Shen J Dillon

List of Publications by Year
in descending order

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118 papers	5,562 citations	109137 35 h-index	82410 72 g-index
120 all docs	120 docs citations	120 times ranked	6894 citing authors

#	Article	IF	Citations
1	3D Printing of Interdigitated Liâ€Ion Microbattery Architectures. Advanced Materials, 2013, 25, 4539-4543.	11.1	1,074
2	Grain boundary complexions. Acta Materialia, 2014, 62, 1-48.	3.8	660
3	Complexion: A new concept for kinetic engineering in materials science. Acta Materialia, 2007, 55, 6208-6218.	3.8	496
4	Relative grain boundary area and energy distributions in nickel. Acta Materialia, 2009, 57, 4304-4311.	3.8	161
5	Multiple grain boundary transitions in ceramics: A case study of alumina. Acta Materialia, 2007, 55, 5247-5254.	3.8	137
6	Mechanically and Chemically Robust Sandwich-Structured C@Si@C Nanotube Array Li-Ion Battery Anodes. ACS Nano, 2015, 9, 1985-1994.	7.3	119
7	Demystifying the role of sintering additives with â€œcomplexionâ€. Journal of the European Ceramic Society, 2008, 28, 1485-1493.	2.8	92
8	Mechanism for the development of anisotropic grain boundary character distributions during normal grain growth. Acta Materialia, 2009, 57, 1-7.	3.8	90
9	Characterization of the Grainâ€Boundary Character and Energy Distributions of Yttria Using Automated Serial Sectioning and EBSD in the FIB. Journal of the American Ceramic Society, 2009, 92, 1580-1585.	1.9	87
10	Grain boundary complexions in ceramics and metals: An overview. Jom, 2009, 61, 38-44.	0.9	85
11	Relating Grainâ€Boundary Complexion to Grainâ€Boundary Kinetics I: Calciaâ€Doped Alumina. Journal of the American Ceramic Society, 2008, 91, 2304-2313.	1.9	80
12	Three dimensional studies of particle failure in silicon based composite electrodes for lithium ion batteries. Journal of Power Sources, 2014, 269, 334-343.	4.0	78
13	Challenges associated with in-situ TEM in environmental systems: The case of silver in aqueous solutions. Ultramicroscopy, 2012, 116, 34-38.	0.8	76
14	Microstructural design considerations for Li-ion battery systems. Current Opinion in Solid State and Materials Science, 2012, 16, 153-162.	5.6	71
15	Growth Kinetics and Morphological Evolution of ZnO Precipitated from Solution. Chemistry of Materials, 2013, 25, 2927-2933.	3.2	70
16	Construction of CdSe polymorphic junctions with coherent interface for enhanced photoelectrocatalytic hydrogen generation. Applied Catalysis B: Environmental, 2021, 282, 119552.	10.8	69
17	Compression-Induced Deformation of Individual Metalâ€“Organic Framework Microcrystals. Journal of the American Chemical Society, 2015, 137, 1750-1753.	6.6	66
18	The Relative Energies of Normally and Abnormally Growing Grain Boundaries in Alumina Displaying Different Complexions. Journal of the American Ceramic Society, 2010, 93, 1796-1802.	1.9	62

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19	In situ electrochemical wet cell transmission electron microscopy characterization of solidâ€“liquid interactions between Ni and aqueous NiCl2. Acta Materialia, 2012, 60, 192-198.	3.8	60
20	Quantitative comparison of sink efficiency of Cuâ€“Nb, Cuâ€“V and Cuâ€“Ni interfaces for point defects. Acta Materialia, 2015, 82, 328-335.	3.8	57
21	The importance of grain boundary complexions in affecting physical properties of polycrystals. Current Opinion in Solid State and Materials Science, 2016, 20, 324-335.	5.6	57
22	Improved Performance in FeF₂ Conversion Cathodes through Use of a Conductive 3D Scaffold and Al₂O₃ ALD Coating. Advanced Functional Materials, 2017, 27, 1702783.	7.8	55
23	Relating Grain Boundary Complexion to Grain Boundary Kinetics II: Silicaâ€Doped Alumina. Journal of the American Ceramic Society, 2008, 91, 2314-2320.	1.9	54
24	In Situ Scanning Electron Microscopy Characterization of the Mechanism for Li Dendrite Growth. Journal of the Electrochemical Society, 2016, 163, A1660-A1665.	1.3	53
25	Intrinsic Grain Boundary Mobility in Alumina. Journal of the American Ceramic Society, 2006, 89, 3885-3887.	1.9	52
26	Mechanical Properties of Molybdenum Disulfide and the Effect of Doping: An in Situ TEM Study. ACS Applied Materials & Interfaces, 2015, 7, 20829-20834.	4.0	50
27	Unimolecular Polypeptide Micelles via Ultrafast Polymerization of N-Carboxyanhydrides. Journal of the American Chemical Society, 2020, 142, 8570-8574.	6.6	49
28	Chemical mixing and self-organization of Nb precipitates in Cu during severe plastic deformation. Acta Materialia, 2014, 62, 276-285.	3.8	48
29	A mechanism for the improved rate capability of cathodes by lithium phosphate surficial films. Electrochemistry Communications, 2011, 13, 200-202.	2.3	43
30	Large-deformation and high-strength amorphous porous carbon nanospheres. Scientific Reports, 2016, 6, 24187.	1.6	42
31	In situ observation of electrolytic H₂ evolution adjacent to gold cathodes. Chemical Communications, 2014, 50, 1761-1763.	2.2	41
32	Effect of porosity on electrochemical and mechanical properties of composite Li-ion anodes. Journal of Composite Materials, 2015, 49, 1849-1862.	1.2	39
33	Mechanism of ?Solid-State? Single-Crystal Conversion in Alumina. Journal of the American Ceramic Society, 2007, 90, 993-995.	1.9	37
34	In Situ Cryogenic Transmission Electron Microscopy for Characterizing the Evolution of Solidifying Water Ice in Colloidal Systems. Microscopy and Microanalysis, 2014, 20, 330-337.	0.2	37
35	Comparative Study of Li and Na Electrochemical Reactions with Iron Oxide Nanowires. Electrochimica Acta, 2014, 118, 143-149.	2.6	37
36	LiMn₂O₄ Surface Chemistry Evolution during Cycling Revealed by in Situ Auger Electron Spectroscopy and X-ray Photoelectron Spectroscopy. ACS Applied Materials & Interfaces, 2017, 9, 33968-33978.	4.0	37

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37	Mechano-Electrochemical Interaction Gives Rise to Strain Relaxation in Sn Electrodes. Journal of the Electrochemical Society, 2016, 163, A3022-A3035.	1.3	36
38	Influence of interface energies on solute partitioning mechanisms in doped aluminas. Acta Materialia, 2010, 58, 5097-5108.	3.8	35
39	Crystallographic Characteristics of Grain Boundaries in Dense Yttria-Stabilized Zirconia. International Journal of Applied Ceramic Technology, 2011, 8, 1218-1228.	1.1	32
40	Electron beam induced deposition of silicon nanostructures from a liquid phase precursor. Nanotechnology, 2012, 23, 385302.	1.3	32
41	Misorientation dependence of Al2O3 grain boundary thermal resistance. Applied Physics Letters, 2013, 102, .	1.5	32
42	Dependence of shear-induced mixing on length scale. Scripta Materialia, 2013, 68, 215-218.	2.6	32
43	Irradiation induced creep in nanocrystalline high entropy alloys. Acta Materialia, 2020, 182, 68-76.	3.8	32
44	In Situ Transmission Electron Microscopy Observation of Silver Oxidation in Ionized/Atomic Gas. Langmuir, 2011, 27, 14201-14206.	1.6	30
45	An experimentally quantifiable solute drag factor. Acta Materialia, 2008, 56, 1374-1379.	3.8	29
46	High temperature irradiation induced creep in Ag nanopillars measured via in situ transmission electron microscopy. Scripta Materialia, 2018, 148, 1-4.	2.6	28
47	Morphological changes in and around Sn electrodes during Li ion cycling characterized by in situ environmental TEM. Scripta Materialia, 2013, 69, 658-661.	2.6	27
48	The Effect of Yttrium on Oxygen Grain-Boundary Transport in Polycrystalline Alumina Measured Using Ni Marker Particles. Journal of the American Ceramic Society, 2008, 91, 2002-2008.	1.9	26
49	Aqueous lithium ion batteries on paper substrates. Journal of Power Sources, 2014, 248, 582-587.	4.0	26
50	Diffusion Controlled Abnormal Grain Growth in Ceramics. Materials Science Forum, 2007, 558-559, 1227-1236.	0.3	25
51	Direct Observation of Multilayer Adsorption on Alumina Grain Boundaries. Journal of the American Ceramic Society, 2007, 90, 996-998.	1.9	24
52	Grain boundary plane distributions in aluminas evolving by normal and abnormal grain growth and displaying different complexions. International Journal of Materials Research, 2010, 101, 50-56.	0.1	24
53	Irradiation-induced creep in metallic nanolaminates characterized by In situ TEM pillar nanocompression. Journal of Nuclear Materials, 2017, 490, 59-65.	1.3	24
54	The role of ceramic and glass science research in meeting societal challenges: Report from an <scp>NSF</scp>â€sponsored workshop. Journal of the American Ceramic Society, 2017, 100, 1777-1803.	1.9	23

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55	In Situ Transmission Electron Microscopy for Ultrahigh Temperature Mechanical Testing of ZrO₂. Nano Letters, 2020, 20, 1041-1046.	4.5	23
56	Forced atomic mixing during severe plastic deformation: Chemical interactions and kinetically driven segregation. Acta Materialia, 2014, 66, 1-11.	3.8	22
57	In situ X-ray photoelectron and Auger electron spectroscopic characterization of reaction mechanisms during Li-ion cycling. Chemical Communications, 2016, 52, 13257-13260.	2.2	22
58	The influence of dopants and complexion transitions on grain boundary fracture in alumina. Acta Materialia, 2018, 142, 121-130.	3.8	22
59	Energetic design of grain boundary networks for toughening of nanocrystalline oxides. Journal of the European Ceramic Society, 2018, 38, 4260-4267.	2.8	22
60	Effect of irradiation damage on the shear strength of Cuâ€“Nb interfaces. Scripta Materialia, 2014, 90-91, 29-32.	2.6	21
61	The Orientation Distributions of Lines, Surfaces, and Interfaces around Threeâ€Phase Boundaries in Solid Oxide Fuel Cell Cathodes. Journal of the American Ceramic Society, 2011, 94, 4045-4051.	1.9	20
62	Integration of microplasma with transmission electron microscopy: Real-time observation of gold sputtering and island formation. Scientific Reports, 2013, 3, 1325.	1.6	20
63	X-ray microtomography characterization of Sn particle evolution during lithiation/delithiation in lithium ion batteries. Journal of Power Sources, 2015, 285, 205-209.	4.0	20
64	Self-organized, size-selection of precipitates during severe plastic deformation of dilute Cu-Nb alloys at low temperatures. Acta Materialia, 2017, 140, 217-223.	3.8	17
65	Insights into Solid-Electrolyte Interphase Induced Li-Ion Degradation from in Situ Auger Electron Spectroscopy. Journal of Physical Chemistry Letters, 2017, 8, 6226-6230.	2.1	17
66	Catalyzed oxidation for nanowire growth. Nanotechnology, 2014, 25, 145603.	1.3	16
67	Probing buckling and post-buckling deformation of hollow amorphous carbon nanospheres: In-situ experiment and theoretical analysis. Carbon, 2018, 137, 411-418.	5.4	16
68	Effects of ternary alloy additions on the microstructure of highly immiscible Cu alloys subjected to severe plastic deformation: AnÂevaluation of the effective temperature model. Acta Materialia, 2019, 170, 218-230.	3.8	16
69	Ultrahigh temperature in situ transmission electron microscopy based bicrystal coble creep in Zirconia II: Interfacial thermodynamics and transport mechanisms. Acta Materialia, 2020, 200, 1008-1021.	3.8	16
70	The influence of Cuâ€“Nb interfaces on local vacancy concentrations in Cu. Scripta Materialia, 2013, 69, 21-24.	2.6	15
71	Property Self-Optimization During Wear of MoS₂. ACS Applied Materials & Interfaces, 2017, 9, 1953-1958.	4.0	15
72	Surface redox on Li[Ni1/3Mn1/3Co1/3]O2 characterized by in situ X-ray photoelectron spectroscopy and in situ Auger electron spectroscopy. Electrochimica Acta, 2018, 277, 197-204.	2.6	15

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73	Ultrahigh temperature in situ transmission electron microscopy based bicrystal coble creep in zirconia I: Nanowire growth and interfacial diffusivity. Acta Materialia, 2020, 199, 530-541.	3.8	15
74	Metallographic Preparation for Electron Backscattered Diffraction. Microscopy and Microanalysis, 2006, 12, 1610-1611.	0.2	14
75	High-strength all-solid lithium ion electrodes based on Li4Ti5O12. Journal of Power Sources, 2011, 196, 6507-6511.	4.0	14
76	Structural evolution of Î±-Fe2O3 nanowires during lithiation and delithiation. Journal of Power Sources, 2014, 245, 308-314.	4.0	14
77	Shear strengths of FCC-FCC cube-on-cube interfaces. Scripta Materialia, 2017, 130, 178-181.	2.6	13
78	In situ X-ray micro-CT characterization of chemo-mechanical relaxations during Sn lithiation. Journal of Power Sources, 2018, 381, 181-189.	4.0	12
79	A pseudo-solid-state cell for multiplatform in situ and operando characterization of Li-ion electrodes. Journal of Power Sources, 2018, 400, 198-203.	4.0	12
80	Microstructural toughening mechanisms in nanostructured Al2O3/GdAlO3 eutectic composite studied using in situ microscale fracture experiments. Journal of the European Ceramic Society, 2020, 40, 3148-3157.	2.8	12
81	The effect of electrochemical cycling on the strength of LiCoO₂. Journal of the American Ceramic Society, 2019, 102, 372-381.	1.9	11
82	Sintering of translucent and single-phase nanostructured scandia-stabilized zirconia. Materials Letters, 2019, 253, 246-249.	1.3	11
83	Effects of Commonly Evolved Solid-Electrolyte-Interphase (SEI) Reaction Product Gases on the Cycle Life of Li-Ion Full Cells. Journal of the Electrochemical Society, 2018, 165, A3084-A3094.	1.3	10
84	Grain boundary curvatures in polycrystalline SrTiO 3 : Dependence on grain size, topology, and crystallography. Journal of the American Ceramic Society, 2019, 102, 7003-7014.	1.9	10
85	Self-organization of Cuâ€“Ag during controlled severe plastic deformation at high temperatures. Journal of Materials Research, 2015, 30, 1943-1956.	1.2	9
86	Unraveling the Role of Grain Boundary Anisotropy in Sintering: Implications for Nanoscale Manufacturing. ACS Applied Nano Materials, 2021, 4, 8039-8049.	2.4	9
87	Interface Stabilized Nanoscale Quasi-Liquid Films. Microscopy Today, 2009, 17, 22-27.	0.2	8
88	Comment on "Effect of Interface Structure on the Microstructural Evolution of Ceramics". Journal of the American Ceramic Society, 2007, 90, 2291-2292.	1.9	7
89	Measuring the Five Parameter Grain Boundary Character Distribution From Three-Dimensional Orientation Maps. Microscopy and Microanalysis, 2008, 14, 978-979.	0.2	7
90	Scaling effects on grain boundary diffusivity; Au in Cu. Acta Materialia, 2013, 61, 1851-1861.	3.8	7

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91	Kinetics and thermodynamics associated with Bi adsorption transitions at Cu and Ni grain boundaries. Journal of Applied Physics, 2013, 113, .	1.1	7
92	Orientation relationship formed during irradiation induced precipitation of W in Cu. Journal of Nuclear Materials, 2014, 454, 126-129.	1.3	7
93	The Oxygen Reduction Reaction Rate of Metallic Nanoparticles during Catalyzed Oxidation. Scientific Reports, 2017, 7, 7017.	1.6	7
94	In-situ microcantilever deflection to evaluate the interfacial fracture properties of binary Al2O3/SmAlO3 eutectic. Journal of the European Ceramic Society, 2019, 39, 3277-3282.	2.8	7
95	Hardening mechanisms in irradiated Cuâ€“W alloys. Journal of Materials Research, 2017, 32, 3156-3164.	1.2	6
96	Measuring size dependent electrical properties from nanoneedle structures: Pt/ZnO Schottky diodes. Applied Physics Letters, 2014, 104, .	1.5	5
97	Interphase boundary, grain boundary, and surface diffusion in Al2O3-GdAlO3 composites determined from bicrystal coble creep experiments. Journal of the European Ceramic Society, 2022, 42, 3976-3985.	2.8	5
98	In-situ EM Characterization of Li-ion Battery through Multiple Cycles. Microscopy and Microanalysis, 2014, 20, 968-969.	0.2	4
99	Local chemo-mechanical insights into the efficacy of ZDDP additives from in situ single asperity growth and mechanical testing. Tribology International, 2017, 112, 103-107.	3.0	4
100	Grain boundary energies in yttriaâ€stabilized zirconia. Journal of the American Ceramic Society, 2022, 105, 2925-2931.	1.9	4
101	Grain Boundary Parting Limit during Dealloying. Advanced Engineering Materials, 2015, 17, 157-161.	1.6	3
102	Nanofibrillar Si Helices for Low-Stress, High-Capacity Li⁺ Anodes with Large Affine Deformations. ACS Applied Materials & Interfaces, 2019, 11, 11715-11721.	4.0	3
103	Grain Boundary and Lattice Fracture Toughness of UO2 Measured Using Small-Scale Mechanics. Jom, 2020, 72, 2075-2081.	0.9	3
104	Size-induced room temperature softening of nanocrystalline yttria stabilized zirconia. Journal of the European Ceramic Society, 2020, 40, 2050-2055.	2.8	3
105	Evidence for a High Temperature Whisker Growth Mechanism Active in Tungsten during In Situ Nanopillar Compression. Nanomaterials, 2021, 11, 2429.	1.9	3
106	Three-Dimensional FIB-OIM of Ceramic Materials. Ceramic Transactions, 0, , 117-124.	0.1	3
107	Cation grainâ€boundary diffusivity in SiO₂â€•and MgOâ€doped Al₂O₃. Journal of the American Ceramic Society, 2017, 100, 5379-5384.	1.9	3
108	Evidence for interface-rate limited densification kinetics at Al2O3-GdAlO3 interfaces characterized by in situ ultrahigh temperature transmission electron microscopy. Journal of the European Ceramic Society, 2022, 42, 5904-5910.	2.8	3

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109	Measuring the Grain Boundary Character and Energy Distributions of Ceramics From Serial Sections of Orientation Maps. Microscopy and Microanalysis, 2009, 15, 608-609.	0.2	2
110	Cr3+ chemical diffusivity in aliovalent doped aluminas. Journal of the European Ceramic Society, 2017, 37, 4025-4032.	2.8	2
111	Variation in zinc dialkyldithiophosphate yield strength measured by nanopillar compression. Tribology International, 2018, 123, 325-328.	3.0	2
112	Lithium lanthanum titanate as an electrolyte for novel lithium ion battery systems. , 2011, , .		1
113	Approximating the Metastable Defect Concentration in Supersaturated Materials: A Case Study of the <scp><scp>SrTiO₃/TiO₂</scp></scp> System. Journal of the American Ceramic Society, 2012, 95, 788-792.	1.9	1
114	Environmental Electron Microscopy: Electron Beam Effects in Electrochemistry. Microscopy and Microanalysis, 2014, 20, 1616-1617.	0.2	1
115	Measuring Interfacial Shear Strength of Cu x Ni-Nb Alloys. Microscopy and Microanalysis, 2016, 22, 1480-1481.	0.2	1
116	Temperature Control in Liquid Cells for TEM. , 0, , 127-139.		1
117	Patternable gel electrolyte infiltrated into all-solid porous Li-ion electrodes. , 2014, , .		0
118	In situ TEM Measurements of Ion Irradiation Induced Creep. Microscopy and Microanalysis, 2019, 25, 1566-1567.	0.2	0