

# Geoff L Brennecka

## List of Publications by Year in descending order

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84  
papers

1,611  
citations

304743

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330143

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88  
all docs

88  
docs citations

88  
times ranked

1915  
citing authors

#	ARTICLE	IF	CITATIONS
1	Processing Technologies for High-Permittivity Thin Films in Capacitor Applications. Journal of the American Ceramic Society, 2010, 93, 3935-3954.	3.8	105
2	Current Understanding of Structure-Processing-Property Relationships in BaTiO <sub>3</sub> -Bi(M)O <sub>3</sub> Dielectrics. Journal of the American Ceramic Society, 2016, 99, 2849-2870.	3.8	99
3	Synthesis and Surface Chemistry of 2D TiVC Solid-Solution MXenes. ACS Applied Materials & Interfaces, 2020, 12, 20129-20137.	8.0	93
4	Use of Stress To Produce Highly Oriented Tetragonal Lead Zirconate Titanate (PZT 40/60) Thin Films and Resulting Electrical Properties. Journal of the American Ceramic Society, 2004, 87, 1459-1465.	3.8	62
5	Enhanced Piezoelectric Response of AlN via CrN Alloying. Physical Review Applied, 2018, 9, .	3.8	57
6	Chemically Homogeneous Complex Oxide Thin Films Via Improved Substrate Metallization. Advanced Functional Materials, 2012, 22, 2295-2302.	14.9	53
7	COMBIgor: Data-Analysis Package for Combinatorial Materials Science. ACS Combinatorial Science, 2019, 21, 537-547.	3.8	52
8	Reversibility of the Perovskite-to-Fluorite Phase Transformation in Lead-Based Thin and Ultrathin Films. Advanced Materials, 2008, 20, 1407-1411.	21.0	51
9	Fabrication of Perovskite-Based High-Value Integrated Capacitors by Chemical Solution Deposition. Journal of the American Ceramic Society, 2008, 91, 1851-1857.	3.8	49
10	Tuning the piezoelectric and mechanical properties of the AlN system via alloying with YN and BN. Journal of Applied Physics, 2017, 122, .	2.5	49
11	Implications of heterostructural alloying for enhanced piezoelectric performance of (Al,Sc)N. Physical Review Materials, 2018, 2, .	2.4	47
12	Utilizing Site Disorder in the Development of New Energy-Relevant Semiconductors. ACS Energy Letters, 2020, 5, 2027-2041.	17.4	46
13	Synthesis of LaWN <sub>3</sub> nitride perovskite with polar symmetry. Science, 2021, 374, 1488-1491.	12.6	43
14	Fabrication of ultrathin film capacitors by chemical solution deposition. Journal of Materials Research, 2007, 22, 2868-2874.	2.6	39
15	Electrical conductivity in oxygen-deficient phases of tantalum pentoxide from first-principles calculations. Journal of Applied Physics, 2013, 114, .	2.5	36
16	Reduced coercive field in epitaxial thin film of ferroelectric wurtzite Al <sub>0.7</sub> Sc <sub>0.3</sub> N. Applied Physics Letters, 2021, 118, .	3.3	35
17	Lanthanide series doping effects in lead zirconate titanate (PLnZT) thin films. Journal of Materials Research, 2002, 17, 871-878.	2.6	33
18	Dielectric properties of BaTiO <sub>3</sub> -Bi(Zn <sub>1/2</sub> Ti <sub>1/2</sub> )O <sub>3</sub> -NaNbO <sub>3</sub> solid solutions. Journal of Materials Science, 2013, 48, 2245-2250.	3.7	30

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19	Neutron irradiation effects on domain wall mobility and reversibility in lead zirconate titanate thin films. <i>Journal of Applied Physics</i> , 2013, 113, 124104.	2.5	29
20	Quantifying Compositional Homogeneity in $\text{Pb}(\text{Zr}, \text{Ti})\text{O}_3$ Using Atom Probe Tomography. <i>Journal of the American Ceramic Society</i> , 2014, 97, 2677-2697.		
21	Quantitative X-Ray Spectrum Imaging of Lead Lanthanum Zirconate Titanate PLZT Thin Films. <i>Journal of the American Ceramic Society</i> , 2008, 91, 3690-3697.	3.8	28
22	Thermal transport in tantalum oxide films for memristive applications. <i>Applied Physics Letters</i> , 2015, 107, .	3.3	25
23	High-Temperature Ferroelectric Behavior of $\text{Al}_{0.7}\text{Sc}_{0.3}\text{N}$ . <i>Micromachines</i> , 2022, 13, 887.	2.9	24
24	Defect mechanisms in high resistivity $\text{BaTiO}_3\text{-Bi}(\text{Zn}_{1/2}\text{Ti}_{1/2})\text{O}_3$ ceramics. <i>Applied Physics Letters</i> , 2012, 101, .	3.3	23
25	Multilayer thin and ultrathin film capacitors fabricated by chemical solution deposition. <i>Journal of Materials Research</i> , 2008, 23, 176-181.	2.6	22
26	Characterization of Elastic Modulus Across the $(\text{Al}_{1-x}\text{Sc}_x)\text{N}$ System Using DFT and Substrate-Effect-Corrected Nanoindentation. <i>IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control</i> , 2018, 65, 2167-2175.	3.0	22
27	Phase Transformations in the High-Temperature Form of Pure and $\text{TiO}_2$ -Stabilized $\text{Ta}_2\text{O}_5$ . <i>Journal of the American Ceramic Society</i> , 2007, 90, 2947-2953.	3.8	20
28	Phase and texture evolution in solution deposited lead zirconate titanate thin films: Formation and role of the $\text{Pt}_3\text{Pb}$ intermetallic phase. <i>Journal of Applied Physics</i> , 2013, 113, .	2.5	20
29	Understanding Reproducibility of Sputter-Deposited Metastable Ferroelectric Wurtzite $\text{Al}_{0.6}\text{Sc}_{0.4}\text{N}$ Films Using In Situ Optical Emission Spectrometry. <i>Physica Status Solidi - Rapid Research Letters</i> , 2021, 15, 2100043.	2.4	20
30	Large piezoelectric response of van der Waals layered solids. <i>Journal of Materials Chemistry C</i> , 2018, 6, 11035-11044.	5.5	19
31	Effect of domain structure on dielectric nonlinearity in epitaxial $\text{BiFeO}_3$ films. <i>Applied Physics Letters</i> , 2010, 97, 262904.	3.3	18
32	Phase formation of $\text{BaTiO}_3\text{-Bi}(\text{Zn}_{1/2}\text{Ti}_{1/2})\text{O}_3$ perovskite ceramics. <i>Journal of the Ceramic Society of Japan</i> , 2014, 122, 260-266.		18
33	Crystallographic changes in lead zirconate titanate due to neutron irradiation. <i>AIP Advances</i> , 2014, 4, .	1.3	16
34	Combined Experimental and Computational Methods Reveal the Evolution of Buried Interfaces during Synthesis of Ferroelectric Thin Films. <i>Advanced Materials Interfaces</i> , 2015, 2, 1500181.	3.7	16
35	Highly Textured $\text{BaTiO}_3$ via Templated Grain Growth and Resulting Polarization Reversal Dynamics. <i>Journal of the American Ceramic Society</i> , 2016, 99, 922-929.	3.8	15
36	Synthesis of Lanthanum Tungsten Oxynitride Perovskite Thin Films. <i>Advanced Electronic Materials</i> , 2019, 5, 1900214.	5.1	15

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37	<i>In situ</i> x-ray diffraction of solution-derived ferroelectric thin films for quantitative phase and texture evolution measurement. <i>Journal of Applied Physics</i> , 2012, 112, .	2.5	14
38	Review of high-throughput approaches to search for piezoelectric nitrides. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2019, 37, .	2.1	14
39	Powder Synthesis and Hot-Pressing of a $\text{LiTaO}_3$ Ceramic. <i>Journal of the American Ceramic Society</i> , 2012, 95, 2820-2826.	3.8	13
40	Phonon scattering mechanisms dictating the thermal conductivity of lead zirconate titanate ( $\text{PbZr}_{1-x}\text{Ti}_x\text{O}_3$ ) thin films across the compositional phase diagram. <i>Journal of Applied Physics</i> , 2017, 121, .	2.5	13
41	In Situ TEM Study of the Amorphous-to-Crystalline Transition during Dielectric Breakdown in $\text{TiO}_2$ Film. <i>ACS Applied Materials &amp; Interfaces</i> , 2019, 11, 40726-40733.	8.0	13
42	Transparent polycrystalline $\text{Gd}_2\text{Hf}_2\text{O}_7$ ceramics. <i>Journal of the American Ceramic Society</i> , 2018, 101, 3797-3807.	3.8	12
43	Neutron flux characterization techniques for radiation effects studies. <i>Journal of Radioanalytical and Nuclear Chemistry</i> , 2012, 291, 503-507.	1.5	10
44	Solution Chemistry, Substrate, and Processing Effects on Chemical Homogeneity in Lead Zirconate Titanate Thin Films. <i>Journal of the American Ceramic Society</i> , 2015, 98, 2028-2038.	3.8	10
45	Processing and characteristics of transparent $\text{Gd}_3\text{TaO}_7$ polycrystalline ceramics. <i>Journal of the American Ceramic Society</i> , 2018, 101, 1847-1856.	3.8	10
46	Improving the multicaloric properties of $\text{Pb}(\text{Fe}_{0.5}\text{Nb}_{0.5})\text{O}_3$ by controlling the sintering conditions and doping with manganese. <i>Journal of the European Ceramic Society</i> , 2019, 39, 4122-4130.	5.7	10
47	Quantitative chemical analysis of fluorite-to-perovskite transformations in $(\text{Pb},\text{La})(\text{Zr},\text{Ti})\text{O}_3$ PLZT thin films. <i>Journal of Materials Research</i> , 2008, 23, 2944-2953.	2.6	9
48	Wideband 3D-Printed Dielectric Resonator Antennas. , 2018, , .		9
49	Structural Instability in Electrically Stressed, Oxygen Deficient $\text{BaTiO}_3$ Nanocrystals. <i>Advanced Functional Materials</i> , 2020, 30, 2004607.	14.9	9
50	Strengthened relaxor behavior in $(1-x)\text{Pb}(\text{Fe}_{0.5}\text{Nb}_{0.5})\text{O}_3$ - $x\text{BiFeO}_3$ . <i>Journal of Materials Chemistry C</i> , 2020, 8, 3452-3462.	5.5	9
51	Phase and Texture Evolution in Chemically Derived $\text{PZT}$ Thin Films on Pt Substrates. <i>Journal of the American Ceramic Society</i> , 2014, 97, 2973-2979.	3.8	8
52	Thermal Conductivity of Self-Assembling Symmetric Block Copolymer Thin Films of Polystyrene-Block-Poly(methyl methacrylate). <i>Journal of Heat Transfer</i> , 2016, 138, .	2.1	8
53	Phase evolution in solution deposited Pb-deficient PLZT thin films. <i>Journal of Materials Science</i> , 2011, 46, 2148-2154.	3.7	7
54	An Automated Electrochemical Probe for Evaluation of Thin Films. <i>Journal of the Electrochemical Society</i> , 2012, 159, F87-F90.	2.9	7

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55	Effect of Switching Atmospheric Conditions during Crystallization on the Phase Evolution of Solution-Derived Lead Zirconate Titanate Thin Films. <i>Journal of the American Ceramic Society</i> , 2013, 96, 2706-2709.	3.8	7
56	Exploring the phase space of $Zn_2SbN_3$ , a novel semiconducting nitride. <i>Journal of Materials Chemistry C</i> , 2021, 9, 13904-13913.	5.5	7
57	Preparation of Dense Ta <sub>2</sub> O <sub>5</sub> -Based Ceramics by a Coated Powder Method for Enhanced Dielectric Properties. <i>Journal of the American Ceramic Society</i> , 2006, 89, 060601012420004-???	3.8	6
58	Optical anisotropy near the relaxor-ferroelectric phase transition in lanthanum lead zirconate titanate. <i>Journal of Applied Physics</i> , 2013, 114, 053515.	2.5	6
59	Nanoscale Compositional Analysis of a Thermally Processed Entropy-Stabilized Oxide via Correlative TEM and APT. <i>Microscopy and Microanalysis</i> , 2017, 23, 1640-1641.	0.4	6
60	Processing of crack-free high density polycrystalline LiTaO <sub>3</sub> ceramics. <i>Journal of Materials Science: Materials in Electronics</i> , 2017, 28, 3725-3732.	2.2	6
61	<i>In situ</i> TEM study of the transitions between crystalline Si and nonstoichiometric amorphous oxide under bipolar voltage bias. <i>Journal of Applied Physics</i> , 2019, 125, .	2.5	5
62	Stability of epitaxial BiXO <sub>3</sub> phases by density-functional theory. <i>APL Materials</i> , 2020, 8, .	5.1	4
63	On the Degradation Processes of Thin Film PZT in 0.1 N H <sub>2</sub> SO <sub>4</sub> . <i>Journal of the Electrochemical Society</i> , 2013, 160, C128-C135.	2.9	3
64	Direct Observations of Field-Intensity-Dependent Dielectric Breakdown Mechanisms in TiO <sub>2</sub> Single Nanocrystals. <i>ACS Nano</i> , 2020, 14, 8328-8334.	14.6	3
65	Electrochemical Response of Ferroelectric PbZr <sub>0.52</sub> Ti <sub>0.48</sub> O <sub>3</sub> Thin Films. <i>Journal of the Electrochemical Society</i> , 2012, 159, C357-C363.	2.9	2
66	Atomic Scale Composition Profiling of Ferroelectrics via Laser-Pulsed Atom Probe Tomography and Cross-Correlative Transmission Electron Microscopy. <i>Microscopy and Microanalysis</i> , 2013, 19, 980-981.	0.4	2
67	Quasi-static and dynamic fracture behavior of lead zirconate titanate: A study of poling and loading rate. <i>Engineering Fracture Mechanics</i> , 2021, 247, 107669.	4.3	2
68	Density-functional theory calculation of magnetic properties of BiFeO <sub>3</sub> and BiCrO <sub>3</sub> under epitaxial strain. <i>Journal of Applied Physics</i> , 2021, 130, .	2.5	2
69	Micropen Printing of Electronic Components. , 2002, , 229-259.		1
70	Densification and Grain Growth for Powder-Derived Ta <sub>2</sub> O <sub>5</sub> -TiO <sub>2</sub> Ceramics. <i>Journal of the Ceramic Society of Japan</i> , 2007, 115, 678-682.	1.1	1
71	TF026. , 2008, , .		1
72	Quantitative STEM-EDS Spectrum Imaging of Phase Transformations in (Pb, La)(Zr, Ti)O <sub>3</sub> . <i>Microscopy and Microanalysis</i> , 2008, 14, 1434-1435.	0.4	1

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73	Combined electromechanical dynamic fracture behavior of lead zirconate titanate (PZT). Journal of the American Ceramic Society, 2022, 105, 3116-3122.	3.8	1
74	Fabrication of (Ba,Sr)TiO <sub>3</sub> high-value integrated capacitors by chemical solution deposition. , 2008, , .		0
75	Micro- and Nano-patterning of Solution-Derived Functional Electronic Ceramics. Microscopy and Microanalysis, 2008, 14, 1432-1433.	0.4	0
76	Functional Coatings: Chemically Homogeneous Complex Oxide Thin Films Via Improved Substrate Metallization (Adv. Funct. Mater. 11/2012). Advanced Functional Materials, 2012, 22, 2214-2214.	14.9	0
77	Thin Films: Combined Experimental and Computational Methods Reveal the Evolution of Buried Interfaces during Synthesis of Ferroelectric Thin Films (Adv. Mater. Interfaces 10/2015). Advanced Materials Interfaces, 2015, 2, .	3.7	0
78	The European Materials Research Society (EMRS) Spring Meeting 2014 Symposium I. Journal of Sol-Gel Science and Technology, 2015, 73, 519-519.	2.4	0
79	In Situ Transmission Electron Microscopy Study of Conductive Filament Formation in Copper Oxides. IEEE Transactions on Device and Materials Reliability, 2020, 20, 609-612.	2.0	0
80	Investigation of Off-stoichiometry in Ternary Nitrides by EDS and HRTEM. Microscopy and Microanalysis, 2020, 26, 1406-1407.	0.4	0
81	Remembering Joanna McKittrick. Journal of the American Ceramic Society, 2020, 103, 2277-2277.	3.8	0
82	Microstructures in Newly-Realized LnMN <sub>3</sub> Phases. Microscopy and Microanalysis, 2021, 27, 3300-3301.	0.4	0
83	Lithium diffusion in lithium tantalate as measured by confocal Raman spectroscopy. Journal of Materials Science, 2022, 57, 7035-7041.	3.7	0
84	First-principles indicators of ferroic parameters in epitaxial BiFeO <sub>3</sub> and BiCrO <sub>3</sub> . Journal of Applied Physics, 2022, 132, .	2.5	0