Daryl C Chrzan

List of Publications by Year
in descending order

113	4,265	159585	110387
papers	citations	30 h-index	64 g-index

113	113	113	5175
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Molecular dynamics studies of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mo>âŒ©</mml:mo><mml:mi>a</mml:mi><mml:mo>âŒª -type screw dislocation core structure polymorphism in titanium. Physical Review Materials, 2022, 6, .	3.1	8
2	Orientated Growth of Ultrathin Tellurium by van der Waals Epitaxy. Advanced Materials Interfaces, 2022, 9, .	3.7	7
3	Thermodynamic model for polymorphic dislocation core spreading within hexagonal close packed metals. Physical Review Materials, 2022, 6, .	2.4	3
4	Theory of liquid-mediated strain release in two-dimensional materials. Physical Review Materials, 2022, 6, .	2.4	1
5	Structural heterogeneity in non-crystalline Te_x Se1â^'x thin films. Applied Physics Letters, 2022, 121, 012101.	3.3	1
6	Defect reconfiguration in a Tiâ€“Al alloy via electroplasticity. Nature Materials, 2021, 20, 468-472.	27.5	142
7	Twin nucleation from a single <c+a> dislocation in hexagonal close-packed crystals. Acta Materialia, 2021, 202, 35-41.	7.9	13
8	Asymmetry in deformation. Nature Materials, 2021, 20, 1305-1306.	27.5	0
9	Elimination of oxygen sensitivity in Î±-titanium by substitutional alloying with Al. Nature Communications, 2021, 12, 6158.	12.8	41
10	Shape-controlled single-crystal growth of InP at low temperatures down to 220 Â°C. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 902-906.	7.1	8
11	Mechanistic basis of oxygen sensitivity in titanium. Science Advances, 2020, 6, .	10.3	59
12	Nano-topology optimization for materials design with atom-by-atom control. Nature Communications, 2020, 11, 3745.	12.8	17
13	Imaging Short-range Order and Extracting 3-D Strain Tensor Using Energy-filtered 4D-STEM Techniques. Microscopy and Microanalysis, 2020, 26, 936-938.	0.4	2
14	Understanding the Slip Planarity and Residual Strain Field in Ti-6Al using Nanobeam Electron Diffraction and First Principles Calculations. Microscopy and Microanalysis, 2019, 25, 1892-1893.	0.4	0
15	Gate Quantum Capacitance Effects in Nanoscale Transistors. Nano Letters, 2019, 19, 7130-7137.	9.1	6
16	Helical van der Waals crystals with discretized Eshelby twist. Nature, 2019, 570, 358-362.	27.8	91
17	Spatially Precise Transfer of Patterned Monolayer WS₂ and MoS₂ with Features Larger than 10⁴ Î¼m² Directly from Multilayer Sources. ACS Applied Electronic Materials, 2019, 1, 407-416.	4.3	23
18	Direct imaging of short-range order and its impact on deformation in Ti-6Al. Science Advances, 2019, 5, eaax2799.	10.3	86

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19	Synthetic WSe ₂ monolayers with high photoluminescence quantum yield. Science Advances, 2019, 5, eaau4728.	10.3	78
20	Intrinsic ductility of random substitutional alloys from nonlinear elasticity theory. Physical Review Materials, 2019, 3, .	2.4	9
21	Deterministic Assembly of Arrays of Lithographically Defined WS2 and MoS2 Monolayer Features Directly From Multilayer Sources Into Van Der Waals Heterostructures. Journal of Micro and Nano-Manufacturing, 2019, 7, .	0.7	12
22	Convergence of calculated dislocation core structures in hexagonal close packed titanium. Modelling and Simulation in Materials Science and Engineering, 2018, 26, 014003.	2.0	12
23	Ab initio calculation of thermal expansion with application to understanding Invar behavior in gum metal. Physical Review Materials, 2018, 2, .	2.4	2
24	Theory of thin-film-mediated exfoliation of van der Waals bonded layered materials. Physical Review Materials, 2018, 2, .	2.4	18
25	Strain-induced variant selection in heterogeneous nucleation of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>Î±</mml:mi></mml:math> -Ti at screw dislocations in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>Î²</mml:mi></mml:math> -Ti. Physical Review Materials, 2018, 2, .	2.4	3
26	Dislocations near elastic instability in high-pressure body-centered-cubic magnesium. Physical Review B, 2017, 95, .	3.2	4
27	Nucleation of melting and solidification in confined high aspect ratio thin films. Journal of Applied Physics, 2017, 122, 105304.	2.5	3
28	Measuring the Edge Recombination Velocity of Monolayer Semiconductors. Nano Letters, 2017, 17, 5356-5360.	9.1	19
29	Ideal strength and ductility in metals from second- and third-order elastic constants. Physical Review B, 2017, 96, .	3.2	31
30	Computing elastic anisotropy to discover gum-metal-like structural alloys. Physical Review Materials, 2017, 1, .	2.4	7
31	Lattice softening in body-centered-cubic lithium-magnesium alloys. Physical Review Materials, 2017, 1, .	2.4	0
32	Goldâ€Mediated Exfoliation of Ultralarge Optoelectronicallyâ€Perfect Monolayers. Advanced Materials, 2016, 28, 4053-4058.	21.0	307
33	Compliant substrate epitaxy: Au on <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi>MoS</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:math> Physical Review B, 2016, 93, .	3.2	21
34	Selfâ€Passivation of Defects: Effects of Highâ€Energy Particle Irradiation on the Elastic Modulus of Multilayer Graphene. Advanced Materials, 2015, 27, 6841-6847.	21.0	24
35	Effect of solute atoms on dislocation motion in Mg: An electronic structure perspective. Scientific Reports, 2015, 5, 8793.	3.3	69
36	Origin of dramatic oxygen solute strengthening effect in titanium. Science, 2015, 347, 635-639.	12.6	255

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37	Oriented Growth of Gold Nanowires on MoS₂. Advanced Functional Materials, 2015, 25, 6257-6264.	14.9	21
38	Electrical and Optical Studies of Deep Levels in Nominally Undoped Thallium Bromide. IEEE Transactions on Nuclear Science, 2014, 61, 689-694.	2.0	3
39	Electrodeposition of High-Purity Indium Thin Films and Its Application to Indium Phosphide Solar Cells. Journal of the Electrochemical Society, 2014, 161, D794-D800.	2.9	16
40	Deterministic Nucleation of InP on Metal Foils with the Thin-Film Vaporâ€“Liquidâ€“Solid Growth Mode. Chemistry of Materials, 2014, 26, 1340-1344.	6.7	32
41	Tuning Ideal Tensile Strengths and Intrinsic Ductility of bcc Refractory Alloys. Physical Review Letters, 2014, 112, 115503.	7.8	139
42	Dislocation core radii near elastic stability limits. Physical Review B, 2013, 87, .	3.2	12
43	Self-consistent mean-field theory of size distribution narrowing during ramped temperature ion beam synthesis. Journal of Applied Physics, 2013, 114, 234301.	2.5	1
44	Interfacial free energies determined from binary embedded alloy nanocluster geometry. APL Materials, 2013, 1, 052105.	5.1	0
45	Electronic effects of Se and Pb dopants in TlBr. Applied Physics Letters, 2012, 100, 202102.	3.3	9
46	Embedded Binary Eutectic Alloy Nanostructures. Jom, 2012, 64, 1158-1164.	1.9	4
47	Phonons and phase stability in Ti-V approximants to gum metal. Physical Review B, 2012, 85, .	3.2	15
48	Modeling pulsed-laser melting of embedded semiconductor nanoparticles. Journal of Applied Physics, 2011, 110, 094307.	2.5	2
49	Reversible phase changes in Geâ€“Au nanoparticles. Applied Physics Letters, 2011, 98, 193101.	3.3	7
50	Plasticity in carbon nanotubes: Cooperative conservative dislocation motion. Physical Review B, 2010, 81, .	3.2	18
51	Nanomechanical Testing of Gum Metal. Experimental Mechanics, 2010, 50, 37-45.	2.0	13
52	Spreading of dislocation cores in elastically anisotropic body-centered-cubic materials: The case of gum metal. Physical Review B, 2010, 82, .	3.2	46
53	Nanoscale Structural Engineering via Phase Segregation: Auâˆ’Ge System. Nano Letters, 2010, 10, 393-397.	9.1	23
54	Embedded Binary Eutectic Alloy Nanostructures: A New Class of Phase Change Materials. Nano Letters, 2010, 10, 2794-2798.	9.1	27

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55	Photoluminescence enhancement of Er-doped silica containing Ge nanoclusters. Applied Physics Letters, 2009, 95, .	3.3	6
56	Size-distribution evolution of ion-beam-synthesized nanoclusters in silica. Physical Review B, 2009, 80, .	3.2	11
57	Theory of Nanocluster Size Distributions from Ion Beam Synthesis. Physical Review Letters, 2009, 102, 146101.	7.8	17
58	Processing route for size distribution narrowing of ion beam synthesized nanoclusters. Applied Physics Letters, 2009, 95, 083120.	3.3	6
59	What is the Limit of Nanoparticle Strengthening?. MRS Bulletin, 2009, 34, 173-177.	3.5	11
60	Statistical approach to the unfolding of mechanically stressed biopolymers. Journal of the Mechanical Behavior of Biomedical Materials, 2009, 2, 603-606.	3.1	2
61	Topological description of the Stone-Wales defect formation energy in carbon nanotubes and graphene. Physical Review B, 2009, 79, .	3.2	83
62	Ultrahigh stress and strain in hierarchically structured hollow nanoparticles. Nature Materials, 2008, 7, 947-952.	27.5	193
63	Elasticity theory of topological defects in carbon nanotubes and graphene. Philosophical Magazine Letters, 2008, 88, 159-167.	1.2	8
64	Structure map for embedded binary alloy nanocrystals. Applied Physics Letters, 2008, 93, 193114.	3.3	16
65	Kinetics of visible light photo-oxidation of Ge nanocrystals: Theory and in situ measurement. Applied Physics Letters, 2007, 90, 163118.	3.3	2
66	â€œIdealâ€•Engineering Alloys. Physical Review Letters, 2007, 98, 105503.	7.8	181
67	Large Melting-Point Hysteresis of Ge Nanocrystals Embedded inSiO2. Physical Review Letters, 2006, 97, 155701.	7.8	108
68	Structure and energy of the partial dislocation cores in GaAs. Physica Status Solidi (B): Basic Research, 2006, 243, 2122-2132.	1.5	8
69	Structural properties of Ge nanocrystals embedded in sapphire. Journal of Applied Physics, 2006, 100, 114317.	2.5	22
70	Sub-angstrom imaging of dislocation core structures: how well are experiments comparable with theory?. Philosophical Magazine, 2006, 86, 4575-4588.	1.6	17
71	Ab initiostudy of the ideal shear strength and elastic deformation behaviors of B2FeAlandNiAl. Physical Review B, 2006, 73, .	3.2	20
72	The Structure of Intrinsic Stacking Faults in GaAs. AIP Conference Proceedings, 2005, , .	0.4	0

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73	Distortion and Segregation in a Dislocation Core Region at Atomic Resolution. Physical Review Letters, 2005, 95, 145501.	7.8	50
74	Equilibrium limits of coherency in strained nanowire heterostructures. Journal of Applied Physics, 2005, 97, 114325.	2.5	337
75	MATERIALS SCIENCE: Metallurgy in the Age of Silicon. Science, 2005, 310, 1623-1624.	12.6	8
76	Stable, freestanding Ge nanocrystals. Journal of Applied Physics, 2005, 97, 124316.	2.5	38
77	Characterization and Manipulation of Exposed Ge Nanocrystals. Materials Research Society Symposia Proceedings, 2004, 818, 1.	0.1	6
78	Modeling the Stress Evolution of Ion Beam Synthesized Nanocrystals. Materials Research Society Symposia Proceedings, 2004, 821, 252.	0.1	4
79	Ideal tensile strength ofB2transition-metal aluminides. Physical Review B, 2004, 70, .	3.2	52
80	Self-assembled nanostructures through wavelength-controlled spinodal decomposition. Applied Physics Letters, 2003, 83, 1364-1366.	3.3	6
81	Adatom Transport on Strained Cu(001): Surface Crowdions. Physical Review Letters, 2003, 90, 156102.	7.8	35
82	Structure of Dislocation Cores in GaAs. Materials Research Society Symposia Proceedings, 2003, 779, 321.	0.1	0
83	Connecting atomistic and experimental estimates of ideal strength. Physical Review B, 2002, 65, .	3.2	127
84	Invasion percolation model of co-interpenetrating ceramic-metal composites. Modelling and Simulation in Materials Science and Engineering, 2002, 10, 103-119.	2.0	3
85	Ab initioprediction of the structure of glide set dislocation cores in GaAs. Journal of Physics Condensed Matter, 2002, 14, 12673-12680.	1.8	18
86	Equilibrium Analysis of Lattice-Mismatched Nanowire Heterostructures. Materials Research Society Symposia Proceedings, 2002, 737, 262.	0.1	8
87	The inherent tensile strength of iron. Philosophical Magazine Letters, 2002, 82, 141-147.	1.2	49
88	Structure and Energy of the90Â°Partial Dislocation in Diamond: A CombinedAb Initioand Elasticity Theory Analysis. Physical Review Letters, 2000, 84, 5780-5783.	7.8	75
89	Frank-Read sources within a continuum simulation. Modelling and Simulation in Materials Science and Engineering, 1999, 7, 479-494.	2.0	13
90	Kinetic Monte Carlo simulation of dislocation dynamics. Physical Review B, 1999, 60, 3799-3805.	3.2	23

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91	Is computational materials science overrated?. Materials Today, 1999, 2, 21-23.	14.2	1
92	Self-immobilization of superdislocations in L1₂alloys: A simple statistical analysis. Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties, 1999, 79, 2397-2412.	0.6	5
93	Simulation of Dislocation Dynamics in Ni3Al: A Study of Velocity Autocorrelations. Materials Research Society Symposia Proceedings, 1999, 578, 143.	0.1	0
94	Amplitude Dependent Internal Friction within a Continuum Simulation. Materials Research Society Symposia Proceedings, 1999, 578, 161.	0.1	1
95	Scaling of Misorientation Angle Distributions. Physical Review Letters, 1998, 81, 4664-4667.	7.8	162
96	Continuum analysis of dislocation pile-ups: Influence of sources. Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties, 1998, 77, 1185-1204.	0.6	55
97	Scaling Theory of the Hall-Petch Relation for Multilayers. Physical Review Letters, 1998, 81, 2715-2718.	7.8	104
98	Size Scaling in the Self-Immortalization of Superdislocations in the L12 Compounds Displaying the Yield Strength Anomaly. Materials Research Society Symposia Proceedings, 1998, 552, 1.	0.1	0
99	Nucleation of Islands During Epitaxial Growth: Influence of a Second Species. Materials Research Society Symposia Proceedings, 1998, 528, 25.	0.1	1
100	Pinning-depinning transition in dislocation dynamics. Physical Review B, 1997, 55, 798-811.	3.2	17
101	Transition from Compact to Fractal Islands during Submonolayer Epitaxial Growth. Physical Review Letters, 1995, 74, 4879-4882.	7.8	70
102	Criticality in the plastic deformation ofL12intermetallic compounds. Physical Review B, 1994, 50, 30-42.	3.2	21
103	Dynamics of irreversible island growth during submonolayer epitaxy. Physical Review B, 1994, 50, 6057-6067.	3.2	414
104	Large zero-point fluctuations of the K(110) surface. Physical Review Letters, 1993, 70, 1964-1967.	7.8	11
105	Criticality in the plastic deformation ofNi3Al. Physical Review Letters, 1992, 69, 2795-2798.	7.8	16
106	Phillips and Chrzan reply. Physical Review Letters, 1992, 68, 2855-2855.	7.8	7
107	Electronic and magnetic structure of {111} stacking faults in nickel. Physical Review B, 1991, 43, 9442-9451.	3.2	10
108	Kinetic phase diagram for crystal growth: A (1+1)-dimensional model. Physical Review Letters, 1991, 67, 220-223.	7.8	14

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109	Magnetic structure of {111} stacking faults in nickel. Journal of Applied Physics, 1990, 67, 4558-4560.	2.5	3
110	Theoretical phase stability of incommensurable spin structures on the {001} surfaces of MnO-type antiferromagnetic semiconductors. Physical Review B, 1989, 39, 3159-3167.	3.2	7
111	Exactly soluble model for antiphase boundaries in binary ordering alloys. Physical Review B, 1989, 40, 8194-8202.	3.2	3
112	Phase stability of ternary alloys in the four-sublattice Bragg-Williams approximation. Physical Review B, 1988, 37, 3894-3899.	3.2	6
113	Incommensurable Magnetic Surface Structures for MnO-Type Antiferromagnetic Insulators. Physical Review Letters, 1988, 61, 1509-1511.	7.8	4