

# Robert M Suter

## List of Publications by Year in descending order

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108  
papers

5,638  
citations

94269

37  
h-index

79541

73  
g-index

109  
all docs

109  
docs citations

109  
times ranked

3297  
citing authors

#	ARTICLE	IF	CITATIONS
1	Comparison of simulated and measured grain volume changes during grain growth. <i>Physical Review Materials</i> , 2022, 6, .	0.9	3
2	Microscale Observation via High-Speed X-ray Diffraction of Alloy 718 During In Situ Laser Melting. <i>Jom</i> , 2021, 73, 212-222.	0.9	15
3	Microstructure-Based Estimation of Strength and Ductility Distributions for $\alpha + \eta$ Titanium Alloys. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2021, 52, 2411-2434.	1.1	9
4	Experimental demonstration of coupled multi-peak Bragg coherent diffraction imaging with genetic algorithms. <i>Physical Review B</i> , 2021, 103, .	1.1	3
5	Anomalous strain-energy-driven macroscale translation of grains during nonisothermal annealing. <i>Physical Review Materials</i> , 2021, 5, .	0.9	2
6	High speed synchrotron X-ray diffraction experiments resolve microstructure and phase transformation in laser processed Ti-6Al-4V. <i>Materials Research Letters</i> , 2021, 9, 429-436.	4.1	27
7	Grain boundary velocity and curvature are not correlated in Ni polycrystals. <i>Science</i> , 2021, 374, 189-193.	6.0	63
8	Defect structure process maps for laser powder bed fusion additive manufacturing. <i>Additive Manufacturing</i> , 2020, 36, 101552.	1.7	75
9	Voxel-based strain tensors from near-field High Energy Diffraction Microscopy. <i>Current Opinion in Solid State and Materials Science</i> , 2020, 24, 100852.	5.6	15
10	High-Energy X-Ray Diffraction Microscopy in Materials Science. <i>Annual Review of Materials Research</i> , 2020, 50, 395-436.	4.3	56
11	Accuracy and precision of near-field high-energy diffraction microscopy forward-model-based microstructure reconstructions. <i>Journal of Applied Crystallography</i> , 2020, 53, 107-116.	1.9	12
12	Three-dimensional observations of grain volume changes during annealing of polycrystalline Ni. <i>Acta Materialia</i> , 2019, 167, 40-50.	3.8	30
13	Determining grain boundary energies from triple junction geometries without discretizing the five-parameter space. <i>Acta Materialia</i> , 2019, 166, 126-134.	3.8	10
14	Importance of outliers: A three-dimensional study of coarsening in $\pm$ -phase iron. <i>Physical Review Materials</i> , 2019, 3, .	0.9	13
15	Crystallographic character of grain boundaries resistant to hydrogen-assisted fracture in Ni-base alloy 725. <i>Nature Communications</i> , 2018, 9, 3386.	5.8	47
16	Multiscale measurements for materials modeling. <i>Science</i> , 2017, 356, 704-705.	6.0	8
17	Quantifying intermediate-frequency heterogeneities of SOFC electrodes using X-ray computed tomography. <i>Journal of the American Ceramic Society</i> , 2017, 100, 2232-2242.	1.9	23
18	Measuring Grain Boundary Character Distributions in Ni-Base Alloy 725 Using High-Energy Diffraction Microscopy. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2017, 48, 354-361.	1.1	9

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19	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
20	Non-Destructive Characterization of UO <sub>2</sub> Nuclear Fuels. Microscopy Today, 2017, 25, 42-47.	0.2	12
21	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
22	A method to generate conformal finite element meshes from 3D measurements of microstructurally small fatigue crack propagation. Fatigue and Fracture of Engineering Materials and Structures, 2016, 39, 737-751.	1.7	24
23	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
24	Topology-faithful nonparametric estimation and tracking of bulk interface networks. Computational Materials Science, 2016, 125, 328-340.	1.4	2
25	Shock induced damage in copper: A before and after, three-dimensional study. Journal of Applied Physics, 2016, 119, .	1.1	10
26	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
27	Comparison between diffraction contrast tomography and high-energy diffraction microscopy on a slightly deformed aluminium alloy. IUCr, 2016, 3, 32-42.	1.0	34
28	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
29	Understanding materials microstructure and behavior at the mesoscale. MRS Bulletin, 2015, 40, 951-960.	1.7	20
30	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
31	Three-dimensional $\hat{\pm}$ colony characterization and prior- $\hat{I}^2$ grain reconstruction of a lamellar Ti-6Al-4V specimen using near-field high-energy X-ray diffraction microscopy. Journal of Applied Crystallography, 2015, 48, 1165-1171.	1.9	17
32	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
33	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
34	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
35	Refractive lens based full-field x-ray imaging at 45-50 keV with sub-micron resolution. , 2015, , .		1
36	Observation of annealing twin nucleation at triple lines in nickel during grain growth. Acta Materialia, 2015, 99, 63-68.	3.8	73

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37	Image processing in experiments on, and simulations of plastic deformation of polycrystals. , 2014, , .		1
38	Polycrystal Plasticity: Comparison Between Grain - Scale Observations of Deformation and Simulations. Annual Review of Condensed Matter Physics, 2014, 5, 317-346.	5.2	130
39	Mechanical twinning and detwinning in pure Ti during loading and unloading – An in situ high-energy X-ray diffraction microscopy study. Scripta Materialia, 2014, 92, 35-38.	2.6	38
40	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
41	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
42	Tensile twin nucleation events coupled to neighboring slip observed in three dimensions. Acta Materialia, 2014, 76, 213-220.	3.8	67
43	High-Energy Diffraction Microscopy Characterization of Spall Damage. Conference Proceedings of the Society for Experimental Mechanics, 2014, , 397-403.	0.3	5
44	Adaptive reconstruction method for three-dimensional orientation imaging. Journal of Applied Crystallography, 2013, 46, 512-524.	1.9	122
45	High-energy Needs and Capabilities to Study Multiscale Phenomena in Crystalline Materials. Synchrotron Radiation News, 2012, 25, 18-26.	0.2	8
46	Three-dimensional plastic response in polycrystalline copper via near-field high-energy X-ray diffraction microscopy. Journal of Applied Crystallography, 2012, 45, 1098-1108.	1.9	76
47	Experimental tests of stereological estimates of grain boundary populations. Acta Materialia, 2012, 60, 2999-3010.	3.8	13
48	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
49	High-energy diffraction microscopy at the advanced photon source. Jom, 2011, 63, 70-77.	0.9	157
50	Quantifying Damage Accumulation Using State-of-the-Art FFT Method. Materials Science Forum, 2011, 702-703, 515-518.	0.3	0
51	Tests of microstructure reconstruction by forward modeling of high energy X-ray diffraction microscopy data. Powder Diffraction, 2010, 25, 132-137.	0.4	21
52	Probing Microstructure Dynamics With X-Ray Diffraction Microscopy. Journal of Engineering Materials and Technology, Transactions of the ASME, 2008, 130, .	0.8	23
53	Forward modeling method for microstructure reconstruction using x-ray diffraction microscopy: Single-crystal verification. Review of Scientific Instruments, 2006, 77, 123905.	0.6	193
54	Reply to Comment on Pseudopartial Wetting and Precursor Film Growth in Immiscible Metal Systems. Langmuir, 2005, 21, 3724-3724.	1.6	0

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55	Diffusion kinetics of Bi and Pb on Bi monolayer precursing films on Cu(111). Surface Science, 2004, 559, 149-157.	0.8	11
56	Pseudopartial Wetting and Precursor Film Growth in Immiscible Metal Systems. Langmuir, 2004, 20, 402-408.	1.6	34
57	Surfactant Self-Assemblies Controlling Spontaneous Dewetting. Langmuir, 2002, 18, 1649-1654.	1.6	36
58	Simulation of spreading of precursing Ag films on Ni(111). Computational Materials Science, 2002, 25, 503-509.	1.4	27
59	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
60	Tracking: a method for structural characterization of grains in powders or polycrystals. Journal of Applied Crystallography, 2001, 34, 744-750.	1.9	165
61	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
62	Interfacial Structure and Rearrangement of Nonionic Surfactants near a Moving Contact Line. Langmuir, 2001, 17, 5917-5923.	1.6	18
63	Using x-ray reflectivity to determine the structure of surfactant monolayers. Physical Review E, 2000, 62, 2405-2415.	0.8	28
64	In situ specular and diffuse x-ray reflectivity study of growth dynamics in quench-condensed xenon films. Physical Review B, 1999, 59, 3075-3085.	1.1	7
65	Effect of Substrate Roughness on D Spacing Supports Theoretical Resolution of Vapor Pressure Paradox. Biophysical Journal, 1998, 74, 1421-1427.	0.2	26
66	Multiple mechanisms for critical behavior in the biologically relevant phase of lecithin bilayers. Physical Review E, 1998, 58, 7769-7776.	0.8	56
67	Interbilayer interactions from high-resolution x-ray scattering. Physical Review E, 1998, 57, 7014-7024.	0.8	247
68	Structure of gel phase saturated lecithin bilayers: temperature and chain length dependence. Biophysical Journal, 1996, 71, 885-891.	0.2	145
69	Small-angle x-ray scattering from lipid bilayers is well described by modified Caillé theory but not by paracrystalline theory. Biophysical Journal, 1996, 70, 349-357.	0.2	126
70	X-ray structure determination of fully hydrated L alpha phase dipalmitoylphosphatidylcholine bilayers. Biophysical Journal, 1996, 70, 1419-1431.	0.2	454
71	Anomalous phase behavior of long chain saturated lecithin bilayers. Biochimica Et Biophysica Acta - Biomembranes, 1996, 1279, 17-24.	1.4	29
72	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

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73	Kinetic Roughening of Quenched Xenon Films. Materials Research Society Symposia Proceedings, 1995, 407, 239.	0.1	0
74	Critical Fluctuations in Membranes. Physical Review Letters, 1995, 74, 2832-2835.	2.9	73
75	Structure of Precursing Thin Films of an Anionic Surfactant on a Silicon Oxide/Silicon Surface. Langmuir, 1995, 11, 48-56.	1.6	23
76	Order and disorder in fully hydrated unoriented bilayers of gel-phase dipalmitoylphosphatidylcholine. Physical Review E, 1994, 49, 4665-4676.	0.8	204
77	The molecular structure of autophobic 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
78	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
79	Theory of the structure factor of lipid bilayers. Physical Review E, 1994, 50, 5047-5060.	0.8	186
80	Measurement of chain tilt angle in fully hydrated bilayers of gel phase lecithins. Biophysical Journal, 1993, 64, 1097-1109.	0.2	259
81	Moderate resolution x-ray reflectivity. Review of Scientific Instruments, 1992, 63, 5343-5347.	0.6	24
82	Reentrant disordered phase in two-layer films of Kr on graphite. Physical Review B, 1991, 44, 3365-3368.	1.1	16
83	Thermodynamics and phase diagram of multilayer krypton on graphite. Physical Review B, 1990, 42, 2711-2714.	1.1	13
84	Nonlinear oscillations in electrochemical growth of Zn dendrites. Physical Review B, 1989, 39, 4536-4540.	1.1	42
85	Structure of the fully hydrated gel phase of dipalmitoylphosphatidylcholine. Biophysical Journal, 1989, 55, 315-325.	0.2	240
86	Thermodynamics of freezing in two dimensions: The compressibility of monolayer xenon on graphite. Physical Review B, 1989, 39, 2459-2471.	1.1	23
87	High-precision vapor-pressure isotherms: Apparatus, errors, and results. Review of Scientific Instruments, 1987, 58, 462-467.	0.6	4
88	Melting of monolayer xenon on silver: The hexatic phase in the weak-substrate limit. Physical Review Letters, 1987, 59, 1706-1709.	2.9	55
89	Thermodynamics of first-order and continuous melting of xenon on graphite. Physical Review B, 1986, 34, 2052-2055.	1.1	24
90	Location of the tricritical point for the melting of commensurate solid krypton on graphite. Physical Review B, 1985, 31, 627-630.	1.1	22

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91	Comment on "Two-Dimensional Pressure of He4 Monolayers: First-Order Melting of the Incommensurate Solid". Physical Review Letters, 1985, 55, 2226-2226.	2.9	8
92	Transverse susceptibility of easy-axis ferromagnets near TC. Journal of Applied Physics, 1984, 55, 2444-2446.	1.1	7
93	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
94	X-ray study of superlattice melting in TiS <sub>2</sub> Ag <sub>0.33</sub> . Physical Review B, 1982, 26, 1495-1498.	1.1	30
95	Dynamical critical behavior of isotropic ferromagnets. Physical Review B, 1982, 26, 5056-5073.	1.1	45
96	Hyperfine interactions: A unique probe of dynamic critical phenomena. Hyperfine Interactions, 1981, 10, 887-892.	0.2	4
97	Critical behavior of quenched randomly disordered Ni and Fe alloys. Hyperfine Interactions, 1981, 10, 893-899.	0.2	4
98	Data reduction methodology for perturbed angular correlation experiments. Hyperfine Interactions, 1980, 8, 191-213.	0.2	127
99	Critical behavior in radiation damaged systems. Zeitschrift für Physik B Condensed Matter and Quanta, 1980, 37, 203-208.	1.9	4
100	Observation of Crossover in the Dynamic Exponent in Fe and Ni. Physical Review Letters, 1980, 45, 908-911.	2.9	19
101	Review of measurements of critical exponent beta in simple magnetic systems. Journal of Applied Physics, 1979, 50, 1814-1816.	1.1	40
102	Hyperfine experiments on magnetic critical phenomena. Hyperfine Interactions, 1978, 4, 471-475.	0.2	0
103	Study of "uncorrelated" radiation damage in Ni <sup>111</sup> In. Hyperfine Interactions, 1978, 4, 711-715.	0.2	13
104	Crossover in the Dynamic Exponent for Three-Dimensional Ferromagnets. Physical Review Letters, 1978, 41, 705-709.	2.9	20
105	Effect of impurities on hyperfine critical exponents. AIP Conference Proceedings, 1976, , .	0.3	4
106	Critical exponent $\beta$ for Ni, as measured by perturbed angular correlations in NiRh <sub>100</sub> . Physical Review B, 1976, 14, 5022-5028.	1.1	11
107	&lt;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
108	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