Fionn P.E. Dunne

List of Publications by Year
in descending order

95	5,135	66315	88593
papers	citations	42 h-index	70 g-index

95	95	95	1994
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Microstructure-sensitive computational modeling of fatigue crack formation. International Journal of Fatigue, 2010, 32, 1521-1542.	2.8	431
2	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
3	Experimental and computational studies of low cycle fatigue crack nucleation in a polycrystal. International Journal of Plasticity, 2007, 23, 273-295.	4.1	207
4	Comparative assessment of dissipated energy and other fatigue criteriaâˆ†. International Journal of Fatigue, 2007, 29, 1990-1995.	2.8	141
5	ã€ˆaã€‰ Prismatic, ã€ˆaã€‰ basal, and ã€ˆc+aã€‰ slip strengths of commercially pure Zr by micro-cantilever tests. Acta Materialia, 2015, 96, 249-257.	3.8	139
6	Is stored energy density the primary meso-scale mechanistic driver for fatigue crack nucleation?. International Journal of Plasticity, 2018, 101, 213-229.	4.1	133
7	A stored energy criterion for fatigue crack nucleation in polycrystals. International Journal of Fatigue, 2014, 68, 90-102.	2.8	129
8	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
9	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
10	Crystal plasticity modelling and HR-DIC measurement of slip activation and strain localization in single and oligo-crystal Ni alloys under fatigue. International Journal of Plasticity, 2017, 88, 70-88.	4.1	103
11	Microstructurally sensitive crack nucleation around inclusions in powder metallurgy nickel-based superalloys. Acta Materialia, 2016, 117, 333-344.	3.8	99
12	Determination of Ti-6242 Î± and Î² slip properties using micro-pillar test and computational crystal plasticity. Journal of the Mechanics and Physics of Solids, 2016, 95, 393-410.	2.3	96
13	Slip transfer across phase boundaries in dual phase titanium alloys and the effect on strain rate sensitivity. International Journal of Plasticity, 2018, 104, 23-38.	4.1	95
14	Quantitative investigation of micro slip and localization in polycrystalline materials under uniaxial tension. International Journal of Plasticity, 2018, 108, 88-106.	4.1	94
15	Intrinsic anisotropy of strain rate sensitivity in single crystal alpha titanium. Acta Materialia, 2016, 118, 317-330.	3.8	91
16	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
17	Local strain rate sensitivity of single Î± phase within a dual-phase Ti alloy. Acta Materialia, 2016, 107, 298-309.	3.8	85
18	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

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19	On cold dwell facet fatigue in titanium alloy aero-engine components. International Journal of Fatigue, 2017, 97, 177-189.	2.8	76
20	Local deformation mechanisms of two-phase Ti alloy. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2016, 649, 39-47.	2.6	75
21	Investigation of slip transfer across HCP grain boundaries with application to cold dwell facet fatigue. Acta Materialia, 2017, 127, 43-53.	3.8	74
22	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
23	Microstructurally-sensitive fatigue crack growth in HCP, BCC and FCC polycrystals. Journal of the Mechanics and Physics of Solids, 2019, 126, 204-225.	2.3	70
24	Microstructurally-sensitive fatigue crack nucleation in Ni-based single and oligo crystals. Journal of the Mechanics and Physics of Solids, 2017, 106, 15-33.	2.3	69
25	Fatigue crack nucleation: Mechanistic modelling across the length scales. Current Opinion in Solid State and Materials Science, 2014, 18, 170-179.	5.6	68
26	A mechanistic modelling methodology for microstructure-sensitive fatigue crack growth. Journal of the Mechanics and Physics of Solids, 2019, 124, 827-848.	2.3	68
27	Strain-gradient modelling of grain size effects on fatigue of CoCr alloy. Acta Materialia, 2014, 78, 341-353.	3.8	66
28	A microstructure-sensitive driving force for crack growth. Journal of the Mechanics and Physics of Solids, 2018, 121, 147-174.	2.3	66
29	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
30	Predicting dwell fatigue life in titanium alloys using modelling and experiment. Nature Communications, 2020, 11, 5868.	5.8	63
31	Discrete dislocation and crystal plasticity analyses of load shedding in polycrystalline titanium alloys. International Journal of Plasticity, 2016, 87, 15-31.	4.1	61
32	Microstructural effects on strain rate and dwell sensitivity in dual-phase titanium alloys. Acta Materialia, 2019, 162, 136-148.	3.8	61
33	Dwell fatigue in two Ti alloys: An integrated crystal plasticity and discrete dislocation study. Journal of the Mechanics and Physics of Solids, 2016, 96, 411-427.	2.3	59
34	Crystal plasticity analysis of deformation anisotropy of lamellar TiAl alloy: 3D microstructure-based modelling and in-situ micro-compression. International Journal of Plasticity, 2019, 119, 344-360.	4.1	55
35	On the formation of adiabatic shear bands in textured HCP polycrystals. International Journal of Plasticity, 2016, 79, 196-216.	4.1	54
36	Microstructure-sensitive fatigue crack nucleation in a polycrystalline Ni superalloy. International Journal of Fatigue, 2016, 90, 181-190.	2.8	52

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37	Microstructural heterogeneity in rate-dependent plasticity of multiphase titanium alloys. Journal of the Mechanics and Physics of Solids, 2017, 103, 199-220.	2.3	52
38	Strain localization and failure in irradiated zircaloy with crystal plasticity. International Journal of Plasticity, 2015, 71, 170-194.	4.1	50
39	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. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2016, 472, 20150792.	1.0	49
40	The effect of the beta phase on the micromechanical response of dual-phase titanium alloys. International Journal of Fatigue, 2017, 100, 377-387.	2.8	48
41	A crystal plasticity investigation of slip system interaction, GND density and stored energy in non-proportional fatigue in Nickel-based superalloy. International Journal of Fatigue, 2020, 139, 105782.	2.8	48
42	Microstructural fracture mechanics: Stored energy density at fatigue cracks. Journal of the Mechanics and Physics of Solids, 2021, 146, 104209.	2.3	45
43	A comparative assessment of iron and cobalt-based hard-facing alloy deformation using HR-EBSD and HR-DIC. Acta Materialia, 2018, 159, 173-186.	3.8	44
44	Rate sensitivity in discrete dislocation plasticity in hexagonal close-packed crystals. Acta Materialia, 2016, 107, 17-26.	3.8	42
45	An HR-EBSD and computational crystal plasticity investigation of microstructural stress distributions and fatigue hotspots in polycrystalline copper. Acta Materialia, 2016, 115, 45-57.	3.8	42
46	Understanding thermal alleviation in cold dwell fatigue in titanium alloys. International Journal of Plasticity, 2018, 111, 234-252.	4.1	39
47	Discrete dislocation, crystal plasticity and experimental studies of fatigue crack nucleation in single-crystal nickel. International Journal of Plasticity, 2020, 126, 102615.	4.1	39
48	The dislocation configurational energy density in discrete dislocation plasticity. Journal of the Mechanics and Physics of Solids, 2019, 129, 39-60.	2.3	38
49	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
50	Mechanistic basis of temperature-dependent dwell fatigue in titanium alloys. Journal of the Mechanics and Physics of Solids, 2017, 107, 185-203.	2.3	35
51	Texture, hardening and non-proportionality of strain in BCC polycrystal deformation. International Journal of Plasticity, 2013, 50, 170-192.	4.1	33
52	Phase morphology, variants and crystallography of alloy microstructures in cold dwell fatigue. International Journal of Fatigue, 2018, 113, 324-334.	2.8	31
53	A multi-scale approach to microstructure-sensitive thermal fatigue in solder joints. International Journal of Plasticity, 2022, 155, 103308.	4.1	31
54	A crystal plasticity approach to understand fatigue response with respect to pores in additive manufactured aluminium alloys. International Journal of Fatigue, 2022, 161, 106917.	2.8	31

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55	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
56	A synchrotron X-ray diffraction study of non-proportional strain-path effects. Acta Materialia, 2017, 124, 290-304.	3.8	30
57	The mechanistic link between macrozones and dwell fatigue in titanium alloys. International Journal of Fatigue, 2021, 142, 105971.	2.8	30
58	Assessment of X-ray diffraction and crystal plasticity lattice strain evolutions under biaxial loading. International Journal of Plasticity, 2016, 83, 1-18.	4.1	28
59	Competing mechanisms of particle fracture, decohesion and slip-driven fatigue crack nucleation in a PM nickel superalloy. International Journal of Fatigue, 2020, 135, 105573.	2.8	27
60	A non-local methodology for geometrically necessary dislocations and application to crack tips. International Journal of Plasticity, 2021, 140, 102970.	4.1	27
61	A three-dimensional mechanistic study of the drivers of classical twin nucleation and variant selection in Mg alloys: A mesoscale modelling and experimental study. International Journal of Plasticity, 2021, 143, 103027.	4.1	26
62	Twin nucleation and variant selection in Mg alloys: An integrated crystal plasticity modelling and experimental approach. International Journal of Plasticity, 2020, 135, 102778.	4.1	24
63	Mechanistic fatigue in Ni-based superalloy single crystals: A study of crack paths and growth rates. Journal of the Mechanics and Physics of Solids, 2022, 158, 104663.	2.3	23
64	Cyclic plasticity and thermomechanical alleviation in titanium alloys. International Journal of Plasticity, 2020, 134, 102753.	4.1	20
65	On the origin of microstructural discontinuities in sliding contacts: A discrete dislocation plasticity analysis. International Journal of Plasticity, 2021, 138, 102942.	4.1	20
66	Crystallography and elastic anisotropy in fatigue crack nucleation at nickel alloy twin boundaries. Journal of the Mechanics and Physics of Solids, 2021, 155, 104538.	2.3	19
67	Microstructure-interacting short crack growth in blocky alpha Zircaloy-4. International Journal of Plasticity, 2020, 130, 102711.	4.1	18
68	Intermetallic size and morphology effects on creep rate of Sn-3Ag-0.5Cu solder. International Journal of Plasticity, 2021, 137, 102904.	4.1	18
69	Integrated experiment and modelling of microstructurally-sensitive crack growth. International Journal of Fatigue, 2016, 91, 110-123.	2.8	17
70	Toward Predictive Understanding of Fatigue Crack Nucleation in Ni-Based Superalloys. Jom, 2017, 69, 863-871.	0.9	17
71	Effect of twin crystallographic orientation on deformation and growth in Mg alloy AZ31. International Journal of Plasticity, 2020, 135, 102775.	4.1	17
72	Twin boundary fatigue crack nucleation in a polycrystalline Nickel superalloy containing non-metallic inclusions. Journal of the Mechanics and Physics of Solids, 2022, 160, 104785.	2.3	15

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73	A dual-scale modelling approach for creep-fatigue crack initiation life prediction of holed structure in a nickel-based superalloy. International Journal of Fatigue, 2022, 154, 106522.	2.8	14
74	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
75	Heterogeneous Internal Strain Evolution in Commercial Purity Titanium Due to Anisotropic Coefficients of Thermal Expansion. Jom, 2020, 72, 39-47.	0.9	13
76	Role of geometrically necessary dislocation density in multiaxial and non-proportional fatigue crack nucleation. International Journal of Fatigue, 2020, 135, 105517.	2.8	13
77	Direct volumetric measurement of crystallographic texture using acoustic waves. Acta Materialia, 2018, 159, 384-394.	3.8	12
78	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
79	A crystal plasticity assessment of normally-loaded sliding contact in rough surfaces and galling. Journal of the Mechanics and Physics of Solids, 2018, 121, 517-542.	2.3	11
80	Slip band interactions and GND latent hardening in a galling resistant stainless steel. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2021, 813, 141176.	2.6	11
81	Rapid measurement of volumetric texture using resonant ultrasoundÂspectroscopy. Scripta Materialia, 2018, 157, 44-48.	2.6	10
82	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
83	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
84	Statistical effects in X-ray diffraction lattice strain measurements of ferritic steel using crystal plasticity. Materials and Design, 2018, 153, 159-165.	3.3	8
85	A mechanistic and stochastic approach to fatigue crack nucleation in coarse grain RR1000 using local stored energy. Fatigue and Fracture of Engineering Materials and Structures, 2021, 44, 505-520.	1.7	8
86	Cold dwell fatigue analyses integrating crystal-level strain rate sensitivity and microstructural heterogeneity. International Journal of Fatigue, 2021, 151, 106398.	2.8	8
87	Hydrogen concentration and hydrides in Zircaloy-4 during cyclic thermomechanical loading. Acta Materialia, 2021, 221, 117368.	3.8	7
88	On the Origin of Plastic Deformation and Surface Evolution in Nano-Fretting: A Discrete Dislocation Plasticity Analysis. Materials, 2021, 14, 6511.	1.3	6
89	Characterisation and modelling of micro- and macroscale creep and strain rate sensitivity in Zircaloy-4. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2022, 840, 142981.	2.6	6
90	The roles of adhesion, internal heat generation and elevated temperatures in normally loaded, sliding rough surfaces. International Journal of Solids and Structures, 2020, 185-186, 14-28.	1.3	4

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91	Microstructural Effects on Thermal-Mechanical Alleviation of Cold Dwell Fatigue in Titanium Alloys. Crystals, 2022, 12, 208.	1.0	4
92	Multiaxial and non-proportional microstructure-sensitive fatigue crack nucleation. MATEC Web of Conferences, 2019, 300, 01001.	0.1	2
93	Effects of Grain Size, Orientation, and Source Density on Dislocation Configurational Energy Density. Jom, 2019, 71, 2576-2585.	0.9	1
94	On the origin of plasticity-induced microstructure change under sliding contacts. Friction, 0, , .	3.4	1
95	Micromechanical approaches to understand dwell fatigue: from titanium a-b microstructures to disc thermal alleviation. MATEC Web of Conferences, 2020, 321, 04004.	0.1	0