

Fionn P.E. Dunne

List of Publications by Year in descending order

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95
papers

5,135
citations

66315

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88593

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95
docs citations

95
times ranked

1994
citing authors

#	ARTICLE	IF	CITATIONS
1	A dual-scale modelling approach for creep-fatigue crack initiation life prediction of holed structure in a nickel-based superalloy. <i>International Journal of Fatigue</i> , 2022, 154, 106522.	2.8	14
2	Mechanistic fatigue in Ni-based superalloy single crystals: A study of crack paths and growth rates. <i>Journal of the Mechanics and Physics of Solids</i> , 2022, 158, 104663.	2.3	23
3	Twin boundary fatigue crack nucleation in a polycrystalline Nickel superalloy containing non-metallic inclusions. <i>Journal of the Mechanics and Physics of Solids</i> , 2022, 160, 104785.	2.3	15
4	Microstructural Effects on Thermal-Mechanical Alleviation of Cold Dwell Fatigue in Titanium Alloys. <i>Crystals</i> , 2022, 12, 208.	1.0	4
5	Characterisation and modelling of micro- and macroscale creep and strain rate sensitivity in Zircaloy-4. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2022, 840, 142981.	2.6	6
6	A multi-scale approach to microstructure-sensitive thermal fatigue in solder joints. <i>International Journal of Plasticity</i> , 2022, 155, 103308.	4.1	31
7	A crystal plasticity approach to understand fatigue response with respect to pores in additive manufactured aluminium alloys. <i>International Journal of Fatigue</i> , 2022, 161, 106917.	2.8	31
8	Intermetallic size and morphology effects on creep rate of Sn-3Ag-0.5Cu solder. <i>International Journal of Plasticity</i> , 2021, 137, 102904.	4.1	18
9	A mechanistic and stochastic approach to fatigue crack nucleation in coarse grain RR1000 using local stored energy. <i>Fatigue and Fracture of Engineering Materials and Structures</i> , 2021, 44, 505-520.	1.7	8
10	Microstructural fracture mechanics: Stored energy density at fatigue cracks. <i>Journal of the Mechanics and Physics of Solids</i> , 2021, 146, 104209.	2.3	45
11	The mechanistic link between macrozones and dwell fatigue in titanium alloys. <i>International Journal of Fatigue</i> , 2021, 142, 105971.	2.8	30
12	On the origin of microstructural discontinuities in sliding contacts: A discrete dislocation plasticity analysis. <i>International Journal of Plasticity</i> , 2021, 138, 102942.	4.1	20
13	A non-local methodology for geometrically necessary dislocations and application to crack tips. <i>International Journal of Plasticity</i> , 2021, 140, 102970.	4.1	27
14	Slip band interactions and GND latent hardening in a galling resistant stainless steel. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2021, 813, 141176.	2.6	11
15	A three-dimensional mechanistic study of the drivers of classical twin nucleation and variant selection in Mg alloys: A mesoscale modelling and experimental study. <i>International Journal of Plasticity</i> , 2021, 143, 103027.	4.1	26
16	Crystallography and elastic anisotropy in fatigue crack nucleation at nickel alloy twin boundaries. <i>Journal of the Mechanics and Physics of Solids</i> , 2021, 155, 104538.	2.3	19
17	Cold dwell fatigue analyses integrating crystal-level strain rate sensitivity and microstructural heterogeneity. <i>International Journal of Fatigue</i> , 2021, 151, 106398.	2.8	8
18	Hydrogen concentration and hydrides in Zircaloy-4 during cyclic thermomechanical loading. <i>Acta Materialia</i> , 2021, 221, 117368.	3.8	7

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19	On the Origin of Plastic Deformation and Surface Evolution in Nano-Fretting: A Discrete Dislocation Plasticity Analysis. <i>Materials</i> , 2021, 14, 6511.	1.3	6
20	Heterogeneous Internal Strain Evolution in Commercial Purity Titanium Due to Anisotropic Coefficients of Thermal Expansion. <i>Jom</i> , 2020, 72, 39-47.	0.9	13
21	Discrete dislocation, crystal plasticity and experimental studies of fatigue crack nucleation in single-crystal nickel. <i>International Journal of Plasticity</i> , 2020, 126, 102615.	4.1	39
22	The roles of adhesion, internal heat generation and elevated temperatures in normally loaded, sliding rough surfaces. <i>International Journal of Solids and Structures</i> , 2020, 185-186, 14-28.	1.3	4
23	Predicting dwell fatigue life in titanium alloys using modelling and experiment. <i>Nature Communications</i> , 2020, 11, 5868.	5.8	63
24	Effect of twin crystallographic orientation on deformation and growth in Mg alloy AZ31. <i>International Journal of Plasticity</i> , 2020, 135, 102775.	4.1	17
25	Microstructure-interacting short crack growth in blocky alpha Zircaloy-4. <i>International Journal of Plasticity</i> , 2020, 130, 102711.	4.1	18
26	A crystal plasticity investigation of slip system interaction, GND density and stored energy in non-proportional fatigue in Nickel-based superalloy. <i>International Journal of Fatigue</i> , 2020, 139, 105782.	2.8	48
27	Twin nucleation and variant selection in Mg alloys: An integrated crystal plasticity modelling and experimental approach. <i>International Journal of Plasticity</i> , 2020, 135, 102778.	4.1	24
28	Competing mechanisms of particle fracture, decohesion and slip-driven fatigue crack nucleation in a PM nickel superalloy. <i>International Journal of Fatigue</i> , 2020, 135, 105573.	2.8	27
29	Role of geometrically necessary dislocation density in multiaxial and non-proportional fatigue crack nucleation. <i>International Journal of Fatigue</i> , 2020, 135, 105517.	2.8	13
30	Cyclic plasticity and thermomechanical alleviation in titanium alloys. <i>International Journal of Plasticity</i> , 2020, 134, 102753.	4.1	20
31	Micromechanical approaches to understand dwell fatigue: from titanium a-b microstructures to disc thermal alleviation. <i>MATEC Web of Conferences</i> , 2020, 321, 04004.	0.1	0
32	Effects of Grain Size, Orientation, and Source Density on Dislocation Configurational Energy Density. <i>Jom</i> , 2019, 71, 2576-2585.	0.9	1
33	Crystal plasticity analysis of deformation anisotropy of lamellar TiAl alloy: 3D microstructure-based modelling and in-situ micro-compression. <i>International Journal of Plasticity</i> , 2019, 119, 344-360.	4.1	55
34	The dislocation configurational energy density in discrete dislocation plasticity. <i>Journal of the Mechanics and Physics of Solids</i> , 2019, 129, 39-60.	2.3	38
35	Microstructurally-sensitive fatigue crack growth in HCP, BCC and FCC polycrystals. <i>Journal of the Mechanics and Physics of Solids</i> , 2019, 126, 204-225.	2.3	70
36	Multiaxial and non-proportional microstructure-sensitive fatigue crack nucleation. <i>MATEC Web of Conferences</i> , 2019, 300, 01001.	0.1	2

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37	A mechanistic modelling methodology for microstructure-sensitive fatigue crack growth. <i>Journal of the Mechanics and Physics of Solids</i> , 2019, 124, 827-848.	2.3	68
38	Microstructural effects on strain rate and dwell sensitivity in dual-phase titanium alloys. <i>Acta Materialia</i> , 2019, 162, 136-148.	3.8	61
39	Quantitative investigation of micro slip and localization in polycrystalline materials under uniaxial tension. <i>International Journal of Plasticity</i> , 2018, 108, 88-106.	4.1	94
40	Slip transfer across phase boundaries in dual phase titanium alloys and the effect on strain rate sensitivity. <i>International Journal of Plasticity</i> , 2018, 104, 23-38.	4.1	95
41	Is stored energy density the primary meso-scale mechanistic driver for fatigue crack nucleation?. <i>International Journal of Plasticity</i> , 2018, 101, 213-229.	4.1	133
42	Phase morphology, variants and crystallography of alloy microstructures in cold dwell fatigue. <i>International Journal of Fatigue</i> , 2018, 113, 324-334.	2.8	31
43	A microstructure-sensitive driving force for crack growth. <i>Journal of the Mechanics and Physics of Solids</i> , 2018, 121, 147-174.	2.3	66
44	Rapid measurement of volumetric texture using resonant ultrasound spectroscopy. <i>Scripta Materialia</i> , 2018, 157, 44-48.	2.6	10
45	Statistical effects in X-ray diffraction lattice strain measurements of ferritic steel using crystal plasticity. <i>Materials and Design</i> , 2018, 153, 159-165.	3.3	8
46	Understanding thermal alleviation in cold dwell fatigue in titanium alloys. <i>International Journal of Plasticity</i> , 2018, 111, 234-252.	4.1	39
47	Direct volumetric measurement of crystallographic texture using acoustic waves. <i>Acta Materialia</i> , 2018, 159, 384-394.	3.8	12
48	A crystal plasticity assessment of normally-loaded sliding contact in rough surfaces and galling. <i>Journal of the Mechanics and Physics of Solids</i> , 2018, 121, 517-542.	2.3	11
49	A comparative assessment of iron and cobalt-based hard-facing alloy deformation using HR-EBSD and HR-DIC. <i>Acta Materialia</i> , 2018, 159, 173-186.	3.8	44
50	Investigation of slip transfer across HCP grain boundaries with application to cold dwell facet fatigue. <i>Acta Materialia</i> , 2017, 127, 43-53.	3.8	74
51	Toward Predictive Understanding of Fatigue Crack Nucleation in Ni-Based Superalloys. <i>Jom</i> , 2017, 69, 863-871.	0.9	17
52	Microstructurally-sensitive fatigue crack nucleation in Ni-based single and oligo crystals. <i>Journal of the Mechanics and Physics of Solids</i> , 2017, 106, 15-33.	2.3	69
53	The effect of the beta phase on the micromechanical response of dual-phase titanium alloys. <i>International Journal of Fatigue</i> , 2017, 100, 377-387.	2.8	48
54	Microstructural heterogeneity in rate-dependent plasticity of multiphase titanium alloys. <i>Journal of the Mechanics and Physics of Solids</i> , 2017, 103, 199-220.	2.3	52

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55	On cold dwell facet fatigue in titanium alloy aero-engine components. <i>International Journal of Fatigue</i> , 2017, 97, 177-189.	2.8	76
56	Mechanistic basis of temperature-dependent dwell fatigue in titanium alloys. <i>Journal of the Mechanics and Physics of Solids</i> , 2017, 107, 185-203.	2.3	35
57	Crystal plasticity modelling and HR-DIC measurement of slip activation and strain localization in single and oligo-crystal Ni alloys under fatigue. <i>International Journal of Plasticity</i> , 2017, 88, 70-88.	4.1	103
58	A synchrotron X-ray diffraction study of non-proportional strain-path effects. <i>Acta Materialia</i> , 2017, 124, 290-304.	3.8	30
59	Integrated experiment and modelling of microstructurally-sensitive crack growth. <i>International Journal of Fatigue</i> , 2016, 91, 110-123.	2.8	17
60	On the formation of adiabatic shear bands in textured HCP polycrystals. <i>International Journal of Plasticity</i> , 2016, 79, 196-216.	4.1	54
61	Rate sensitivity in discrete dislocation plasticity in hexagonal close-packed crystals. <i>Acta Materialia</i> , 2016, 107, 17-26.	3.8	42
62	Assessment of X-ray diffraction and crystal plasticity lattice strain evolutions under biaxial loading. <i>International Journal of Plasticity</i> , 2016, 83, 1-18.	4.1	28
63	Microstructure-sensitive fatigue crack nucleation in a polycrystalline Ni superalloy. <i>International Journal of Fatigue</i> , 2016, 90, 181-190.	2.8	52
64	Discrete dislocation and crystal plasticity analyses of load shedding in polycrystalline titanium alloys. <i>International Journal of Plasticity</i> , 2016, 87, 15-31.	4.1	61
65	Determination of $\hat{\epsilon}$ and $\hat{\sigma}$ slip properties using micro-pillar test and computational crystal plasticity. <i>Journal of the Mechanics and Physics of Solids</i> , 2016, 95, 393-410.	2.3	96
66	Intrinsic anisotropy of strain rate sensitivity in single crystal alpha titanium. <i>Acta Materialia</i> , 2016, 118, 317-330.	3.8	91
67	Microstructurally sensitive crack nucleation around inclusions in powder metallurgy nickel-based superalloys. <i>Acta Materialia</i> , 2016, 117, 333-344.	3.8	99
68	Dwell fatigue in two Ti alloys: An integrated crystal plasticity and discrete dislocation study. <i>Journal of the Mechanics and Physics of Solids</i> , 2016, 96, 411-427.	2.3	59
69	An HR-EBSD and computational crystal plasticity investigation of microstructural stress distributions and fatigue hotspots in polycrystalline copper. <i>Acta Materialia</i> , 2016, 115, 45-57.	3.8	42
70	Crack nucleation using combined crystal plasticity modelling, high-resolution digital image correlation and high-resolution electron backscatter diffraction in a superalloy containing non-metallic inclusions under fatigue. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2016, 472, 20150792.	1.0	49
71	Local strain rate sensitivity of single $\hat{\epsilon}$ phase within a dual-phase Ti alloy. <i>Acta Materialia</i> , 2016, 107, 298-309.	3.8	85
72	Local deformation mechanisms of two-phase Ti alloy. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2016, 649, 39-47.	2.6	75

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73	Deformation compatibility in a single crystalline Ni superalloy. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2016, 472, 20150690.	1.0	35
74	Prismatic, basal, and $\{11\bar{2}0\}$ slip strengths of commercially pure Zr by micro-cantilever tests. Acta Materialia, 2015, 96, 249-257.	3.8	139
75	A generalized spherical harmonic deconvolution to obtain texture of cubic materials from ultrasonic wave speed. Journal of the Mechanics and Physics of Solids, 2015, 83, 221-242.	2.3	11
76	Strain localization and failure in irradiated zircaloy with crystal plasticity. International Journal of Plasticity, 2015, 71, 170-194.	4.1	50
77	On the mechanistic basis of fatigue crack nucleation in Ni superalloy containing inclusions using high resolution electron backscatter diffraction. Acta Materialia, 2015, 97, 367-379.	3.8	65
78	Slip localization and fatigue crack nucleation near a non-metallic inclusion in polycrystalline nickel-based superalloy. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2015, 641, 328-339.	2.6	72
79	A spherical harmonic approach for the determination of HCP texture from ultrasound: A solution to the inverse problem. Journal of the Mechanics and Physics of Solids, 2015, 83, 179-198.	2.3	9
80	Fatigue crack nucleation: Mechanistic modelling across the length scales. Current Opinion in Solid State and Materials Science, 2014, 18, 170-179.	5.6	68
81	Crystal plasticity and high-resolution electron backscatter diffraction analysis of full-field polycrystal Ni superalloy strains and rotations under thermal loading. Acta Materialia, 2014, 80, 25-38.	3.8	81
82	Strain-gradient modelling of grain size effects on fatigue of CoCr alloy. Acta Materialia, 2014, 78, 341-353.	3.8	66
83	A stored energy criterion for fatigue crack nucleation in polycrystals. International Journal of Fatigue, 2014, 68, 90-102.	2.8	129
84	Lattice strain distributions due to elastic distortions and GND development in polycrystals. Journal of the Mechanics and Physics of Solids, 2014, 67, 62-86.	2.3	8
85	Coupled effects of texture, hardening and non-proportionality of strain on ductility in ferritic steel. Computational Materials Science, 2013, 80, 113-122.	1.4	13
86	The role of elastic anisotropy, length scale and crystallographic slip in fatigue crack nucleation. Journal of the Mechanics and Physics of Solids, 2013, 61, 1224-1240.	2.3	127
87	Texture, hardening and non-proportionality of strain in BCC polycrystal deformation. International Journal of Plasticity, 2013, 50, 170-192.	4.1	33
88	Microstructure-sensitive computational modeling of fatigue crack formation. International Journal of Fatigue, 2010, 32, 1521-1542.	2.8	431
89	GND accumulation in bi-crystal deformation: Crystal plasticity analysis and comparison with experiments. International Journal of Mechanical Sciences, 2009, 51, 326-333.	3.6	30
90	A systematic study of hcp crystal orientation and morphology effects in polycrystal deformation and fatigue. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2007, 463, 1467-1489.	1.0	119

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91	Comparative assessment of dissipated energy and other fatigue criteria. International Journal of Fatigue, 2007, 29, 1990-1995.	2.8	141
92	Lengthscale-dependent, elastically anisotropic, physically-based hcp crystal plasticity: Application to cold-dwell fatigue in Ti alloys. International Journal of Plasticity, 2007, 23, 1061-1083.	4.1	384
93	Experimental and computational studies of low cycle fatigue crack nucleation in a polycrystal. International Journal of Plasticity, 2007, 23, 273-295.	4.1	207
94	Physically-based model for creep in nickel-base superalloy C263 both above and below the gamma solvus. Acta Materialia, 2002, 50, 2917-2931.	3.8	89
95	On the origin of plasticity-induced microstructure change under sliding contacts. Friction, 0, , .	3.4	1