Dunbar P Birnie

List of Publications by Year
in descending order

83 papers	2,881 citations	236925 25 h-index	175258 52 g-index
91 all docs	91 docs citations	91 times ranked	3936 citing authors

#	Article	IF	Citations
1	Topological filtering for 3D microstructure segmentation. Computational Materials Science, 2022, 202, 110920.	3.0	4
2	Thin film absorber selection to pair with silicon for 1-Sun tandem photovoltaics. Solar Energy, 2022, 238, 178-188.	6.1	1
3	Economic trends and comparisons for optimizing grid-outage resilient photovoltaic and battery systems. Applied Energy, 2019, 256, 113892.	10.1	23
4	Economic and resilience benefit analysis of incorporating battery storage to photovoltaic array generation. Renewable Energy, 2019, 135, 652-662.	8.9	36
5	Assessing Tauc Plot Slope Quantification: ZnO Thin Films as a Model System. Physica Status Solidi (B): Basic Research, 2018, 255, 1700393.	1.5	165
6	Analysis of energy capture by vehicle solar roofs in conjunction with workplace plug-in charging. Solar Energy, 2016, 125, 219-226.	6.1	35
7	Evaluation of the Tauc method for optical absorption edge determination: ZnO thin films as a model system (Phys. Status Solidi B 8/2015). Physica Status Solidi (B): Basic Research, 2015, 252, n/a-n/a.	1.5	1
8	Evaluation of the Tauc method for optical absorption edge determination: ZnO thin films as a model system. Physica Status Solidi (B): Basic Research, 2015, 252, 1700-1710.	1.5	795
9	Optical and Electronic Simulation of Silicon/Germanium Tandem Four Terminal Solar Cells. Journal of Solar Energy Engineering, Transactions of the ASME, 2014, 136, .	1.8	5
10	Optimal battery sizing for storm-resilient photovoltaic power island systems. Solar Energy, 2014, 109, 165-173.	6.1	17
11	A Model for Drying Control Cosolvent Selection for Spin-Coating Uniformity: The Thin Film Limit. Langmuir, 2013, 29, 9072-9078.	3.5	48
12	Optical and electronic simulation of gallium arsenide/silicon tandem four terminal solar cells. Solar Energy, 2013, 97, 85-92.	6.1	9
13	Solvothermal Synthesis of Cu₃BiS₃ Enabled by Precursor Complexing. ACS Sustainable Chemistry and Engineering, 2013, 1, 306-308.	6.7	28
14	The importance of silica morphology in silicaâ€“titania composites with dye sensitized solar functionality. Thin Solid Films, 2013, 537, 80-84.	1.8	8
15	Spin Coating: Art and Science. , 2013, , 263-274.		4
16	Neck formation in reactive sintering: A model 2-D experiment. Journal of Materials Research, 2012, 27, 1193-1197.	2.6	1
17	Nearâ€IR Absorbing Solar Cell Sensitized With Bacterial Photosynthetic Membranes. Photochemistry and Photobiology, 2012, 88, 1467-1472.	2.5	26
18	On the structural integrity of the spinel block in the Î²"-alumina structure. Acta Crystallographica Section B: Structural Science, 2012, 68, 118-122.	1.8	19

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19	Self-Assembled TiO₂ with Increased Photoelectron Production, and Improved Conduction and Transfer: Enhancing Photovoltaic Performance of Dye-Sensitized Solar Cells. ACS Applied Materials & Interfaces, 2011, 3, 3002-3010.	8.0	25
20	Enhanced Electron Transport through Template-Derived Pore Channels in Dye-Sensitized Solar Cells. Journal of Physical Chemistry C, 2011, 115, 18342-18347.	3.1	61
21	Improving Microstructured TiO₂ Photoanodes for Dye Sensitized Solar Cells by Simple Surface Treatment. Advanced Energy Materials, 2011, 1, 879-887.	19.5	35
22	Electrical and optical studies of flexible stainless steel mesh electrodes for dye sensitized solar cells. Solar Energy Materials and Solar Cells, 2011, 95, 2120-2125.	6.2	29
23	Laser interferometric calibration for real-time video color interpretation of thin fluid layers during spin coating. Optics and Lasers in Engineering, 2010, 48, 533-537.	3.8	8
24	Broad band optical characterization of solâ€“gel TiO2 thin film microstructure evolution with temperature. Thin Solid Films, 2010, 518, 5467-5470.	1.8	19
25	Emulsion templating to obtain dual-size-scale mesoporous titania coatings. Materials Letters, 2009, 63, 2619-2621.	2.6	12
26	Surface tension evolution during early stages of drying of solâ€“gel coatings. Journal of Sol-Gel Science and Technology, 2009, 49, 233-237.	2.4	15
27	Dyeâ€Sensitized Solar Cells Based on TiO₂ Coatings with Dual Sizeâ€Scale Porosity. Journal of the American Ceramic Society, 2009, 92, 1921-1925.	3.8	24
28	Solar-to-vehicle (S2V) systems for powering commuters of the future. Journal of Power Sources, 2009, 186, 539-542.	7.8	144
29	Clustering effects in solutionâ€based nanoparticle/template hybrid coatings. Journal of the Society for Information Display, 2007, 15, 1089-1093.	2.1	1
30	Templated titania films with meso- and macroporosities. Materials Letters, 2007, 61, 2191-2194.	2.6	24
31	Effect of ramping-up rate on film thickness for spin-on processing. Journal of Materials Science: Materials in Electronics, 2005, 16, 715-720.	2.2	23
32	Surface Skin Development and Rupture During Sol-Gel Spin-Coating. Journal of Sol-Gel Science and Technology, 2004, 31, 225-228.	2.4	10
33	Optical video interpretation of interference colors from thin transparent films on silicon. Materials Letters, 2004, 58, 2795-2800.	2.6	14
34	A Case Study in Striation Prevention by Targeted Formulation Adjustment:Â Aluminum Titanate Solâ˜Gel Coatings. Chemistry of Materials, 2002, 14, 1488-1492.	6.7	23
35	Rational solvent selection strategies to combat striation formation during spin coating of thin films. Journal of Materials Research, 2001, 16, 1145-1154.	2.6	111
36	Nondestructive measurement of striation defect spacing using laser diffraction. Journal of Materials Research, 2001, 16, 3355-3360.	2.6	6

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37	Esterification kinetics in titanium isopropoxide-acetic acid solutions. Journal of Materials Science, 2000, 35, 367-374.	3.7	37
38	<title>Effect of solvent evaporation rate on skin formation during spin coating of complex solutions</title>. , 2000, , .		35
39	and NMR observation of the reaction of acetic acid with titanium isopropoxide. Materials Chemistry and Physics, 1999, 59, 26-35.	4.0	64
40	Combined flow and evaporation of fluid on a spinning disk. Physics of Fluids, 1997, 9, 870-875.	4.0	65
41	Combined flow and evaporation during spin coating of complex solutions. Journal of Non-Crystalline Solids, 1997, 218, 174-178.	3.1	29
42	Crystallization kinetics and the JMAK equation. Journal of Non-Crystalline Solids, 1997, 219, 89-99.	3.1	159
43	Orientational texture due to random anisotropic growth in one dimension. Scripta Materialia, 1996, 35, 361-366.	5.2	2
44	Transformation kinetics of anisotropic particles in thin films. Journal of Non-Crystalline Solids, 1996, 196, 334-338.	3.1	3
45	Avrami exponents for transformations producing anisotropic particles. Journal of Non-Crystalline Solids, 1996, 202, 290-296.	3.1	43
46	Transformation kinetics in oneâ€dimensional processes with continuous nucleation: The effect of shielding. Journal of Chemical Physics, 1996, 105, 5138-5144.	3.0	14
47	Shielding effects in 1-D transformation kinetics. Physica A: Statistical Mechanics and Its Applications, 1996, 223, 337-347.	2.6	10
48	Proton exchange in lithium niobate as an ambipolar diffusion process. Ferroelectrics, 1996, 185, 29-32.	0.6	3
49	Passivation of ferroelectric PZT capacitors using spin-on-glass. Integrated Ferroelectrics, 1995, 6, 121-128.	0.7	3
50	Investigation of surface roughness and hillock formation on platinized substrates used for Pt/PZT/Pt capacitor fabrication. Integrated Ferroelectrics, 1995, 7, 61-73.	0.7	11
51	Effect of RuOx bottom electrode annealing temperature on sol-gel derived PZT capacitors. Integrated Ferroelectrics, 1995, 10, 309-318.	0.7	0
52	Influence of Ti interfacial layers on the electrical and microstructural properties of SOL-gel prepared PZT films. Integrated Ferroelectrics, 1995, 6, 111-119.	0.7	1
53	Infrared observation of evaporative cooling during spin-coating processes. Optical Engineering, 1995, 34, 1782.	1.0	16
54	Transformation kinetics for randomly oriented anisotropic particles. Journal of Non-Crystalline Solids, 1995, 189, 161-166.	3.1	18

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55	Limitations of the uniform effective field approximation due to doping of ferroelectric thinâ€film capacitors. Journal of Applied Physics, 1995, 78, 4766-4775.	2.5	19
56	Kinetics of transformation for anisotropic particles including shielding effects. Journal of Chemical Physics, 1995, 103, 3742-3746.	3.0	58
57	An I-V measurement method and its application for characterizing ferroelectric PZT thin films. Integrated Ferroelectrics, 1994, 4, 31-43.	0.7	6
58	Defectâ€based description of lithium diffusion into lithium niobate. Journal of Applied Physics, 1994, 76, 3422-3428.	2.5	14
59	Twoâ€dimensional model of geometric effects in thin film crystal orientation. Journal of Chemical Physics, 1994, 101, 4229-4235.	3.0	4
60	Evolution of surface relief during firing of PZT thin films. Ferroelectrics, 1994, 152, 67-72.	0.6	8
61	Early-Stage Microstructure Development in Bi-Sr-Ca-Cu-O Glasses. Journal of the American Ceramic Society, 1993, 76, 3087-3092.	3.8	3
62	Solid solution effects in coupled order-disorder ferroelectrics. Ferroelectrics, 1993, 145, 221-234.	0.6	1
63	High-temperature Hf-site-interchange chemistry in LiNbO3 and LiTaO3. Journal of Materials Research, 1993, 8, 1379-1386.	2.6	4
64	Film/substrate/vacuum-chuck interactions during spin-coating. Optical Engineering, 1992, 31, 2012.	1.0	23
65	Effect of multilayer structure and laser pulse width on the reversible cycling of phase change optical storage media. Journal of Applied Physics, 1992, 71, 3680-3687.	2.5	15
66	Total-dose radiation effects on sol-gel derived PZT thin films. IEEE Transactions on Nuclear Science, 1992, 39, 2036-2043.	2.0	47
67	Model for the Ferroelectric Transition in Nonstoichiometric Lithium Niobate and Lithium Tantalate. Journal of the American Ceramic Society, 1991, 74, 988-993.	3.8	32
68	Determination of the lithium Frenkel energy in lithium tantalate. Journal of Applied Physics, 1991, 69, 2485-2488.	2.5	10
69	The limit of non-stoichiometry in silicon carbide. Journal of Materials Science, 1990, 25, 2827-2834.	3.7	17
70	Migration frequencies for complex diffusion paths. Journal of Physics and Chemistry of Solids, 1990, 51, 1313-1321.	4.0	6
71	Materials Challenges in Integrated Optical Recording Heads. MRS Bulletin, 1990, 15, 25-30.	3.5	5
72	The spontaneous polarization as evidence for lithium disordering in LiNbO₃. Journal of Materials Research, 1990, 5, 1933-1939.	2.6	17

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73	Hydrogen Defects And Optical Damage In LiNbO3. Proceedings of SPIE, 1989, , .	0.8	6
74	Criteria for Diffusion by a Site-Interchange Mechanism. Journal of the American Ceramic Society, 1989, 72, 1277-1279.	3.8	3
75	Investigation Of The Nb-Rich Phase Boundary Of LiNbO3. Proceedings of SPIE, 1989, 0968, 73.	0.8	1
76	Cooling rate calculations for silicate glasses. Journal of Geophysical Research, 1986, 91, 509-513.	3.3	19
77	High Resolution TEM and STEM Study of a Quenched MgO-Monticellite Ceramic. Journal of the Ceramic Association Japan, 1986, 94, 906-909.	0.2	0
78	A Model for Silicon Self-Diffusion in Silicon Carbide: Anti-Site Defect Motion. Journal of the American Ceramic Society, 1986, 69, C-33-C-35.	3.8	28
79	Quench media effects on iron partitioning and ordering in a lunar glass. Journal of Non-Crystalline Solids, 1984, 67, 397-412.	3.1	28
80	Coupled pair potential, thermochemical and phase diagram data for transition metal binary systems-VII. Calphad: Computer Coupling of Phase Diagrams and Thermochemistry, 1984, 8, 25-66.	1.6	107
81	Comparison of pair potential and thermochemical models of the heat of formation of BCC and FCC alloys. Calphad: Computer Coupling of Phase Diagrams and Thermochemistry, 1982, 6, 93-126.	1.6	26
82	Calculation of quasibinary and quasiternary oxyntiride systems-IV. Calphad: Computer Coupling of Phase Diagrams and Thermochemistry, 1981, 5, 163-184.	1.6	37
83	Assessing the Limits of Accuracy for the Tauc Method for Optical 3 Band Gap Determination. , 0, , 1-15.		0