Robert M Suter

List of Publications by Year
in descending order

108 papers	5,638 citations	94381 37 h-index	79644 73 g-index
109 all docs	109 docs citations	109 times ranked	3297 citing authors

#	Article	IF	Citations
1	X-ray structure determination of fully hydrated L alpha phase dipalmitoylphosphatidylcholine bilayers. Biophysical Journal, 1996, 70, 1419-1431.	0.2	454
2	Three-dimensional maps of grain boundaries and the stress state of individual grains in polycrystals and powders. Journal of Applied Crystallography, 2001, 34, 751-756.	1.9	320
3	Measurement of chain tilt angle in fully hydrated bilayers of gel phase lecithins. Biophysical Journal, 1993, 64, 1097-1109.	0.2	259
4	Interbilayer interactions from high-resolution x-ray scattering. Physical Review E, 1998, 57, 7014-7024.	0.8	247
5	Structure of the fully hydrated gel phase of dipalmitoylphosphatidylcholine. Biophysical Journal, 1989, 55, 315-325.	0.2	240
6	Order and disorder in fully hydrated unoriented bilayers of gel-phase dipalmitoylphosphatidylcholine. Physical Review E, 1994, 49, 4665-4676.	0.8	204
7	Forward modeling method for microstructure reconstruction using x-ray diffraction microscopy: Single-crystal verification. Review of Scientific Instruments, 2006, 77, 123905.	0.6	193
8	Theory of the structure factor of lipid bilayers. Physical Review E, 1994, 50, 5047-5060.	0.8	186
9	Tracking: a method for structural characterization of grains in powders or polycrystals. Journal of Applied Crystallography, 2001, 34, 744-750.	1.9	165
10	High-energy diffraction microscopy at the advanced photon source. Jom, 2011, 63, 70-77.	0.9	157
11	Structure of gel phase saturated lecithin bilayers: temperature and chain length dependence. Biophysical Journal, 1996, 71, 885-891.	0.2	145
12	Polycrystal Plasticity: Comparison Between Grain - Scale Observations of Deformation and Simulations. Annual Review of Condensed Matter Physics, 2014, 5, 317-346.	5.2	130
13	Data reduction methodology for perturbed angular correlation experiments. Hyperfine Interactions, 1980, 8, 191-213.	0.2	127
14	Small-angle x-ray scattering from lipid bilayers is well described by modified CaillÃ© theory but not by paracrystalline theory. Biophysical Journal, 1996, 70, 349-357.	0.2	126
15	Structure of the ripple phase in lecithin bilayers.. Proceedings of the National Academy of Sciences of the United States of America, 1996, 93, 7008-7012.	3.3	123
16	Adaptive reconstruction method for three-dimensional orientation imaging. Journal of Applied Crystallography, 2013, 46, 512-524.	1.9	122
17	New opportunities for quantitative tracking of polycrystal responses in three dimensions. Current Opinion in Solid State and Materials Science, 2015, 19, 235-244.	5.6	102
18	A rotational and axial motion system load frame insert for <i>in situ</i> high energy x-ray studies. Review of Scientific Instruments, 2015, 86, 093902.	0.6	96

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19	In-situ observation of bulk 3D grain evolution during plastic deformation in polycrystalline Cu. International Journal of Plasticity, 2015, 67, 217-234.	4.1	88
20	Fatigue crack initiation, slip localization and twin boundaries in a nickel-based superalloy. Current Opinion in Solid State and Materials Science, 2014, 18, 244-252.	5.6	86
21	Three-dimensional plastic response in polycrystalline copper<i>via</i>near-field high-energy X-ray diffraction microscopy. Journal of Applied Crystallography, 2012, 45, 1098-1108.	1.9	76
22	Defect structure process maps for laser powder bed fusion additive manufacturing. Additive Manufacturing, 2020, 36, 101552.	1.7	75
23	Observation of recovery and recrystallization in high-purity aluminum measured with forward modeling analysis of high-energy diffraction microscopy. Acta Materialia, 2012, 60, 4311-4318.	3.8	74
24	Critical Fluctuations in Membranes. Physical Review Letters, 1995, 74, 2832-2835.	2.9	73
25	Observation of annealing twin nucleation at triple lines in nickel during grain growth. Acta Materialia, 2015, 99, 63-68.	3.8	73
26	Tensile twin nucleation events coupled to neighboring slip observed in three dimensions. Acta Materialia, 2014, 76, 213-220.	3.8	67
27	Grain boundary velocity and curvature are not correlated in Ni polycrystals. Science, 2021, 374, 189-193.	6.0	63
28	Multiple mechanisms for critical behavior in the biologically relevant phase of lecithin bilayers. Physical Review E, 1998, 58, 7769-7776.	0.8	56
29	High-Energy X-Ray Diffraction Microscopy in Materials Science. Annual Review of Materials Research, 2020, 50, 395-436.	4.3	56
30	Melting of monolayer xenon on silver: The hexatic phase in the weak-substrate limit. Physical Review Letters, 1987, 59, 1706-1709.	2.9	55
31	Three-dimensional characterization of microstructurally small fatigue-crack evolution using quantitative fractography combined with post-mortem X-ray tomography and high-energy X-ray diffraction microscopy. Acta Materialia, 2014, 76, 413-424.	3.8	53
32	Crystal Plasticity Model Validation Using Combined High-Energy Diffraction Microscopy Data for a Ti-7Al Specimen. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2017, 48, 627-647.	1.1	53
33	Crystallographic character of grain boundaries resistant to hydrogen-assisted fracture in Ni-base alloy 725. Nature Communications, 2018, 9, 3386.	5.8	47
34	Dynamical critical behavior of isotropic ferromagnets. Physical Review B, 1982, 26, 5056-5073.	1.1	45
35	Kinetics of subgel formation in DPPC: X-ray diffraction proves nucleation-growth hypothesis. Biochimica Et Biophysica Acta - Biomembranes, 1994, 1191, 14-20.	1.4	43
36	Nonlinear oscillations in electrochemical growth of Zn dendrites. Physical Review B, 1989, 39, 4536-4540.	1.1	42

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37	Review of measurements of critical exponent beta in simple magnetic systems. Journal of Applied Physics, 1979, 50, 1814-1816.	1.1	40
38	Mechanical twinning and detwinning in pure Ti during loading and unloading â€“ An in situ high-energy X-ray diffraction microscopy study. Scripta Materialia, 2014, 92, 35-38.	2.6	38
39	Surfactant Self-Assemblies Controlling Spontaneous Dewetting. Langmuir, 2002, 18, 1649-1654.	1.6	36
40	Pseudopartial Wetting and Precursor Film Growth in Immiscible Metal Systems. Langmuir, 2004, 20, 402-408.	1.6	34
41	Comparison between diffraction contrast tomography and high-energy diffraction microscopy on a slightly deformed aluminium alloy. IUCrJ, 2016, 3, 32-42.	1.0	34
42	Implementation and verification of a microstructure-based capability for modeling microcrack nucleation in LSHR at room temperature. Modelling and Simulation in Materials Science and Engineering, 2015, 23, 035006.	0.8	32
43	Effects of concentration dependent diffusivity on the growth of precursing films of Pb on Cu(111). Surface Science, 2001, 488, 73-82.	0.8	31
44	X-ray study of superlattice melting in TiS2Ag0.33. Physical Review B, 1982, 26, 1495-1498.	1.1	30
45	Three-dimensional observations of grain volume changes during annealing of polycrystalline Ni. Acta Materialia, 2019, 167, 40-50.	3.8	30
46	Anomalous phase behavior of long chain saturated lecithin bilayers. Biochimica Et Biophysica Acta - Biomembranes, 1996, 1279, 17-24.	1.4	29
47	Using x-ray reflectivity to determine the structure of surfactant monolayers. Physical Review E, 2000, 62, 2405-2415.	0.8	28
48	The molecular structure of autophobed monolayers and precursing films of a cationic surfactant on the silicon oxide/silicon surface. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 1994, 89, 145-155.	2.3	27
49	Simulation of spreading of precursing Ag films on Ni(). Computational Materials Science, 2002, 25, 503-509.	1.4	27
50	High speed synchrotron X-ray diffraction experiments resolve microstructure and phase transformation in laser processed Ti-6Al-4V. Materials Research Letters, 2021, 9, 429-436.	4.1	27
51	Effect of Substrate Roughness on D Spacing Supports Theoretical Resolution of Vapor Pressure Paradox. Biophysical Journal, 1998, 74, 1421-1427.	0.2	26
52	Fiducial marker application method for position alignment of <i>in situ</i> multimodal X-ray experiments and reconstructions. Journal of Applied Crystallography, 2016, 49, 700-704.	1.9	26
53	Thermodynamics of first-order and continuous melting of xenon on graphite. Physical Review B, 1986, 34, 2052-2055.	1.1	24
54	Moderate resolution xâ€ray reflectivity. Review of Scientific Instruments, 1992, 63, 5343-5347.	0.6	24

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55	A method to generate conformal finiteâ€element meshes from 3D measurements of microstructurally small fatigueâ€crack propagation. Fatigue and Fracture of Engineering Materials and Structures, 2016, 39, 737-751.	1.7	24
56	Thermodynamics of freezing in two dimensions: The compressibility of monolayer xenon on graphite. Physical Review B, 1989, 39, 2459-2471.	1.1	23
57	Structure of Precursing Thin Films of an Anionic Surfactant on a Silicon Oxide/Silicon Surface. Langmuir, 1995, 11, 48-56.	1.6	23
58	Probing Microstructure Dynamics With X-Ray Diffraction Microscopy. Journal of Engineering Materials and Technology, Transactions of the ASME, 2008, 130, .	0.8	23
59	Quantifying intermediateâ€frequency heterogeneities of <scp>SOFC</scp> electrodes using Xâ€ray computed tomography. Journal of the American Ceramic Society, 2017, 100, 2232-2242.	1.9	23
60	Location of the tricritical point for the melting of commensurate solid krypton onZYXgraphite. Physical Review B, 1985, 31, 627-630.	1.1	22
61	Tests of microstructure reconstruction by forward modeling of high energy X-ray diffraction microscopy data. Powder Diffraction, 2010, 25, 132-137.	0.4	21
62	Crossover in the Dynamic Exponentzfor Three-Dimensional Ferromagnets. Physical Review Letters, 1978, 41, 705-709.	2.9	20
63	Understanding materials microstructure and behavior at the mesoscale. MRS Bulletin, 2015, 40, 951-960.	1.7	20
64	Combined near- and far-field high-energy diffraction microscopy dataset for Ti-7Al tensile specimen elastically loaded in situ. Integrating Materials and Manufacturing Innovation, 2016, 5, 94-102.	1.2	20
65	Observation of Crossover in the Dynamic Exponentzin Fe and Ni. Physical Review Letters, 1980, 45, 908-911.	2.9	19
66	Interfacial Structure and Rearrangement of Nonionic Surfactants near a Moving Contact Line. Langmuir, 2001, 17, 5917-5923.	1.6	18
67	Three-dimensional Î± colony characterization and prior-Î² grain reconstruction of a lamellar Tiâ€"6Alâ€"4V specimen using near-field high-energy X-ray diffraction microscopy. Journal of Applied Crystallography, 2015, 48, 1165-1171.	1.9	17
68	Reentrant disordered phase in two-layer films of Kr on graphite. Physical Review B, 1991, 44, 3365-3368.	1.1	16
69	Voxel-based strain tensors from near-field High Energy Diffraction Microscopy. Current Opinion in Solid State and Materials Science, 2020, 24, 100852.	5.6	15
70	Microscale Observation via High-Speed X-ray Diffraction of Alloy 718 During In Situ Laser Melting. Jom, 2021, 73, 212-222.	0.9	15
71	Simulation domain size requirements for elastic response of 3D polycrystalline materials. Modelling and Simulation in Materials Science and Engineering, 2016, 24, 015006.	0.8	14
72	Study of ?uncorrelated? radiation damage inNi 111In. Hyperfine Interactions, 1978, 4, 711-715.	0.2	13

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73	Thermodynamics and phase diagram of multilayer krypton on graphite. Physical Review B, 1990, 42, 2711-2714.	1.1	13
74	Experimental tests of stereological estimates of grain boundary populations. Acta Materialia, 2012, 60, 2999-3010.	3.8	13
75	Importance of outliers: A three-dimensional study of coarsening in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>Î±</mml:mi></mml:math> -phase iron. Physical Review Materials, 2019, 3, .	0.9	13
76	Non-Destructive Characterization of UO_{2+<i>x</i>} Nuclear Fuels. Microscopy Today, 2017, 25, 42-47.	0.2	12
77	Accuracy and precision of near-field high-energy diffraction microscopy forward-model-based microstructure reconstructions. Journal of Applied Crystallography, 2020, 53, 107-116.	1.9	12
78	Critical exponentÎ³for Ni, as measured by perturbed angular correlations inNiRh100. Physical Review B, 1976, 14, 5022-5028.	1.1	11
79	Diffusion kinetics of Bi and Pbâ€“Bi monolayer precursing films on Cu(1 1 1). Surface Science, 2004, 559, 149-157.	0.8	11
80	Shock induced damage in copper: A before and after, three-dimensional study. Journal of Applied Physics, 2016, 119, .	1.1	10
81	Determining grain boundary energies from triple junction geometries without discretizing the five-parameter space. Acta Materialia, 2019, 166, 126-134.	3.8	10
82	Demonstration of near Field High Energy X-Ray Diffraction Microscopy on High-Z Ceramic Nuclear Fuel Material. Materials Science Forum, 0, 777, 112-117.	0.3	9
83	Correlation of Thermally Induced Pores with Microstructural Features Using High Energy X-rays. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2016, 47, 5580-5588.	1.1	9
84	Measuring Grain Boundary Character Distributions in Ni-Base Alloy 725 Using High-Energy Diffraction Microscopy. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2017, 48, 354-361.	1.1	9
85	Microstructure-Based Estimation of Strength and Ductility Distributions for $$alpha +eta $$ Titanium Alloys. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2021, 52, 2411-2434.	1.1	9
86	Comment on the Role of Spin-Nonconserving Forces in the Critical Dynamics of Fe and Ni. Physical Review Letters, 1983, 50, 1877-1877.	2.9	8
87	Comment on "Two-Dimensional Pressure ofHe4Monolayers: First-Order Melting of the Incommensurate Solid". Physical Review Letters, 1985, 55, 2226-2226.	2.9	8
88	High-energy Needs and Capabilities to Study Multiscale Phenomena in Crystalline Materials. Synchrotron Radiation News, 2012, 25, 18-26.	0.2	8
89	Multiscale measurements for materials modeling. Science, 2017, 356, 704-705.	6.0	8
90	Transverse susceptibility of easyâ€axis ferromagnets nearTC. Journal of Applied Physics, 1984, 55, 2444-2446.	1.1	7

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91	In situspecular and diffuse x-ray reflectivity study of growth dynamics in quench-condensed xenon films. Physical Review B, 1999, 59, 3075-3085.	1.1	7
92	High-Energy Diffraction Microscopy Characterization of Spall Damage. Conference Proceedings of the Society for Experimental Mechanics, 2014, , 397-403.	0.3	5
93	Effect of impurities on hyperfine critical exponents. AIP Conference Proceedings, 1976, , .	0.3	4
94	Critical behavior in radiation damaged systems. Zeitschrift FÃ¼r Physik B Condensed Matter and Quanta, 1980, 37, 203-208.	1.9	4
95	Hyperfine interactions: A unique probe of dynamic critical phenomena. Hyperfine Interactions, 1981, 10, 887-892.	0.2	4
96	Critical behavior of quenched randomly disordered Ni and Fe alloys. Hyperfine Interactions, 1981, 10, 893-899.	0.2	4
97	Highâ€precision vaporâ€pressure isotherms: Apparatus, errors, and results. Review of Scientific Instruments, 1987, 58, 462-467.	0.6	4
98	<i>In Situ</i> Observation of Recovery and Grain Growth in High Purity Aluminum. Materials Science Forum, 0, 715-716, 447-454.	0.3	4
99	Experimental demonstration of coupled multi-peak Bragg coherent diffraction imaging with genetic algorithms. Physical Review B, 2021, 103, .	1.1	3
100	Comparison of simulated and measured grain volume changes during grain growth. Physical Review Materials, 2022, 6, .	0.9	3
101	Topology-faithful nonparametric estimation and tracking of bulk interface networks. Computational Materials Science, 2016, 125, 328-340.	1.4	2
102	Anomalous strain-energy-driven macroscale translation of grains during nonisothermal annealing. Physical Review Materials, 2021, 5, .	0.9	2
103	Image processing in experiments on, and simulations of plastic deformation of polycrystals. , 2014, , .		1
104	Refractive lens based full-field x-ray imaging at 45-50 keV with sub-micron resolution. , 2015, , .		1
105	Hyperfine experiments on magnetic critical phenomena. Hyperfine Interactions, 1978, 4, 471-475.	0.2	0
106	Kinetic Roughening of Quenched Xenon Films. Materials Research Society Symposia Proceedings, 1995, 407, 239.	0.1	0
107	Reply to Comment on Pseudopartial Wetting and Precursor Film Growth in Immiscible Metal Systems. Langmuir, 2005, 21, 3724-3724.	1.6	0
108	Quantifying Damage Accumulation Using State-of-the-Art FFT Method. Materials Science Forum, 2011, 702-703, 515-518.	0.3	0