

Matthew F Chisholm

List of Publications by Year in descending order

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139
papers

9,588
citations

53751

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37183

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143
all docs

143
docs citations

143
times ranked

13510
citing authors

#	ARTICLE	IF	CITATIONS
1	Determination of rutile transition metal oxide (110) surface terminations by scanning tunneling microscopy contrast reversal. <i>Physical Review B</i> , 2021, 103, .	1.1	0
2	Thermodynamics of order and randomness in dopant distributions inferred from atomically resolved imaging. <i>Npj Computational Materials</i> , 2021, 7, .	3.5	1
3	Investigating phase transitions from local crystallographic analysis based on statistical learning of atomic environments in 2D MoS ₂ -ReS ₂ . <i>Applied Physics Reviews</i> , 2021, 8, 011409.	5.5	7
4	Twin-Domain Formation in Epitaxial Triangular Lattice Delafossites. <i>ACS Applied Materials & Interfaces</i> , 2021, 13, 22059-22064.	4.0	7
5	Strain-Induced Atomic-Scale Building Blocks for Ferromagnetism in Epitaxial LaCoO ₃ . <i>Nano Letters</i> , 2021, 21, 4006-4012.	4.5	15
6	Effective reduction of PdCoO_2 thin films via hydrogenation and sign tunable anomalous Hall effect. <i>Physical Review Materials</i> , 2021, 5, .	0.9	3
7	Atomic structures of interfacial solute gateways to L_{12} precipitates in Al-Cu alloys. <i>Acta Materialia</i> , 2021, 212, 116891.	3.8	18
8	Unraveling Ferroelectric Polarization and Ionic Contributions to Electroresistance in Epitaxial Hf _{0.5} Zr _{0.5} O ₂ Tunnel Junctions. <i>Advanced Electronic Materials</i> , 2020, 6, 1900852.	2.6	44
9	Templated epitaxy of TiO ₂ (B) on a perovskite. <i>Applied Physics Letters</i> , 2020, 117, .	1.5	8
10	Interfacial stabilization for epitaxial CuCrO ₂ delafossites. <i>Scientific Reports</i> , 2020, 10, 11375.	1.6	8
11	Metal-insulator transition tuned by oxygen vacancy migration across TiO ₂ /VO ₂ interface. <i>Scientific Reports</i> , 2020, 10, 18554.	1.6	24
12	Effect of indium alloying on the charge carrier dynamics of thick-shell InP/ZnSe quantum dots. <i>Journal of Chemical Physics</i> , 2020, 152, 161104.	1.2	16
13	Pulsed-laser epitaxy of metallic delafossite PdCrO ₂ films. <i>APL Materials</i> , 2020, 8, .	2.2	25
14	Role of shell composition and morphology in achieving single-emitter photostability for green-emitting InP/ZnSe quantum dots. <i>Journal of Chemical Physics</i> , 2020, 152, 124713.	1.2	20
15	Effects of Surface Terminations of 2D Bi ₂ WO ₆ on Photocatalytic Hydrogen Evolution from Water Splitting. <i>ACS Applied Materials & Interfaces</i> , 2020, 12, 20067-20074.	4.0	78
16	Domain-Matching Epitaxy of Ferroelectric Hf _{0.5} Zr _{0.5} O ₂ (111) on La _{2/3} Sr _{1/3} MnO ₃ (001). <i>Crystal Growth and Design</i> , 2020, 20, 3801-3806.	1.4	60
17	The synergistic role of Mn and Zr/Ti in producing L_{12} co-precipitates in Al-Cu alloys. <i>Acta Materialia</i> , 2020, 194, 577-586.	3.8	71
18	Detection of defects in atomic-resolution images of materials using cycle analysis. <i>Advanced Structural and Chemical Imaging</i> , 2020, 6, .	4.0	11

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19	Protecting the Nanoscale Properties of Ag Nanowires with a Solution-Grown SnO ₂ Monolayer as Corrosion Inhibitor. Journal of the American Chemical Society, 2019, 141, 13977-13986.	6.6	45
20	Spontaneous cationic ordering in chemical-solution-grown La ₂ CoMnO ₆ double perovskite thin films. NPG Asia Materials, 2019, 11, .	3.8	15
21	Engineering Ferroelectric Hf _{0.5} Zr _{0.5} O ₂ Thin Films by Epitaxial Stress. ACS Applied Electronic Materials, 2019, 1, 1449-1457.	2.0	105
22	Intrinsic interfacial van der Waals monolayers and their effect on the high-temperature superconductor FeSe/MoS_2 . Physical Review B, 2019, 100, .	11.1	111
23	Defect-Tailoring Mediated Electron-Hole Separation in Single-Unit Cell Bi ₃ O ₄ Br Nanosheets for Boosting Photocatalytic Hydrogen Evolution and Nitrogen Fixation. Advanced Materials, 2019, 31, e1807576.	11.1	311
24	Direct Cation Exchange in Monolayer MoS_2 via Recombination-Enhanced Migration. Physical Review Letters, 2019, 122, 106101.	11.1	111
25	Rotational polarization nanotopologies in BaTiO ₃ /SrTiO ₃ superlattices. Nanoscale, 2019, 11, 21275-21283.	2.8	21
26	Precipitation of binary quasicrystals along dislocations. Nature Communications, 2018, 9, 809.	5.8	30
27	Spatially controlled doping of two-dimensional SnS ₂ through intercalation for electronics. Nature Nanotechnology, 2018, 13, 294-299.	15.6	269
28	Colossal photon bunching in quasiparticle-mediated nanodiamond cathodoluminescence. Physical Review B, 2018, 97, .	1.1	26
29	Atomically Dispersed Transition Metals on Carbon Nanotubes with Ultrahigh Loading for Selective Electrochemical Carbon Dioxide Reduction. Advanced Materials, 2018, 30, e1706287.	11.1	459
30	Sculpting Nanoscale Functional Channels in Complex Oxides Using Energetic Ions and Electrons. ACS Applied Materials & Interfaces, 2018, 10, 16731-16738.	4.0	7
31	Dislocation-driven growth of two-dimensional lateral quantum-well superlattices. Science Advances, 2018, 4, eaap9096.	4.7	38
32	Rhenium-Doped and Stabilized MoS ₂ Atomic Layers with Basal Plane Catalytic Activity. Advanced Materials, 2018, 30, e1803477.	11.1	164
33	Ambipolar ferromagnetism by electrostatic doping of a manganite. Nature Communications, 2018, 9, 1897.	5.8	51
34	Mono-Atomic Fe Centers in Nitrogen/Carbon Monolayers for Liquid-Phase Selective Oxidation Reaction. ChemCatChem, 2018, 10, 3539-3545.	1.8	14
35	Single-Atom Catalysts: Atomically Dispersed Transition Metals on Carbon Nanotubes with Ultrahigh Loading for Selective Electrochemical Carbon Dioxide Reduction (Adv. Mater. 13/2018). Advanced Materials, 2018, 30, 1870088.	11.1	8
36	Surface Reorganization Leads to Enhanced Photocatalytic Activity in Defective BiOCl. Chemistry of Materials, 2018, 30, 5128-5136.	3.2	55

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37	Control of Polar Orientation and Lattice Strain in Epitaxial BaTiO ₃ Films on Silicon. ACS Applied Materials & Interfaces, 2018, 10, 25529-25535.	4.0	23
38	Dislocation-Driven Growth of Two-Dimensional Lateral Quantum Well Superlattices. Microscopy and Microanalysis, 2018, 24, 88-89.	0.2	0
39	Single-crystal high entropy perovskite oxide epitaxial films. Physical Review Materials, 2018, 2, .	0.9	102
40	Nonequilibrium Synthesis of Highly Porous Single-Crystalline Oxide Nanostructures. Advanced Materials Interfaces, 2017, 4, 1601034.	1.9	6
41	Concurrent Synthesis of High-Performance Monolayer Transition Metal Disulfides. Advanced Functional Materials, 2017, 27, 1605896.	7.8	35
42	Tungsten Diselenide Patterning and Nanoribbon Formation by Gas-Assisted Focused-Helium-Ion-Beam-Induced Etching. Small Methods, 2017, 1, 1600060.	4.6	33
43	Persistent Electrochemical Performance in Epitaxial VO ₂ (B). Nano Letters, 2017, 17, 2229-2233.	4.5	41
44	Controlling Reaction Selectivity through the Surface Termination of Perovskite Catalysts. Angewandte Chemie, 2017, 129, 9952-9956.	1.6	19
45	Controlling Reaction Selectivity through the Surface Termination of Perovskite Catalysts. Angewandte Chemie - International Edition, 2017, 56, 9820-9824.	7.2	47
46	Kinetically Controlled Fabrication of Single-Crystalline TiO ₂ Nanobrush Architectures with High Energy {001} Facets. Advanced Science, 2017, 4, 1700045.	5.6	5
47	Direct observation of solute interstitials and their clusters in Mg alloys. Materials Characterization, 2017, 128, 226-231.	1.9	10
48	New insights on ion track morphology in pyrochlores by aberration corrected scanning transmission electron microscopy. Journal of Materials Research, 2017, 32, 928-935.	1.2	13
49	Formation of Single-atom-thick Copper Oxide Monolayers. Microscopy and Microanalysis, 2017, 23, 1684-1685.	0.2	1
50	Solid-state synthesis of ordered mesoporous carbon catalysts via a mechanochemical assembly through coordination cross-linking. Nature Communications, 2017, 8, 15020.	5.8	164
51	PdSe ₂ : Pentagonal Two-Dimensional Layers with High Air Stability for Electronics. Journal of the American Chemical Society, 2017, 139, 14090-14097.	6.6	509
52	Observing Nanoscale Orbital Angular Momentum in Plasmon Vortices with Cathodoluminescence. Microscopy and Microanalysis, 2017, 23, 1694-1695.	0.2	0
53	Quantum critical behavior in the asymptotic limit of high disorder in the medium entropy alloy NiCoCr _{0.8} . Npj Quantum Materials, 2017, 2, .	1.8	18
54	Unsupported single-atom-thick copper oxide monolayers. 2D Materials, 2017, 4, 011001.	2.0	44

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55	Quantification of Low Voltage Images of 2-dimensional Materials in Aberration Corrected Scanning Transmission Electron Microscopy.. Microscopy and Microanalysis, 2017, 23, 464-465.	0.2	0
56	Exchange of Re and Mo atoms in MoS2 driven by Scanning Transmission Electron Microscopy. Microscopy and Microanalysis, 2017, 23, 1702-1703.	0.2	0
57	Oxide Epitaxy with Large Symmetry Mismatch: Bronze-phase VO2 on SrTiO3. Microscopy and Microanalysis, 2017, 23, 1580-1581.	0.2	1
58	Mapping Giant Oscillator Excitons in Semiconducting Nano Wires. Microscopy and Microanalysis, 2017, 23, 374-375.	0.2	0
59	Magnetic Ordering in Sr3YCo4O10+x. Scientific Reports, 2016, 6, 19762.	1.6	9
60	Nanoscale self-templating for oxide epitaxy with large symmetry mismatch. Scientific Reports, 2016, 6, 38168.	1.6	18
61	Symmetry-Driven Atomic Rearrangement at a Brownmillerite-Perovskite Interface. Advanced Electronic Materials, 2016, 2, 1500201.	2.6	23
62	Effects of Negative-Bias-Temperature-Instability on Low-Frequency Noise in SiGe $\{p\}$ MOSFETs. IEEE Transactions on Device and Materials Reliability, 2016, 16, 541-548.	1.5	16
63	Insights on dramatic radial fluctuations in track formation by energetic ions. Scientific Reports, 2016, 6, 27196.	1.6	14
64	Ultrathin GaN quantum disk nanowire LEDs with sub-250 nm electroluminescence. Nanoscale, 2016, 8, 8024-8032.	2.8	44
65	Functionalization of Graphene. Microscopy and Microanalysis, 2015, 21, 737-738.	0.2	1
66	Fast ion conductivity in strained defect-fluorite structure created by ion tracks in Gd2Ti2O7. Scientific Reports, 2015, 5, 16297.	1.6	33
67	Direct Observation of Plasmonic Enhancement of Emission in Ag-nanoparticle-decorated ZnO nanostructures. Microscopy and Microanalysis, 2015, 21, 2389-2390.	0.2	0
68	Probing Plasmons in Three Dimensions within Random Morphology Nanostructures. Microscopy and Microanalysis, 2015, 21, 1683-1684.	0.2	0
69	Inversion of STEM EELS Data to Obtain Site Occupancy and Near Edge Structure. Microscopy and Microanalysis, 2015, 21, 2251-2252.	0.2	0
70	Pushing the Limits of Cathodoluminescence Signal Detection: Analyzing 2D Materials. Microscopy and Microanalysis, 2015, 21, 2049-2050.	0.2	0
71	Atomic Resolution STEM-EELS Study of Transition Electronic Localization State Induced by Strain. Microscopy and Microanalysis, 2015, 21, 617-618.	0.2	0
72	Synergy of elastic and inelastic energy loss on ion track formation in SrTiO3. Scientific Reports, 2015, 5, 7726.	1.6	98

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73	Total Ionizing Dose Effects on Ge Channel $FETs$ with Raised $Si_{0.55}$ Ge$_{0.45}$ Source/Drain. IEEE Transactions on Nuclear Science, 2015, 62, 2412-2416.	1.2	7
74	The observation of square ice in graphene questioned. Nature, 2015, 528, E1-E2.	13.7	95
75	Ionization-induced annealing of pre-existing defects in silicon carbide. Nature Communications, 2015, 6, 8049.	5.8	116
76	Activation Energies for Oxide- and Interface-Trap Charge Generation Due to Negative-Bias Temperature Stress of Si-Capped SiGe-pMOSFETs. IEEE Transactions on Device and Materials Reliability, 2015, 15, 352-358.	1.5	9
77	An electron microscopy study of dislocation structures in Mg single crystals compressed along [0001] at room temperature. Philosophical Magazine, 2015, 95, 3910-3932.	0.7	61
78	The structure of a_c/a type dislocation loops in magnesium. Philosophical Magazine Letters, 2014, 94, 377-386.	0.5	70
79	Anti-Site Defects in Perovskite YAlO ₃ :Ce Using Aberration-Corrected STEM. Microscopy and Microanalysis, 2014, 20, 132-133.	0.2	2
80	Direct Observation of Atomic Dynamics and Silicon Doping at a Topological Defect in Graphene. Angewandte Chemie - International Edition, 2014, 53, 8908-8912.	7.2	37
81	Two-dimensional metamaterials for epitaxial heterostructures. Current Opinion in Solid State and Materials Science, 2014, 18, 46-52.	5.6	2
82	Crown ethers in graphene. Nature Communications, 2014, 5, 5389.	5.8	142
83	Stabilization of graphene nanopore. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 7522-7526.	3.3	76
84	Tuning High Order Geometric Aberrations in Quadrupole-Octupole Correctors. Microscopy and Microanalysis, 2014, 20, 928-929.	0.2	4
85	Stabilization of Nanopores in Graphene. Microscopy and Microanalysis, 2014, 20, 1732-1733.	0.2	1
86	Reversible redox reactions in an epitaxially stabilized SrCoO _x oxygen sponge. Nature Materials, 2013, 12, 1057-1063.	13.3	349
87	Orienting Oxygen Vacancies for Fast Catalytic Reaction. Advanced Materials, 2013, 25, 6459-6463.	11.1	96
88	Misfit accommodation in oxide thin film heterostructures. Acta Materialia, 2013, 61, 2725-2733.	3.8	42
89	Catalytically active single-atom niobium in graphitic layers. Nature Communications, 2013, 4, 1924.	5.8	261
90	Direct observation of dislocation dissociation and Suzuki segregation in a Mg-Zn-Y alloy by aberration-corrected scanning transmission electron microscopy. Acta Materialia, 2013, 61, 350-359.	3.8	126

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91	Atomic Layer Engineering of Perovskite Oxides for Chemically Sharp Heterointerfaces. <i>Advanced Materials</i> , 2012, 24, 6423-6428.	11.1	49
92	Nanoengineering: Atomic Layer Engineering of Perovskite Oxides for Chemically Sharp Heterointerfaces (<i>Adv. Mater.</i> 48/2012). <i>Advanced Materials</i> , 2012, 24, 6422-6422.	11.1	0
93	Scanning transmission electron microscopy: Albert Crewe's vision and beyond. <i>Ultramicroscopy</i> , 2012, 123, 90-98.	0.8	25
94	Nanoporous Carbon: Topological Defects: Origin of Nanopores and Enhanced Adsorption Performance in Nanoporous Carbon (<i>Small</i> 21/2012). <i>Small</i> , 2012, 8, 3282-3282.	5.2	3
95	Oxidation Resistance of Reactive Atoms in Graphene. <i>Nano Letters</i> , 2012, 12, 4651-4655.	4.5	64
96	Topological Defects: Origin of Nanopores and Enhanced Adsorption Performance in Nanoporous Carbon. <i>Small</i> , 2012, 8, 3283-3288.	5.2	139
97	Atomic-scale processes revealing dynamic twin boundary strengthening mechanisms in face-centered cubic materials. <i>Scripta Materialia</i> , 2012, 67, 911-914.	2.6	4
98	Wide bandgap tunability in complex transition metal oxides by site-specific substitution. <i>Nature Communications</i> , 2012, 3, 689.	5.8	237
99	Role of crystal defects on brittleness of C15 Cr ₂ Nb Laves phase. <i>Acta Materialia</i> , 2012, 60, 2637-2646.	3.8	53
100	The effect of growth parameters on the intrinsic properties of large-area single layer graphene grown by chemical vapor deposition on Cu. <i>Carbon</i> , 2012, 50, 134-141.	5.4	92
101	SUPERNOVA SHOCK-WAVE-INDUCED CO-FORMATION OF GLASSY CARBON AND NANODIAMOND. <i>Astrophysical Journal Letters</i> , 2011, 738, L27.	3.0	42
102	Atomic-Resolution STEM at Low Primary Energies. , 2011, , 615-658.		8
103	Gentle STEM: ADF imaging and EELS at low primary energies. <i>Ultramicroscopy</i> , 2010, 110, 935-945.	0.8	174
104	Atom-by-atom structural and chemical analysis by annular dark-field electron microscopy. <i>Nature</i> , 2010, 464, 571-574.	13.7	1,138
105	Atomic-Scale Compensation Phenomena at Polar Interfaces. <i>Physical Review Letters</i> , 2010, 105, 197602.	2.9	146
106	Atomic-resolution spectroscopic imaging: past, present and future. <i>Journal of Electron Microscopy</i> , 2009, 58, 87-97.	0.9	66
107	Chapter 9 Materials Applications of Aberration-Corrected Scanning Transmission Electron Microscopy. <i>Advances in Imaging and Electron Physics</i> , 2008, , 327-384.	0.1	19
108	Atomic scale investigations of ferroelectricity in perovskite thin films. , 2008, , .		0

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109	Spatial Resolution and Information Transfer in Scanning Transmission Electron Microscopy. <i>Microscopy and Microanalysis</i> , 2008, 14, 36-47.	0.2	27
110	Suppressed Dependence of Polarization on Epitaxial Strain in Highly Polar Ferroelectrics. <i>Physical Review Letters</i> , 2007, 98, 217602.	2.9	146
111	Publisher's Note: Suppressed Dependence of Polarization on Epitaxial Strain in Highly Polar Ferroelectrics [Phys. Rev. Lett.98, 217602 (2007)]. <i>Physical Review Letters</i> , 2007, 98, .	2.9	2
112	Strong polarization enhancement in asymmetric three-component ferroelectric superlattices. <i>Nature</i> , 2005, 433, 395-399.	13.7	627
113	Letter to the Editor: Limitations to the Measurement of Oxygen Concentrations by HRTEM Imposed by Surface Roughness. <i>Microscopy and Microanalysis</i> , 2005, 11, 111-113.	0.2	3
114	Atomic-scale manipulation of potential barriers at SrTiO ₃ grain boundaries. <i>Applied Physics Letters</i> , 2005, 87, 121917.	1.5	25
115	Dislocations in Complex Materials. <i>Science</i> , 2005, 307, 701-703.	6.0	156
116	Low-Temperature Resistance Anomaly at SrTiO ₃ Grain Boundaries: Evidence for an Interface-Induced Phase Transition. <i>Physical Review Letters</i> , 2005, 95, 197601.	2.9	23
117	MATERIALS CHARACTERIZATION IN THE ABERRATION-CORRECTED SCANNING TRANSMISSION ELECTRON MICROSCOPE. <i>Annual Review of Materials Research</i> , 2005, 35, 539-569.	4.3	188
118	Thermal stability of epitaxial SrRuO ₃ films as a function of oxygen pressure. <i>Applied Physics Letters</i> , 2004, 84, 4107-4109.	1.5	71
119	Bismuth-induced embrittlement of copper grain boundaries. <i>Nature Materials</i> , 2004, 3, 621-626.	13.3	242
120	The Electronic Structure of Pristine and Doped (100) Tilt Grain Boundaries in SrTiO ₃ . <i>Journal of Materials Science</i> , 2000, 8, 199-208.	1.2	16
121	Title is missing!. , 2000, 4, 279-287.		11
122	Atomic Structure and Properties of Extended Defects in Silicon. <i>Solid State Phenomena</i> , 1999, 67-68, 3-14.	0.3	13
123	Atomic-scale structure and chemistry of ceramic/metal interfaces ¹ . Atomic structure of {222} MgO/Cu (Ag) interfaces. <i>Acta Materialia</i> , 1999, 47, 3939-3951.	3.8	36
124	A Combined Experimental and Theoretical Approach to Atomic Structure and Segregation at Ceramic Interfaces. <i>Journal of the European Ceramic Society</i> , 1999, 19, 2211-2216.	2.8	9
125	A combined experimental and theoretical approach to grain boundary structure and segregation. <i>Physica B: Condensed Matter</i> , 1999, 273-274, 453-457.	1.3	15
126	Structures of pure and Ca-segregated MgO (001) surfaces. <i>Surface Science</i> , 1999, 442, 251-255.	0.8	11

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127	The atomic origins of reduced critical currents at [001] tilt grain boundaries in YBa ₂ Cu ₃ O _{7-δ} thin films. Physica C: Superconductivity and Its Applications, 1998, 294, 183-193.	0.6	150
128	Vacancy Formation and Vacancy-Induced Structural Transformation in Si Grain Boundaries. Materials Science Forum, 1998, 294-296, 161-164.	0.3	8
129	{001} faults in B2 Fe-40 at.% Al-0.7 at.% C-0.5 at.% B. Philosophical Magazine Letters, 1998, 78, 349-355.	0.5	11
130	Complex Diffusive Processes in Silicon. Defect and Diffusion Forum, 1997, 143-147, 971-978.	0.4	0
131	Z-Contrast Imaging of Grain-Boundary Core Structures in Semiconductors. MRS Bulletin, 1997, 22, 53-57.	1.7	18
132	Observation of structural units at symmetric [001] tilt boundaries in SrTiO ₃ . Journal of Materials Science, 1995, 2, 397.	1.2	70
133	Atomic resolution chemical analysis. Advanced Materials, 1994, 6, 328-331.	11.1	1
134	Correlation between hole depletion and atomic structure at high angle grain boundaries in YBa ₂ Cu ₃ O _{7-δ} . Physica C: Superconductivity and Its Applications, 1993, 212, 185-190.	0.6	99
135	Amorphization and recrystallization of YBa ₂ Cu ₃ O _{7-δ} by ion implantation and annealing. Nuclear Instruments & Methods in Physics Research B, 1993, 79, 641-644.	0.6	3
136	High Resolution Z-Contrast Observation of GaAs/Si Hetero-Interfaces through Scanning Transmission Electron Microscope. Japanese Journal of Applied Physics, 1992, 31, L1788-L1790.	0.8	2
137	Growth and relaxation mechanisms of YBa ₂ Cu ₃ O _{7-δ} films. Physica C: Superconductivity and Its Applications, 1992, 202, 1-11.	0.6	176
138	Growth and microstructure of superconducting YBa ₂ Cu ₃ O _x single crystals. Journal of Crystal Growth, 1987, 85, 593-598.	0.7	219
139	One-Pot Pyrolysis Method to Fabricate Carbon Nanotube Supported Ni Single-Atom Catalysts with Ultrahigh Loading. ACS Applied Energy Materials, 0, , .	2.5	19