

Eann A Patterson

List of Publications by Year in descending order

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112
papers

2,545
citations

201674

27
h-index

233421

45
g-index

115
all docs

115
docs citations

115
times ranked

1449
citing authors

#	ARTICLE	IF	CITATIONS
1	Measuring stress intensity factors during fatigue crack growth using thermoelasticity. <i>Fatigue and Fracture of Engineering Materials and Structures</i> , 2004, 27, 571-583.	3.4	122
2	The stress intensity of mixed mode cracks determined by digital image correlation. <i>Journal of Strain Analysis for Engineering Design</i> , 2008, 43, 769-780.	1.8	111
3	Digital Photoelasticity: Principles, Practice and Potential. <i>Strain</i> , 2002, 38, 27-39.	2.4	94
4	Towards a new model of crack tip stress fields. <i>International Journal of Fracture</i> , 2007, 148, 361-371.	2.2	92
5	Next generation physiologically based kinetic (NG-PBK) models in support of regulatory decision making. <i>Computational Toxicology</i> , 2019, 9, 61-72.	3.3	91
6	Assessment of crack tip plastic zone size and shape and its influence on crack tip shielding. <i>Fatigue and Fracture of Engineering Materials and Structures</i> , 2016, 39, 969-981.	3.4	77
7	Calibration and evaluation of optical systems for full-field strain measurement. <i>Optics and Lasers in Engineering</i> , 2007, 45, 550-564.	3.8	64
8	Shape features and finite element model updating from full-field strain data. <i>International Journal of Solids and Structures</i> , 2011, 48, 1644-1657.	2.7	64
9	Some experimental observations on crack closure and crack tip plasticity. <i>Fatigue and Fracture of Engineering Materials and Structures</i> , 2009, 32, 418-429.	3.4	63
10	Thermoelastic Stress Analysis. <i>Springer Handbooks</i> , 2008, , 743-768.	0.6	55
11	Study of a Crack at a Fastener Hole by Digital Image Correlation. <i>Experimental Mechanics</i> , 2009, 49, 551-559.	2.0	53
12	ON DETERMINING STRESS INTENSITY FACTORS FOR MIXED MODE CRACKS FROM THERMOELASTIC DATA. <i>Fatigue and Fracture of Engineering Materials and Structures</i> , 1997, 20, 217-226.	3.4	50
13	An approach to the validation of computational solid mechanics models for strain analysis. <i>Journal of Strain Analysis for Engineering Design</i> , 2013, 48, 36-47.	1.8	46
14	A framework to establish credibility of computational models in biology. <i>Progress in Biophysics and Molecular Biology</i> , 2017, 129, 13-19.	2.9	46
15	A robust approach to demodulating and unwrapping phase-stepped photoelastic data. <i>Experimental Mechanics</i> , 2005, 45, 278-289.	2.0	45
16	A framework for an integrated nuclear digital environment. <i>Progress in Nuclear Energy</i> , 2016, 87, 97-103.	2.9	39
17	Design and evaluation of the poleidoscope: A novel digital polariscope. <i>Experimental Mechanics</i> , 2004, 44, 128-135.	2.0	37
18	A new photoelastic model for studying fatigue crack closure. <i>Experimental Mechanics</i> , 2005, 45, 42-52.	2.0	36

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19	An experimental study of the behaviour of delaminations in composite panels subjected to bending. <i>Composite Structures</i> , 2015, 123, 9-18.	5.8	36
20	Simulation of errors in automated photoelasticity. <i>Experimental Mechanics</i> , 1998, 38, 132-139.	2.0	35
21	The influence of inter-particle forces on diffusion at the nanoscale. <i>Scientific Reports</i> , 2019, 9, 12689.	3.3	35
22	Automated photoelastic analysis. <i>Strain</i> , 1988, 24, 15-20.	2.4	34
23	A photoelastic study of contact between a cylinder and a half-space. <i>Experimental Mechanics</i> , 1997, 37, 314-323.	2.0	32
24	Synchrotron diffraction investigation of the distribution and influence of residual stresses in fatigue. <i>Fatigue and Fracture of Engineering Materials and Structures</i> , 2004, 27, 609-622.	3.4	32
25	Location and shape measurement using a portable fringe projection system. <i>Experimental Mechanics</i> , 2005, 45, 197-204.	2.0	32
26	A reference material for establishing uncertainties in full-field displacement measurements. <i>Measurement Science and Technology</i> , 2015, 26, 075004.	2.6	32
27	Thermoelastic stress analysis of fatigue cracks subject to overloads. <i>Fatigue and Fracture of Engineering Materials and Structures</i> , 2010, 33, 809-821.	3.4	28
28	A modification to the theory for the load distribution in conventional nuts and bolts. <i>Journal of Strain Analysis for Engineering Design</i> , 1986, 21, 17-23.	1.8	27
29	Evaluation Using Digital Image Correlation of Stress Intensity Factors in an Aerospace Panel. <i>Experimental Mechanics</i> , 2011, 51, 45-57.	2.0	27
30	High Temperature Vibratory Response of Hastelloy-X: Stereo-DIC Measurements and Image Decomposition Analysis. <i>Experimental Mechanics</i> , 2016, 56, 231-243.	2.0	27
31	The use of phase-stepping for the measurement of characteristic parameters in integrated photoelasticity. <i>Experimental Mechanics</i> , 2002, 42, 43-50.	2.0	25
32	Calibration of a Speckle Interferometry Full-Field Strain Measurement System. <i>Strain</i> , 2008, 44, 180-190.	2.4	25
33	Analysis of the effects of cold expansion of holes using thermoelasticity and image correlation. <i>Fatigue and Fracture of Engineering Materials and Structures</i> , 2010, 33, 859-870.	3.4	25
34	The effect of context on student engagement in engineering. <i>European Journal of Engineering Education</i> , 2011, 36, 211-224.	2.3	25
35	Buckling and delamination growth behaviour of delaminated composite panels subject to four-point bending. <i>Composite Structures</i> , 2016, 138, 122-133.	5.8	25
36	Optical analysis of crack tip stress fields: a comparative study. <i>Fatigue and Fracture of Engineering Materials and Structures</i> , 2004, 27, 623-635.	3.4	24

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37	Integrating fringe projection and digital image correlation for high-quality measurements of shape changes. <i>Optical Engineering</i> , 2014, 53, 044106.	1.0	24
38	On crack tip shielding due to plasticity-induced closure during an overload. <i>Fatigue and Fracture of Engineering Materials and Structures</i> , 2010, 33, 766-777.	3.4	23
39	Transition from fractional to classical Stokes-Einstein behaviour in simple fluids. <i>Royal Society Open Science</i> , 2017, 4, 170507.	2.4	23
40	On the Industrial Applications of Moiré and Fringe Projection Techniques. <i>Strain</i> , 2003, 39, 95-100.	2.4	22
41	The role of validation in establishing the scientific credibility of predictive toxicology approaches intended for regulatory application. <i>Computational Toxicology</i> , 2021, 17, 100144.	3.3	22
42	Stress analysis of some nut-bolt connections with modifications to the external shape of the nut. <i>Journal of Strain Analysis for Engineering Design</i> , 1987, 22, 187-193.	1.8	21
43	On the use of stereolithography for the manufacture of photoelastic models. <i>Experimental Mechanics</i> , 2003, 43, 148-162.	2.0	20
44	An Integrated Approach to the Separation of Principal Surface Stresses Using Combined Thermo-Photo-Elasticity. <i>Experimental Mechanics</i> , 2006, 46, 19-29.	2.0	20
45	The use of digital image correlation in a parametric study on the effect of edge distance and thickness on residual strains after hole cold expansion. <i>Journal of Strain Analysis for Engineering Design</i> , 2008, 43, 781-789.	1.8	20
46	Decomposing Strain Maps Using Fourier-Zernike Shape Descriptors. <i>Experimental Mechanics</i> , 2012, 52, 1137-1149.	2.0	19
47	An experimental study on the manufacture and characterization of in-plane fibre-waviness defects in composites. <i>Royal Society Open Science</i> , 2018, 5, 180082.	2.4	19
48	Comparison of Numerical and Experimental Strain Measurements of a Composite Panel Using Image Decomposition. <i>Applied Mechanics and Materials</i> , 0, 70, 63-68.	0.2	16
49	Experimental study of mode shifting in an asymmetrically heated rectangular plate. <i>Journal of Sound and Vibration</i> , 2019, 439, 241-250.	3.9	16
50	The optimisation of the design of nuts with partly tapered threads. <i>Journal of Strain Analysis for Engineering Design</i> , 1986, 21, 77-84.	1.8	15
51	Investigation into the Effect of the Nut Thread Run-Out on the Stress Distribution in a Bolt Using the Finite Element Method. <i>Journal of Mechanical Design, Transactions of the ASME</i> , 2003, 125, 527-532.	2.9	15
52	Tracking nanoparticles in an optical microscope using caustics. <i>Nanotechnology</i> , 2008, 19, 105502.	2.6	15
53	Analysis of displacement fields from a high-speed impact using shape descriptors. <i>Journal of Strain Analysis for Engineering Design</i> , 2014, 49, 212-223.	1.8	15
54	Stress analysis of some nut-bolt connections with modifications to the nut thread form. <i>Journal of Strain Analysis for Engineering Design</i> , 1985, 20, 35-40.	1.8	14

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55	The development of simultaneous thermoelastic and photoelasticity for principal stress analyses. <i>Strain</i> , 1999, 35, 57-65.	2.4	13
56	On the integration of validation, quality assurance and non-destructive evaluation. <i>Journal of Strain Analysis for Engineering Design</i> , 2013, 48, 48-58.	1.8	13
57	A probabilistic metric for the validation of computational models. <i>Royal Society Open Science</i> , 2018, 5, 180687.	2.4	12
58	Towards Automated Tracking of Initiation and Propagation of Cracks in Aluminium Alloy Coupons Using Thermoelastic Stress Analysis. <i>Journal of Nondestructive Evaluation</i> , 2019, 38, 1.	2.4	12
59	Uncertainty Quantification for DIC Displacement Measurements in Industrial Environments. <i>Experimental Techniques</i> , 2021, 45, 685-694.	1.5	12
60	Some applications of combined thermoelastic-photoelastic stress analysis. <i>Journal of Strain Analysis for Engineering Design</i> , 2007, 42, 173-182.	1.8	11
61	Optical Signatures of Small Nanoparticles in a Conventional Microscope. <i>Small</i> , 2008, 4, 1703-1706.	10.0	11
62	Assessment of effective stress intensity factors using thermoelastic stress analysis. <i>Journal of Strain Analysis for Engineering Design</i> , 2009, 44, 621-632.	1.8	11
63	Quantitative measurement of plastic strain field at a fatigue crack tip. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2012, 468, 2399-2415.	2.1	11
64	An evaluation of a protocol for the validation of computational solid mechanics models. <i>Journal of Strain Analysis for Engineering Design</i> , 2016, 51, 5-13.	1.8	11
65	Exploiting measurement-based validation for a high-fidelity model of dynamic indentation of a hyperelastic material. <i>International Journal of Solids and Structures</i> , 2016, 97-98, 520-529.	2.7	10
66	Detecting and Monitoring Cracks in Aerospace Materials Using Post-Processing of TSA and AE Data. <i>Metals</i> , 2019, 9, 748.	2.3	10
67	The application of evolutionary and maximum entropy algorithms to photoelastic spectral analysis. <i>Experimental Mechanics</i> , 1999, 39, 265-273.	2.0	9
68	An experimental study of the contact of a rounded rigid indenter with a soft material block. <i>Journal of Strain Analysis for Engineering Design</i> , 2014, 49, 112-121.	1.8	9
69	Damage assessment of fibre reinforced composites using shape descriptors. <i>Journal of Strain Analysis for Engineering Design</i> , 2012, 47, 244-253.	1.8	8
70	The interaction of fatigue cracks with a residual stress field using thermoelastic stress analysis and synchrotron X-ray diffraction experiments. <i>Royal Society Open Science</i> , 2017, 4, 171100.	2.4	8
71	An integrated digital framework for the design, build and operation of fusion power plants. <i>Royal Society Open Science</i> , 2019, 6, 181847.	2.4	8
72	A Unified Approach to Digital Twin Architecture – Proof-of-Concept Activity in the Nuclear Sector. <i>IEEE Access</i> , 2022, 10, 44691-44709.	4.2	8

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73	The effects of surface topography on the method of caustics. <i>Experimental Mechanics</i> , 1999, 39, 335-342.	2.0	7
74	Construction of Shape Features for the Representation of Full-Field Displacement/Strain Data. <i>Applied Mechanics and Materials</i> , 0, 24-25, 365-370.	0.2	7
75	Effect of Cold Working on Crack Growth from Holes in Fiber Metal Laminates. <i>Experimental Mechanics</i> , 2012, 52, 1033-1045.	2.0	7
76	Deconstructing Engineering Education Programmes: The DEEP Project to reform the mechanical engineering curriculum. <i>European Journal of Engineering Education</i> , 2011, 36, 269-283.	2.3	6
77	A comparison of the effect of riveting and cold expansion on the strain distribution and fatigue performance of fiber metal laminates. <i>Journal of Strain Analysis for Engineering Design</i> , 2014, 49, 141-153.	1.8	6
78	A comparison of split sleeve cold expansion in thick and thin plates. <i>Journal of Strain Analysis for Engineering Design</i> , 2016, 51, 375-386.	1.8	6
79	Using everyday engineering examples to engage learners on a massive open online course. <i>International Journal of Mechanical Engineering Education</i> , 2021, 49, 3-24.	1.0	6
80	Detection and tracking of cracks based on thermoelastic stress analysis. <i>Royal Society Open Science</i> , 2020, 7, 200823.	2.4	6
81	A STUDY OF RESIDUAL CAUSTICS GENERATED FROM FATIGUE CRACKS. <i>Fatigue and Fracture of Engineering Materials and Structures</i> , 1997, 20, 1467-1479.	3.4	5
82	Determining individual stresses thermoelastically. <i>Journal of Strain Analysis for Engineering Design</i> , 2008, 43, 519-527.	1.8	5
83	Embedding Enterprise in Engineering. <i>International Journal of Mechanical Engineering Education</i> , 2009, 37, 263-274.	1.0	5
84	A Novel Experimental Approach for Calculating Stress Intensity Factors from Isochromatic Data. <i>Experimental Mechanics</i> , 2010, 50, 273-281.	2.0	5
85	On the credibility of engineering models and meta-models. <i>Journal of Strain Analysis for Engineering Design</i> , 2015, 50, 218-220.	1.8	5
86	Robust Empirical Predictions of Residual Performance of Damaged Composites with Quantified Uncertainties. <i>Journal of Nondestructive Evaluation</i> , 2017, 36, 1.	2.4	5
87	Dynamic Response of a Thermally Stressed Plate with Reinforced Edges. <i>Experimental Mechanics</i> , 2020, 60, 81-92.	2.0	5
88	Limitations of Nanoparticles Size Characterization by Asymmetric Flow Fieldâ€Fractionation Coupled with Online Dynamic Light Scattering. <i>Chromatographia</i> , 2021, 84, 199-206.	1.3	5
89	Design and Evaluation of the Poleidoscope: A Novel Digital Polariscope. <i>Experimental Mechanics</i> , 2004, 44, 128-135.	2.0	5
90	Settling dynamics of nanoparticles in simple and biological media. <i>Royal Society Open Science</i> , 2021, 8, 210068.	2.4	5

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91	Path dependency in thermoelastic stress analysis. <i>Experimental Mechanics</i> , 2004, 44, 567-573.	2.0	4
92	The use of charge-coupled device cameras for characterizing the mean deflected shape of an aerospace panel during broadband excitation. <i>Journal of Strain Analysis for Engineering Design</i> , 2019, 54, 13-23.	1.8	4
93	Real-time quantification of damage in structural materials during mechanical testing. <i>Royal Society Open Science</i> , 2020, 7, 191407.	2.4	4
94	Validation of a structural model of an aircraft cockpit panel: An industrial case study. <i>Journal of Strain Analysis for Engineering Design</i> , 2022, 57, 714-723.	1.8	4
95	Experimental investigation on surface deformation of soft half plane indented by rigid wedge. <i>Applied Mathematics and Mechanics (English Edition)</i> , 2016, 37, 1349-1360.	3.6	3
96	Observations of fatigue crack behaviour in proton-irradiated 304 stainless steel. <i>Fatigue and Fracture of Engineering Materials and Structures</i> , 2019, 42, 2120-2132.	3.4	3
97	The validation of a full-field deformation analysis of an aircraft panel: A case study. <i>Journal of Strain Analysis for Engineering Design</i> , 2021, 56, 265-272.	1.8	3
98	A Mathematical Model for Perched Block Formation. <i>Journal of Glaciology</i> , 1984, 30, 296-301.	2.2	2
99	A Mathematical Model for Perched Block Formation. <i>Journal of Glaciology</i> , 1984, 30, 296-301.	2.2	2
100	The use of a microdensitometer in photoelastic analyses. <i>Strain</i> , 1985, 21, 13-18.	2.4	2
101	Comparing full-field data from structural components with complicated geometries. <i>Royal Society Open Science</i> , 2021, 8, 210916.	2.4	2
102	On the Use of Stereolithography for the Manufacture of Photoelastic Models. <i>Experimental Mechanics</i> , 2003, 43, 148-161.	2.0	2
103	Characterization of metal fatigue by optical second harmonic generation. <i>Applied Physics Letters</i> , 2017, 111, 131901.	3.3	1
104	Steps towards Industrial Validation Experiments. <i>Proceedings (mdpi)</i> , 2018, 2, 391.	0.2	1
105	On the validation of variable fidelity multi-physics simulations. <i>Journal of Sound and Vibration</i> , 2019, 448, 247-258.	3.9	1
106	A Robust Approach to Demodulating and Unwrapping Phase-stepped Photoelastic Data. <i>Experimental Mechanics</i> , 2005, 45, 278-289.	2.0	1
107	Deformation Data from Thermal Marking. <i>Strain</i> , 2003, 39, 149-152.	2.4	0
108	Transformation of measurement uncertainties into low-dimensional feature vector space. <i>Royal Society Open Science</i> , 2021, 8, 201086.	2.4	0

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109	OS03W0354 Hybrid thermal methods in experimental stress analysis. The Abstracts of ATEM International Conference on Advanced Technology in Experimental Mechanics Asian Conference on Experimental Mechanics, 2003, 2003.2, _OS03W0354-_OS03W0354.	0.0	0
110	OS3(1)-1(OS03W0354) Hybrid Thermal Methods in Experimental Stress Analysis. The Abstracts of ATEM International Conference on Advanced Technology in Experimental Mechanics Asian Conference on Experimental Mechanics, 2003, 2003, 43.	0.0	0
111	PL-1 Raising Standards in Experimental Mechanics?. The Abstracts of ATEM International Conference on Advanced Technology in Experimental Mechanics Asian Conference on Experimental Mechanics, 2007, 2007.6, _PL-1-1_-_PL-1-8_.	0.0	0
112	OS1-1-1 SPOTS standard for calibrating and evaluating strain measurement systems. The Abstracts of ATEM International Conference on Advanced Technology in Experimental Mechanics Asian Conference on Experimental Mechanics, 2007, 2007.6, _OS1-1-1-1-_OS1-1-1-6.	0.0	0