David Dunstan

List of Publications by Year
in descending order

120 papers	2,930 citations	186209 28 h-index	182361 51 g-index
120 all docs	120 docs citations	120 times ranked	2435 citing authors

#	Article	IF	Citations
1	Easy computation of the Bayes factor to fully quantify Occamâ€™s razor in least-squares fitting and to guide actions. Scientific Reports, 2022, 12, 993.	1.6	7
2	Significant interlayer coupling in bilayer graphene and double-walled carbon nanotubes: A refinement of obtaining strain in low-dimensional materials. Physical Review B, 2022, 105, .	1.1	0
3	Graphene on silicon: Effects of the silicon surface orientation on the work function and carrier density of graphene. Physical Review B, 2022, 105, .	1.1	2
4	Utilising buckling modes for the determination of the anisotropic mechanical properties of As₂S₃ nanosheets. Nanoscale, 2022, 14, 7872-7880.	2.8	2
5	Reply to: On the observation of photo-excitation effects in molecules using muon spin spectroscopy. Nature Materials, 2021, , .	13.3	0
6	Collapse phase diagram of carbon nanotubes with arbitrary number of walls. Collapse modes and macroscopic analog. Carbon, 2021, 178, 552-562.	5.4	12
7	On energetic and dissipative gradient effects within higher-order strain gradient plasticity: Size effect, passivation effect, and Bauschinger effect. International Journal of Plasticity, 2021, 141, 102994.	4.1	15
8	Mechanical properties of graphene. Applied Physics Reviews, 2021, 8, .	5.5	37
9	Softening of the Euler Buckling Criterion under Discretization of Compliance. Physical Review Applied, 2021, 16, .	1.5	0
10	Reversible barocaloric effects over a large temperature span in fullerite C₆₀. Journal of Materials Chemistry A, 2020, 8, 20354-20362.	5.2	32
11	Unexpected softness of bilayer graphene and softening of A-A stacked graphene layers. Physical Review B, 2020, 101, .	1.1	7
12	Nanostrain sensitivity in a wire torsion experiment. Review of Scientific Instruments, 2020, 91, 013901.	0.6	2
13	3D Strain in 2D Materials: To What Extent is Monolayer Graphene Graphite?. Physical Review Letters, 2019, 123, 135501.	2.9	35
14	Spider dragline silk as torsional actuator driven by humidity. Science Advances, 2019, 5, eaau9183.	4.7	108
15	Effect of humidity on the interlayer interaction of bilayer graphene. Physical Review B, 2019, 99, .	1.1	17
16	Critical thickness phenomenon in single-crystalline wires under torsion. Acta Materialia, 2018, 150, 213-223.	3.8	8
17	Factors determining the magnitude of grain-size strengthening in polycrystalline metals. Materialia, 2018, 4, 182-191.	1.3	3
18	Graphite under compression: shift of layer breathing and shear modes frequencies with interlayer spacing. Journal of Physics Communications, 2018, 2, 045004.	0.5	5

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19	Temporal mapping of photochemical reactions and molecular excited states with carbon specificity. Nature Materials, 2017, 16, 467-473.	13.3	16
20	Pressure-induced radial collapse in few-wall carbon nanotubes: A combined theoretical and experimental study. Carbon, 2017, 125, 429-436.	5.4	27
21	Material length scale of strain gradient plasticity: A physical interpretation. International Journal of Plasticity, 2017, 98, 156-174.	4.1	54
22	Peculiar torsion dynamical response of spider dragline silk. Applied Physics Letters, 2017, 111, .	1.5	15
23	The new high field photoexcitation muon spectrometer at the ISIS pulsed neutron and muon source. Review of Scientific Instruments, 2016, 87, 125111.	0.6	11
24	Size and Environment Effect on the Room Temperature Plastic Deformation of Ceramic Nanoparticles. Microscopy and Microanalysis, 2016, 22, 48-49.	0.2	0
25	Validation of a phenomenological strain-gradient plasticity theory. Philosophical Magazine Letters, 2016, 96, 305-312.	0.5	12
26	The Hallâ€“Petch effect as a manifestation of the general size effect. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2016, 472, 20150890.	1.0	102
27	Significance of Bundling Effects on Carbon Nanotubesâ€™ Response to Hydrostatic Compression. Journal of Physical Chemistry C, 2016, 120, 1863-1870.	1.5	3
28	Graphite under uniaxial compression along the<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>c</mml:mi></mml:math>axis: A parameter to relate out-of-plane strain to in-plane phonon frequency. Physical Review B, 2015, 92, .	1.1	9
29	Snails home. Physica Scripta, 2014, 89, 068002.	1.2	10
30	Grain size dependence of the strength of metals: The Hallâ€“Petch effect does not scale as the inverse square root of grain size. International Journal of Plasticity, 2014, 53, 56-65.	4.1	149
31	Resonance Raman spectroscopy of carbon nanotubes: pressure effects on G-mode. High Pressure Research, 2014, 34, 191-197.	0.4	7
32	Nanomechanics of Carbon Nanotubes. Proceedings in Applied Mathematics and Mechanics, 2013, 13, 7-10.	0.2	9
33	The scaling exponent in the size effect of small scale plastic deformation. International Journal of Plasticity, 2013, 40, 152-162.	4.1	98
34	Pressure coefficients of Raman modes of carbon nanotubes resolved by chirality: Environmental effect on graphene sheet. Physical Review B, 2013, 87, .	1.1	19
35	Anomalous Plasticity in the Cyclic Torsion of Micron Scale Metallic Wires. Physical Review Letters, 2013, 110, 244301.	2.9	93
36	Raman excitation spectroscopy of carbon nanotubes: effects of pressure medium and pressure. High Pressure Research, 2012, 32, 67-71.	0.4	5

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37	Yield and plastic flow of soft metals in small volumes loaded in tension and flexure. Philosophical Magazine, 2012, 92, 3199-3215.	0.7	5
38	Critical Thickness Theory Applied to Micromechanical Testing. Advanced Engineering Materials, 2012, 14, 942-947.	1.6	10
39	Observation of the critical thickness phenomenon in dislocation dynamics simulation of microbeam bending. Acta Materialia, 2012, 60, 1603-1609.	3.8	25
40	Size effects in yield and plasticity under uniaxial and non-uniform loading: experiment and theory. Philosophical Magazine, 2011, 91, 1037-1049.	0.7	23
41	Micromechanical testing with microstrain resolution. Review of Scientific Instruments, 2011, 82, 093906.	0.6	12
42	Elastic Limit and Strain Hardening of Thin Wires in Torsion. Physical Review Letters, 2009, 103, 155501.	2.9	94
43	Slip distance model for the indentation size effect at the initiation of plasticity in ceramics and metals. Journal of Materials Research, 2009, 24, 966-972.	1.2	9
44	Gâ€mode behaviour of closed ended single wall carbon nanotubes under pressure. Physica Status Solidi (B): Basic Research, 2009, 246, 491-495.	0.7	5
45	The strength of thin films, small structures and materials under localised stresses. Thin Solid Films, 2009, 517, 3781-3783.	0.8	6
46	High-pressure studies of carbon nanotubes. High Pressure Research, 2009, 29, 548-553.	0.4	8
47	Size effect in the initiation of plasticity for ceramics in nanoindentation. Journal of the Mechanics and Physics of Solids, 2008, 56, 1170-1185.	2.3	83
48	Materials mechanical size effects: a review. Materials Technology, 2008, 23, 193-209.	1.5	107
49	Grain size and sample size interact to determine strength in a soft metal. Philosophical Magazine, 2008, 88, 3043-3050.	0.7	78
50	Derivation of special relativity from Maxwell and Newton. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2008, 366, 1861-1865.	1.6	5
51	Strength of strained quantum wells and other small scale structures. Physica Status Solidi (B): Basic Research, 2007, 244, 93-99.	0.7	0
52	Raman spectroscopy of single-walled carbon nanotubes at high pressure: Effect of interactions between the nanotubes and pressure transmitting media. Physica Status Solidi (B): Basic Research, 2007, 244, 147-150.	0.7	8
53	Reappraisal of experimental values of third-order elastic constants of some cubic semiconductors and metals. Physical Review B, 2006, 73, .	1.1	32
54	Nanoscale pressure effects in individual double-wall carbon nanotubes. Physical Review B, 2006, 73, .	1.1	32

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55	Strength of coherently strained layered superlattices. Philosophical Magazine, 2005, 85, 4429-4444.	0.7	3
56	Effect of coherency strain on the deformation of InxGa1â˜'xAs superlattices under nanoindentation and bending. Philosophical Magazine, 2005, 85, 2469-2490.	0.7	15
57	Effective elastic constants in nonlinear elasticity. Journal of Applied Physics, 2005, 97, 103505.	1.1	10
58	Measurement of the size effect in the yield strength of nickel foils. Philosophical Magazine Letters, 2005, 85, 339-343.	0.5	36
59	A novel high pressure tool: the solvation pressure of liquids. Journal of Physics Condensed Matter, 2004, 16, S1181-S1186.	0.7	1
60	Discontinuous Tangential Stress in Double Wall Carbon Nanotubes. Physical Review Letters, 2004, 93, 095506.	2.9	66
61	Plasticity size effects in nanoindentation. Journal of Materials Research, 2004, 19, 137-142.	1.2	40
62	Enhanced Raman signal of CH3 on carbon nanotubes. Materials Research Society Symposia Proceedings, 2004, 858, 107.	0.1	1
63	Light scattering of double wall carbon nanotubes under hydrostatic pressure: pressure effects on the internal and external tubes. Physica Status Solidi (B): Basic Research, 2004, 241, 3360-3366.	0.7	14
64	Determination of ordering effects on GaInP pressure coefficients. Physica Status Solidi (B): Basic Research, 2004, 241, 3123-3127.	0.7	0
65	Harmonic and anharmonic components of third-order elastic constants. Physical Review B, 2004, 69, .	1.1	1
66	Theory of deformation in small volumes of material. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2004, 460, 2781-2796.	1.0	33
67	Plasticity size effects in nanoindentation. Journal of Materials Research, 2004, 19, 137-142.	1.2	1
68	Reliable non-linear elastic constants. Physica Status Solidi (B): Basic Research, 2003, 235, 396-400.	0.7	9
69	The onset of plasticity in nanoscale contact loading. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2003, 459, 2049-2068.	1.0	25
70	PRACTICAL NON-LINEAR ELASTICITY THEORY FOR LARGE STRAINS. High Pressure Research, 2003, 23, 323-327.	0.4	1
71	NEGATIVE EFFECTIVE PRESSURES IN LIQUID MIXTURES. High Pressure Research, 2003, 23, 205-209.	0.4	7
72	Effective thermodynamic elastic constants under finite deformation. Applied Physics Letters, 2002, 80, 2672-2674.	1.5	13

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73	High Pressure Instrumentation: Low and Negative Pressures. High Pressure Research, 2002, 22, 773-778.	0.4	5
74	Determination of the Mode GrÃ¼neisen Parameter of AlN using different Fits on Experimental High Pressure Data. High Pressure Research, 2002, 22, 37-41.	0.4	1
75	Double subtractive spectrometer as a tunable high-resolution broad-bandpass optical filter. Review of Scientific Instruments, 2002, 73, 3742-3746.	0.6	5
76	A Theory of Non-Linear Elasticity Compatible With the Murnaghan Equation of State. High Pressure Research, 2002, 22, 231-235.	0.4	0
77	Theory of the Anomalous Low Band-Gap Pressure Coefficients of Semiconductor Strained Layers. Physica Status Solidi (B): Basic Research, 2001, 223, 205-211.	0.7	2
78	Zen diamond-anvil low-pressure cell. Review of Scientific Instruments, 2000, 71, 4174.	0.6	9
79	Analysis of high-resolution x-ray diffraction in semiconductor strained layers. Journal of Applied Physics, 1999, 86, 782-790.	1.1	6
80	The role of experimental error in arrhenius plots: Self-diffusion in semiconductors. Solid State Communications, 1998, 107, 159-163.	0.9	13
81	Pressure dependence of the direct band gap in tetrahedral semiconductors. Physical Review B, 1998, 58, 12579-12582.	1.1	32
82	Coherency Strain as an Athermal Strengthening Mechanism. Physical Review Letters, 1997, 78, 3912-3914.	2.9	19
83	Equilibrium critical thickness of epitaxial strained layers in the {111} orientations. Journal of Applied Physics, 1997, 81, 2898-2900.	1.1	22
84	Band offsets in near-GaAs alloys. , 1997, , .		0
85	Strain and strain relaxation in semiconductors. Journal of Materials Science: Materials in Electronics, 1997, 8, 337-375.	1.1	144
86	Electronâ€beamâ€generated carrier distributions in semiconductor multilayer structures. Journal of Microscopy, 1997, 187, 119-124.	0.8	6
87	Plastic relaxation and relaxed buffer layers for semiconductor epitaxy. Advances in Physics, 1996, 45, 87-146.	35.9	185
88	Predictability of plastic relaxation in metamorphicepitaxy. Materials Science and Technology, 1996, 12, 181-186.	0.8	19
89	Coherency Strain and High Strength at High Temperature. Materials Research Society Symposia Proceedings, 1996, 434, 147.	0.1	2
90	Determination of the Linear Pressure Coefficients of Semiconductor Bandgaps. Physica Status Solidi (B): Basic Research, 1996, 198, 57-60.	0.7	13

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91	A General Approach to Measurement of Band Offsets of Nearâ€GaAs Alloys. Physica Status Solidi (B): Basic Research, 1996, 198, 349-353.	0.7	10
92	Diamondâ€anvil uniaxial stress cell. Review of Scientific Instruments, 1996, 67, 489-493.	0.6	9
93	Interpretation of doubleâ€crystal xâ€ray rocking curves in relaxed strainedâ€layer structures. Journal of Applied Physics, 1996, 79, 3011-3015.	1.1	1
94	Relaxation behavior of undoped InxGa1â^'xP 0.5<x<0.7 grown on GaAs by atomic layer molecularâ€beam epitaxy. Journal of Applied Physics, 1996, 80, 3327-3332.	1.1	12
95	Mathematical model for strain relaxation in multilayer metamorphic epitaxial structures. Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties, 1996, 73, 1323-1332.	0.7	21
96	Pressure Induced Shallow-Deep A₁Transition for Sn Donor in GaAs Observed in Diamond Anvil Cell Photoluminescence Experiment. Acta Physica Polonica A, 1995, 87, 457-460.	0.2	1
97	Numerical calculation of equilibrium critical thickness in strained-layer epitaxy. Semiconductor Science and Technology, 1994, 9, 1265-1267.	1.0	17
98	Buckling of compressively strained epitaxial crystal structures. Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties, 1994, 70, 233-246.	0.7	2
99	Interdiffusion in InGaAs/GaAs quantum well structures as a function of depth. Journal of Applied Physics, 1993, 73, 3782-3786.	1.1	77
100	Evidence of Î“-Free or Bound-to-Deep Acceptor Character of the Y-1.2 eV Deep Photoluminescence Line in n-type Ge-doped GaAs Derived from High Hydrostatic Pressure Experiments in Diamond Anvil Cell. Acta Physica Polonica A, 1993, 84, 649-652.	0.2	1
101	Laminated gaskets for absorption and electrical measurements in the diamond anvil cell. Review of Scientific Instruments, 1992, 63, 5760-5763.	0.6	6
102	Geometrical theory of critical thickness and relaxation in strainedâ€layer growth. Journal of Applied Physics, 1991, 70, 3038-3045.	1.1	102
103	Plastic relaxation of InGaAs grown on GaAs. Applied Physics Letters, 1991, 59, 3390-3392.	1.5	97
104	Soldering diamonds into the diamond anvil cell. Review of Scientific Instruments, 1991, 62, 1660-1661.	0.6	3
105	Optical characterization of thermal mixing in quantum wells and heterostructures using a Greenâ€™s function model. Journal of Applied Physics, 1991, 69, 7581-7584.	1.1	18
106	Magneto-optical studies of CdTe/CdMnTe semimagnetic semiconductor superlattices under high pressure. High Pressure Research, 1990, 3, 72-74.	0.4	4
107	CdTe/ZnTe strained layer superlattices under high pressure. High Pressure Research, 1990, 3, 63-65.	0.4	4
108	The pressure dependence of the valence band discontinuity in quantum well structures. High Pressure Research, 1990, 3, 57-59.	0.4	4

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109	Miniature cryogenic diamond anvil cell. High Pressure Research, 1990, 5, 794-796.	0.4	5
110	Theory of the gasket in diamond anvil highâ€pressure cells. Review of Scientific Instruments, 1989, 60, 3789-3795.	0.6	76
111	Effect of High Pressure on the Optical Transmission Spectra of AIIIBIIIC2VI Crystals. Physica Status Solidi (B): Basic Research, 1989, 151, 759-764.	0.7	5
112	The pressure dependence of the photoluminescence intensity in hydrogenated amorphous silicon. Philosophical Magazine Letters, 1989, 59, 37-42.	0.5	5
113	Miniature cryogenic diamondâ€anvil highâ€pressure cell. Review of Scientific Instruments, 1988, 59, 627-630.	0.6	68
114	A determination of the relative bulk moduli of GaInAsP and InP. Philosophical Magazine Letters, 1988, 58, 37-44.	0.5	19
115	Multi-beam time-resolved spectroscopy in a-Si:H. The Philosophical Magazine: Physics of Condensed Matter B, Statistical Mechanics, Electronic, Optical and Magnetic Properties, 1986, 53, 77-86.	0.6	1
116	Kinetics of distant-pair recombination III. Bias illumination and frequency-resolved spectroscopy. The Philosophical Magazine: Physics of Condensed Matter B, Statistical Mechanics, Electronic, Optical and Magnetic Properties, 1985, 52, 111-119.	0.6	22
117	Frequency-resolved spectroscopy and its application to the analysis of recombination in semiconductors. The Philosophical Magazine: Physics of Condensed Matter B, Statistical Mechanics, Electronic, Optical and Magnetic Properties, 1984, 50, 579-597.	0.6	86
118	Kinetics of distant-pair recombination. The Philosophical Magazine: Physics of Condensed Matter B, Statistical Mechanics, Electronic, Optical and Magnetic Properties, 1984, 49, 191-213.	0.6	20
119	New determination of the band structure of disordered AlGaInP and its influence on visible laser characteristics. , 0, , .		0
120	New experimental test of strain-gradient plasticity theory: metal foil sandwich structures in flexure. Philosophical Magazine Letters, 0, , 1-6.	0.5	2