth</i> , 2004, 265, 627-641.	0.7	12

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55	Residual Stress Measurements in Dissimilar Weld Metal. <i>Experimental Mechanics</i> , 2015, 55, 1093-1103.	1.1	12
56	Simulation based compensation techniques to minimize distortion of thin-walled monolithic aluminum parts due to residual stresses. <i>CIRP Journal of Manufacturing Science and Technology</i> , 2022, 38, 427-441.	2.3	12
57	Laser Shock Processing of ENAW 6082 Aluminium Alloy Surface. <i>Materials Science Forum</i> , 0, 589, 379-384.	0.3	11
58	Optimization of Residual Stress Measurement Conditions for a 2D Method Using X-ray Diffraction and Its Application for Stainless Steel Treated by Laser Cavitation Peening. <i>Materials</i> , 2021, 14, 2772.	1.3	11
59	Residual Stress From Cold Expansion of Fastener Holes: Measurement, Eigenstrain, and Process Finite Element Modeling. <i>Journal of Engineering Materials and Technology, Transactions of the ASME</i> , 2017, 139, .	0.8	10
60	An Uncertainty Estimator for Slitting Method Residual Stress Measurements Including the Influence of Regularization. <i>Experimental Mechanics</i> , 2020, 60, 65-79.	1.1	10
61	Precision of Hole-Drilling Residual Stress Depth Profile Measurements and an Updated Uncertainty Estimator. <i>Experimental Mechanics</i> , 2021, 61, 549-564.	1.1	10
62	Investigation on the scale effects of initial bulk and machining induced residual stresses of thin walled milled monolithic aluminum workpieces on part distortions: experiments and finite element prediction model. <i>Procedia CIRP</i> , 2021, 102, 337-342.	1.0	10
63	Weight functions for a finite width plate with single or double radial cracks at a circular hole. <i>Engineering Fracture Mechanics</i> , 2016, 168, 112-130.	2.0	9
64	Fracture Testing of a Layered Functionally Graded Material. , 2002, , 169-184.		9
65	Determination of residual stress intensity factor in the compact tension coupon. <i>Engineering Fracture Mechanics</i> , 2012, 88, 28-34.	2.0	8
66	Effect of Strain Hardened Inner Surface Layers on Stress Corrosion Cracking of Type 316 Stainless Steel in Simulated PWR Primary Water. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2019, 50, 2462-2485.	1.1	8
67	Residual stress analysis of in situ surface layer heating effects on laser powder bed fusion of 316L stainless steel. <i>Additive Manufacturing</i> , 2021, 47, 102252.	1.7	8
68	Fatigue Crack Closure in Residual Stress Bearing Materials. <i>Journal of ASTM International</i> , 2012, 9, 1-16.	0.2	8
69	Effect of Residual Stress on Brittle Fracture Testing. , 1999, , 154-175.		8
70	Direct current potential difference correlation for open-hole, single-crack coupons. <i>Engineering Fracture Mechanics</i> , 2013, 99, 141-146.	2.0	7
71	Biaxial Residual Stress Mapping for a Dissimilar Metal Welded Nozzle. <i>Journal of Pressure Vessel Technology, Transactions of the ASME</i> , 2016, 138, .	0.4	7
72	Complementary Measurements of Residual Stresses Before and After Base Plate Removal in an Intricate Additively-Manufactured Stainless-Steel Valve Housing. <i>Additive Manufacturing</i> , 2020, 36, 101555.	1.7	7

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73	The Effect of Bulk Residual Stress on Milling-Induced Residual Stress and Distortion. Experimental Mechanics, 2022, 62, 1437-1459.	1.1	7
74	A numerical simulation of the residual stresses in laser-peened friction stir-welded aluminum 2195 joints. International Journal of Structural Integrity, 2011, 2, 62-73.	1.8	6
75	Residual Stress Measurements of Explosively Clad Cylindrical Pressure Vessels. Journal of Pressure Vessel Technology, Transactions of the ASME, 2012, 134, .	0.4	6
76	Biaxial Residual Stress Mapping in a PWR Dissimilar Metal Weld. , 2013, , .		6
77	A Detailed Evaluation of the Effects of Bulk Residual Stress on Fatigue in Aluminum. Advanced Materials Research, 0, 891-892, 1205-1211.	0.3	6
78	Two-dimensional Mapping of Bulk Residual Stress Using Cut Mouth Opening Displacement. Experimental Mechanics, 2022, 62, 75-86.	1.1	6
79	Analytical and Experimental Study of Fracture in Bend Specimens Subjected to Local Compression. , 0, , 425-425-17.		6
80	Measurement of Welding Residual Stress in Dissimilar Metal Welds Using the Contour Method. , 2011, , .		5
81	Assessment of Weld Residual Stress Measurement Precision: Mock-Up Design and Results for the Contour Method. Journal of Nuclear Engineering and Radiation Science, 2015, 1, .	0.2	5
82	Characterization of Machining Distortion due to Residual Stresses in Quenched Aluminum. , 2017, , .		5
83	Repeatability of Incremental Hole Drilling and Slitting Method Residual Stress Measurements. Conference Proceedings of the Society for Experimental Mechanics, 2014, , 113-118.	0.3	5
84	Concept to analyze residual stresses in milled thin walled monolithic aluminum components and their effect on part distortion. , 2019, , 287-296.		5
85	The Effects of Process Variations on Residual Stress Induced by Laser Peening. Materials Science Forum, 2002, 404-407, 95-100.	0.3	4
86	Biaxial Residual Stress Mapping for a Dissimilar Metal Welded Nozzle. , 2014, , .		4
87	Intermethod Comparison and Evaluation of Near Surface Residual Stress in Aluminum Parts Subject to Various Milling Parameters. Conference Proceedings of the Society for Experimental Mechanics, 2020, , 67-74.	0.3	4
88	Repeatability of Contour Method Residual Stress Measurements for a Range of Materials, Processes, and Geometries. Materials Performance and Characterization, 2018, 7, 427-445.	0.2	4
89	The Role of Residual Stress Measurement in the Development of Laser Peening *. Journal of Neutron Research, 2003, 11, 195-200.	0.4	3
90	Effect of Residual Stress on Crack Growth Specimens Fabricated From Weld Metal. , 2011, , .		3

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91	Generation of Residual Stresses and Improvement of Surface Integrity Characteristics by Laser Shock Processing. Materials Science Forum, 0, 681, 480-485.	0.3	3
92	Hole-Within-a-Hole Method for Determining Residual Stresses. Journal of Engineering Materials and Technology, Transactions of the ASME, 2011, 133, .	0.8	3
93	Study of Residual Stresses in Compact Tension Specimens Fabricated from Weld Metal. Corrosion, 2013, 69, 975-985.	0.5	3
94	Measured Biaxial Residual Stress Maps in a Stainless Steel Weld. Journal of Nuclear Engineering and Radiation Science, 2015, 1, .	0.2	3
95	Phase 2b Weld Residual Stress Round Robin: Mockup Design and Comparisons of Measurement and Simulation Results. , 2015, , .		3
96	Interlaboratory Reproducibility of Contour Method Data Analysis and Residual Stress Calculation. Experimental Mechanics, 2020, 60, 833-845.	1.1	3
97	Interlaboratory Reproducibility of Contour Method Data in a High Strength Aluminum Alloy. Experimental Mechanics, 2022, 62, 1319-1331.	1.1	3
98	Near Surface Residual Stress Measurement Using Slotting. Experimental Mechanics, 2022, 62, 1401-1410.	1.1	3
99	Initial operation of the mercury laser: a gas-cooled 10-Hz Yb:S-FAP system. , 2004, , .		2
100	Assessment of Residual Stress in Fracture Mechanics Coupons. , 2011, , .		2
101	Simulation of Triaxial Residual Stress Mapping for a Hollow Cylinder. , 2012, , .		2
102	Finite Element Modelling of Welded Austenitic Stainless Steel Plate With 8-Passes. , 2014, , .		2
103	Further Comments on Validation Approaches for Weld Residual Stress Simulation. , 2015, , .		2
104	Residual stresses and microstructure within Allvac 718Plus laser powder bed fusion bars. Additive Manufacturing, 2021, 47, 102334.	1.7	2
105	Repeatability of Contour Method Residual Stress Measurements for a Range of Material, Process, and Geometry. Conference Proceedings of the Society for Experimental Mechanics, 2018, , 101-113.	0.3	2
106	Methods for Fatigue Testing Off-Road Bicycle Handlebars Based on Assembly Effects Using Two Different Stem Designs. Journal of Testing and Evaluation, 2003, 31, 116-125.	0.4	2
107	Measurement-driven, model-based estimation of residual stress and its effects on fatigue crack growth. Part 2: Fatigue crack growth testing and modeling. International Journal of Fatigue, 2022, 163, 107044.	2.8	2
108	Measurement-driven, model-based estimation of residual stress and its effects on fatigue crack growth. Part 1: Validation of an eigenstrain model. International Journal of Fatigue, 2022, 163, 107070.	2.8	2

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109	Fatigue of clamped connections with application to a stem-handlebar assembly for off-road bicycles. Fatigue and Fracture of Engineering Materials and Structures, 2002, 25, 941-953.	1.7	1
110	Fatigue Performance of Laser Peened Materials. , 2005, , 203.		1
111	A Validated Numerical Model for Residual Stress Predictions in an Eight-Pass-Welded Stainless Steel Plate. Materials Science Forum, 2014, 777, 46-51.	0.3	1
112	Shakedown Analysis of Post-Weld Residual Stress in a Pressurizer Surge Nozzle Full-Scale Mockup. , 2016, , .		1
113	Assessment of Primary Slice Release Residual Stress Mapping in a Range of Specimen Types. Experimental Mechanics, 2018, 58, 1371-1388.	1.1	1
114	Contour Method Residual Stress Measurement Uncertainty in a Quenched Aluminum Bar and a Stainless Steel Welded Plate. Conference Proceedings of the Society for Experimental Mechanics, 2016, , 303-312.	0.3	1
115	Multi-Axial Contour Method for Mapping Residual Stresses in Continuously Processed Bodies. Experimental Mechanics, 2006, 46, 473.	1.1	1
116	Proof-Test-Based Life Prediction of High-Toughness Pressure Vessels. Journal of Pressure Vessel Technology, Transactions of the ASME, 1996, 118, 86-94.	0.4	1
117	Fatigue Performance of Laser Peened 7050-T7451 Aluminum Alloy. , 2006, , .		1
118	Repeatability of the Contour Method for Residual Stress Measurement. Conference Proceedings of the Society for Experimental Mechanics, 2014, , 103-111.	0.3	1
119	Multi-Technique Residual Stress Measurements to Quantify Stress Relief of 7085-T7452 Aluminum Die Forgings. Materials Performance and Characterization, 2018, 7, 862-885.	0.2	1
120	Assessment of Mechanical Properties and Microstructure Characterizing Techniques in Their Ability to Quantify Amount of Cold Work in 316L Alloy. Journal of Engineering Materials and Technology, Transactions of the ASME, 2020, 142, .	0.8	1
121	Measurement Layout for Residual Stress Mapping Using Slitting. Experimental Mechanics, 2022, 62, 393-402.	1.1	1
122	Model for Predicting Laser Peening Residual Stresses in Arbitrary 3D Bodies. , 2005, , 209.		0
123	Method for Mapping Multi-Axial Residual Stresses in Continuously-Processed Bodies. Materials Science Forum, 2006, 524-525, 543-548.	0.3	0
124	Measurement of Residual Stress in Reactor Nozzle Mock-Ups Containing Dissimilar Metal Welds. , 2014, , .		0
125	Validation Approaches for Weld Residual Stress Simulation. , 2014, , .		0
126	Numerical Analysis of Weld Residual Stress in a Pressurizer Surge Nozzle Full-Scale Mockup: The Effect of Hardening Constitutive Model and Interpass Temperature. , 2015, , .		0

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127	Residual Stress Mapping for an Excavate and Weld Repair Mockup. , 2016, , .		0
128	Oberflächenmorphologie gefräster Aluminiumwerkstücke. ZWF Zeitschrift fuer Wirtschaftlichen Fabrikbetrieb, 2021, 116, 452-455.	0.2	0
129	Measurement of Welding Residual Stress in Reactor Components. , 2011, , .		0
130	Measurements of Residual Stress in Fracture Mechanics Coupons. Conference Proceedings of the Society for Experimental Mechanics, 2011, , 251-257.	0.3	0
131	Fatigue Crack Closure in Residual Stress Bearing Materials. , 2012, , 65-86.		0
132	Fatigue Crack Closure in Residual Stress Bearing Materials. , 2012, , 65-86.		0
133	Simulation of Triaxial Residual Stress Mapping for a Hollow Cylinder. Conference Proceedings of the Society for Experimental Mechanics, 2013, , 429-435.	0.3	0
134	A Novel Approach for Biaxial Residual Stress Mapping Using the Contour and Slitting Methods. Conference Proceedings of the Society for Experimental Mechanics, 2016, , 331-340.	0.3	0
135	Regularization Uncertainty in Slitting Residual Stress Measurement. Conference Proceedings of the Society for Experimental Mechanics, 2020, , 1-7.	0.3	0
136	Evaluation of Residual Stress Corrections to Fracture Toughness Values. , 0, , 340-340-15.		0