

Mark A Tschopp

List of Publications by Citations

Source: <https://exaly.com/author-pdf/1663274/mark-a-tschopp-publications-by-citations.pdf>

Version: 2024-04-28

This document has been generated based on the publications and citations recorded by exaly.com. For the latest version of this publication list, visit the link given above.

The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

98
papers

4,056
citations

35
h-index

62
g-index

102
ext. papers

4,654
ext. citations

4
avg, IF

5.75
L-index

#	Paper	IF	Citations
98	Molecular dynamics simulations of deformation mechanisms of amorphous polyethylene. <i>Polymer</i> , 2010 , 51, 6071-6083	3.9	263
97	Probing grain boundary sink strength at the nanoscale: Energetics and length scales of vacancy and interstitial absorption by grain boundaries in α -Fe. <i>Physical Review B</i> , 2012 , 85,	3.3	226
96	Tensile strength of $\langle 1\ 0\ 0 \rangle$ and $\langle 1\ 1\ 0 \rangle$ tilt bicrystal copper interfaces. <i>Acta Materialia</i> , 2007 , 55, 705-714	4.4	192
95	Asymmetric tilt grain boundary structure and energy in copper and aluminium. <i>Philosophical Magazine</i> , 2007 , 87, 3871-3892	1.6	188
94	Structures and energies of Σ asymmetric tilt grain boundaries in copper and aluminium. <i>Philosophical Magazine</i> , 2007 , 87, 3147-3173	1.6	185
93	Influence of single crystal orientation on homogeneous dislocation nucleation under uniaxial loading. <i>Journal of the Mechanics and Physics of Solids</i> , 2008 , 56, 1806-1830	5	142
92	Effect of grain boundaries on texture formation during dynamic recrystallization of magnesium alloys. <i>Acta Materialia</i> , 2017 , 128, 270-283	8.4	111
91	Porosity prediction: Supervised-learning of thermal history for direct laser deposition. <i>Journal of Manufacturing Systems</i> , 2018 , 47, 69-82	9.1	110
90	Atomistic simulations of homogeneous dislocation nucleation in single crystal copper. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2007 , 15, 693-709	2	104
89	Dislocation nucleation in Σ asymmetric tilt grain boundaries. <i>International Journal of Plasticity</i> , 2008 , 24, 191-217	7.6	100
88	Breakdown of the Schmid law in homogeneous and heterogeneous nucleation events of slip and twinning in magnesium. <i>Journal of the Mechanics and Physics of Solids</i> , 2012 , 60, 2084-2099	5	98
87	Mitigating grain growth in binary nanocrystalline alloys through solute selection based on thermodynamic stability maps. <i>Computational Materials Science</i> , 2014 , 84, 255-266	3.2	94
86	Structure and free volume of $\langle 1\ 1\ 0 \rangle$ symmetric tilt grain boundaries with the E structural unit. <i>Acta Materialia</i> , 2007 , 55, 3959-3969	8.4	91
85	An internal state variable material model for predicting the time, thermomechanical, and stress state dependence of amorphous glassy polymers under large deformation. <i>International Journal of Plasticity</i> , 2013 , 42, 168-193	7.6	80
84	Microstructure and mechanical properties of bulk nanostructured Cu ₅₀ Zn ₅₀ alloys consolidated by equal channel angular extrusion. <i>Acta Materialia</i> , 2014 , 76, 168-185	8.4	79
83	Atomistic simulations of tension-compression asymmetry in dislocation nucleation for copper grain boundaries. <i>Computational Materials Science</i> , 2008 , 44, 351-362	3.2	79
82	Symmetric and asymmetric tilt grain boundary structure and energy in Cu and Al (and transferability to other fcc metals). <i>Integrating Materials and Manufacturing Innovation</i> , 2015 , 4, 176-189	2.9	76

81	Atomic-scale analysis of liquid-gallium embrittlement of aluminum grain boundaries. <i>Acta Materialia</i> , 2014 , 73, 312-325	8.4	75
80	Grain boundary dislocation sources in nanocrystalline copper. <i>Scripta Materialia</i> , 2008 , 58, 299-302	5.6	75
79	In-situ monitoring of melt pool images for porosity prediction in directed energy deposition processes. <i>IJSE Transactions</i> , 2019 , 51, 437-455	3.3	74
78	Atomistic Investigation of the Role of Grain Boundary Structure on Hydrogen Segregation and Embrittlement in Fe. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2013 , 44, 1365-1375	2.3	70
77	Microstructure-Dependent Local Strain Behavior in Polycrystals through In-Situ Scanning Electron Microscope Tensile Experiments. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2009 , 40, 2363-2368	2.3	68
76	Structural, elastic, and thermal properties of cementite (Fe ₃ C) calculated using a modified embedded atom method. <i>Physical Review B</i> , 2014 , 89,	3.3	66
75	Evolution of structure and free volume in symmetric tilt grain boundaries during dislocation nucleation. <i>Acta Materialia</i> , 2010 , 58, 6464-6473	8.4	63
74	Grain Boundary Segregation of Interstitial and Substitutional Impurity Atoms in Alpha-Iron. <i>Jom</i> , 2014 , 66, 129-138	2.1	62
73	Energetic driving force for preferential binding of self-interstitial atoms to Fe grain boundaries over vacancies. <i>Scripta Materialia</i> , 2011 , 64, 908-911	5.6	58
72	Tension-compression asymmetry in homogeneous dislocation nucleation in single crystal copper. <i>Applied Physics Letters</i> , 2007 , 90, 121916	3.4	56
71	A multiscale model of grain boundary structure and energy: From atomistics to a continuum description. <i>Acta Materialia</i> , 2015 , 82, 513-529	8.4	50
70	Influence of Grain Boundary Structure on Dislocation Nucleation in FCC Metals. <i>Dislocations in Solids</i> , 2008 , 14, 43-139		46
69	Effect of resistance spot welding parameters on weld pool properties in a DP600 dual-phase steel: A parametric study using thermomechanically-coupled finite element analysis. <i>Materials & Design</i> , 2014 , 56, 387-397		45
68	Enhancing grain refinement in polycrystalline materials using surface mechanical attrition treatment at cryogenic temperatures. <i>Scripta Materialia</i> , 2013 , 69, 461-464	5.6	44
67	Quantifying the energetics and length scales of carbon segregation to Fe symmetric tilt grain boundaries using atomistic simulations. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2013 , 21, 035009	2	42
66	Dual process monitoring of metal-based additive manufacturing using tensor decomposition of thermal image streams. <i>Additive Manufacturing</i> , 2018 , 23, 443-456	6.1	40
65	Solid State Porous Metal Production: A Review of the Capabilities, Characteristics, and Challenges. <i>Advanced Engineering Materials</i> , 2018 , 20, 1700766	3.5	38
64	The candidacy of shuffle and shear during compound twinning in hexagonal close-packed structures. <i>Acta Materialia</i> , 2013 , 61, 7646-7659	8.4	36

63	An interatomic potential for saturated hydrocarbons based on the modified embedded-atom method. <i>Physical Chemistry Chemical Physics</i> , 2014 , 16, 6233-49	3.6	35
62	Unraveling Recrystallization Mechanisms Governing Texture Development from Rare-Earth Element Additions to Magnesium. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2018 , 49, 1809-1829	2.3	34
61	Structural unit and faceting description of Σ asymmetric tilt grain boundaries. <i>Journal of Materials Science</i> , 2007 , 42, 7806-7811	4.3	31
60	Influence of Mn solute content on grain size reduction and improved strength in mechanically alloyed Al-Mn alloys. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2014 , 589, 57-65	5.3	30
59	Quantification of damage evolution in a 7075 aluminum alloy using an acoustic emission technique. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2011 , 528, 6708-6714	5.3	30
58	Investigating Damage Evolution at the Nanoscale: Molecular Dynamics Simulations of Nanovoid Growth in Single-Crystal Aluminum. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2013 , 44, 617-626	2.3	29
57	Characterizing the Local Primary Dendrite Arm Spacing in Directionally Solidified Dendritic Microstructures. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2014 , 45, 426-437	2.3	29
56	Structure and mechanical properties of Fe-Ni-Ti oxide-dispersion-strengthened (ODS) alloys. <i>Journal of Nuclear Materials</i> , 2015 , 467, 205-213	3.3	26
55	Binding energetics of substitutional and interstitial helium and di-helium defects with grain boundary structure in α -Fe. <i>Journal of Applied Physics</i> , 2014 , 115, 033503	2.5	26
54	The role of Ta on twinnability in nanocrystalline Cu-Ta alloys. <i>Materials Research Letters</i> , 2017 , 5, 48-54	7.4	26
53	Microstructure and damage evolution during tensile loading in a wrought magnesium alloy. <i>Scripta Materialia</i> , 2011 , 64, 912-915	5.6	26
52	Orientation and rate dependence of dislocation nucleation stress computed using molecular dynamics. <i>Scripta Materialia</i> , 2009 , 60, 675-678	5.6	26
51	Automated analysis of twins in hexagonal close-packed metals using molecular dynamics. <i>Scripta Materialia</i> , 2012 , 66, 666-669	5.6	25
50	Finite element analysis of occupant head injuries: parametric effects of the side curtain airbag deployment interaction with a dummy head in a side impact crash. <i>Accident Analysis and Prevention</i> , 2013 , 55, 232-41	6.1	25
49	Multi-scale characterization of orthotropic microstructures. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2008 , 16, 065009	2	23
48	He ⁺ cluster nucleation and growth in α -Fe grain boundaries. <i>Acta Materialia</i> , 2017 , 124, 544-555	8.4	22
47	The role of grain boundary structure and crystal orientation on crack growth asymmetry in aluminum. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2014 , 618, 345-354	5.3	20
46	Comparison of reconstructed spatial microstructure images using different statistical descriptors. <i>Computational Materials Science</i> , 2012 , 51, 437-444	3.2	20

45	Generalized framework for interatomic potential design: Application to Fe ₃ C system. <i>Journal of Nuclear Materials</i> , 2012 , 425, 22-32	3.3	19
44	Shock wave propagation and spall failure of nanocrystalline Cu/Ta alloys: Effect of Ta in solid-solution. <i>Journal of Applied Physics</i> , 2017 , 122, 225901	2.5	19
43	Atomic scale investigation of grain boundary structure role on intergranular deformation in aluminium. <i>Philosophical Magazine</i> , 2014 , 94, 3445-3466	1.6	19
42	Mechanical properties of amorphous cellulose using molecular dynamics simulations with a reactive force field. <i>International Journal of Modelling, Identification and Control</i> , 2013 , 18, 211	0.6	18
41	Structure and thermal decomposition of a nanocrystalline mechanically alloyed supersaturated Cu ₃ Ta solid solution. <i>MRS Communications</i> , 2015 , 5, 333-339	2.7	17
40	Effect of vacancy defects on generalized stacking fault energy of fcc metals. <i>Journal of Physics Condensed Matter</i> , 2014 , 26, 115404	1.8	17
39	Role of nanoscale Cu/Ta interfaces on the shock compression and spall failure of nanocrystalline Cu/Ta systems at the atomic scales. <i>Journal of Materials Science</i> , 2018 , 53, 5745-5765	4.3	16
38	Investigating occupant safety through simulating the interaction between side curtain airbag deployment and an out-of-position occupant. <i>Accident Analysis and Prevention</i> , 2012 , 49, 392-403	6.1	16
37	Binding of HenV clusters to Fe grain boundaries. <i>Journal of Applied Physics</i> , 2014 , 115, 233501	2.5	15
36	An efficient Monte Carlo algorithm for determining the minimum energy structures of metallic grain boundaries. <i>Computational Materials Science</i> , 2018 , 155, 466-475	3.2	14
35	Integrating computational modeling and first-principles calculations to predict stacking fault energy of dilute multicomponent Ni-base alloys. <i>Computational Materials Science</i> , 2014 , 91, 50-55	3.2	13
34	Simulations of tensile bond rupture in single alkane molecules using reactive interatomic potentials. <i>Chemical Physics Letters</i> , 2015 , 635, 278-284	2.5	12
33	Towards Reaching the Theoretical Limit of Porosity in Solid State Metal Foams: Intraparticle Expansion as A Primary and Additive Means to Create Porosity. <i>Advanced Engineering Materials</i> , 2014 , 16, 190-195	3.5	12
32	Beyond initial twin nucleation in hcp metals: Micromechanical formulation for determining twin spacing during deformation. <i>Acta Materialia</i> , 2017 , 133, 134-146	8.4	11
31	Symmetry-based automated extraction of microstructural features: Application to dendritic cores in single-crystal Ni-based superalloys. <i>Scripta Materialia</i> , 2010 , 62, 357-360	5.6	11
30	Using Similarity Metrics to Quantify Differences in High-Throughput Data Sets: Application to X-ray Diffraction Patterns. <i>ACS Combinatorial Science</i> , 2017 , 19, 25-36	3.9	10
29	Challenges of Engineering Grain Boundaries in Boron-Based Armor Ceramics. <i>Jom</i> , 2016 , 68, 1605-1615	2.1	10
28	Solid-State Foaming by Oxide Reduction and Expansion: Tailoring the Foamed Metal Microstructure in the Cu ₂ O System with Oxide Content and Annealing Conditions. <i>Advanced Engineering Materials</i> , 2016 , 18, 83-95	3.5	9

27	Property mapping of friction stir welded Al-2139 T8 plate using site specific shear punch testing. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2017 , 682, 192-201	5.3	8
26	Synthesis, characterization and quantitative analysis of porous metal microstructures: Application to microporous copper produced by solid state foaming. <i>AIMS Materials Science</i> , 2016 , 3, 573-590	1.9	8
25	Evaluating Local Primary Dendrite Arm Spacing Characterization Techniques Using Synthetic Directionally Solidified Dendritic Microstructures. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2015 , 46, 4610-4628	2.3	7
24	Multi-scale characterization of inhomogeneous morphologically textured microstructures. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2010 , 527, 883-889	5.3	7
23	Automated detection and characterization of microstructural features: application to eutectic particles in single crystal Ni-based superalloys. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2010 , 18, 025014	2	6
22	Measurement of gamma' precipitates in a nickel-based superalloy using energy-filtered transmission electron microscopy coupled with automated segmenting techniques. <i>Micron</i> , 2010 , 41, 641-7	2.3	6
21	Effect of magnetic fields on microstructure evolution. <i>Computational Materials Science</i> , 2018 , 150, 464-474	3.4	5
20	Molecular Dynamics Simulations of the Glass Transition Temperature of Amorphous Cellulose. <i>Applied Mechanics and Materials</i> , 2012 , 214, 7-11	0.3	5
19	Bridging atomistic simulations and experiments via virtual diffraction: understanding homophase grain boundary and heterophase interface structures. <i>Journal of Materials Science</i> , 2016 , 51, 1251-1260	4.3	4
18	Automated identification and characterisation of secondary and tertiary η precipitates in nickel-based superalloys. <i>Materials Science and Technology</i> , 2010 , 26, 1414-1422	1.5	4
17	Automated extraction of symmetric microstructure features in serial sectioning images. <i>Materials Characterization</i> , 2010 , 61, 1406-1417	3.9	4
16	A Review on Capturing Twin Nucleation in Crystal Plasticity for Hexagonal Metals. <i>Metals</i> , 2021 , 11, 1373-3	3.3	4
15	Atomic Scale Deformation Mechanisms of Amorphous Polyethylene under Tensile Loading	789-794	4
14	Quantifying Parameter Sensitivity and Uncertainty for Interatomic Potential Design: Application to Saturated Hydrocarbons. <i>ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part B: Mechanical Engineering</i> , 2018 , 4,	1.4	3
13	Correlating deformation mechanisms with X-ray diffraction phenomena in nanocrystalline metals using atomistic simulations. <i>Computational Materials Science</i> , 2018 , 154, 178-186	3.2	2
12	Machine learning to predict aluminum segregation to magnesium grain boundaries. <i>Scripta Materialia</i> , 2021 , 204, 114150	5.6	2
11	The Effect of Crystallographic Orientation on Void Growth: A Molecular Dynamics Study	577-584	2
10	A thermodynamic and kinetic-based grain growth model for nanocrystalline materials: Parameter sensitivity analysis and model extension. <i>Computational Materials Science</i> , 2017 , 131, 250-265	3.2	1

- 9 Rebuttal comments on Mitigating grain growth in binary nanocrystalline alloys through solute selection based on thermodynamic stability maps *Computational Materials Science*, **2015**, 107, 238-242 3.2 1
- 8 Transition of deformation mechanisms in nanotwinned single crystalline SiC. *Philosophical Magazine*, **2019**, 99, 2636-2660 1.6 1
- 7 Algorithm Development in Computational Materials Science. *Jom*, **2014**, 66, 397-398 2.1 1
- 6 Effect of Processing Parameters on the Microstructure of Mechanically Alloyed Nanostructured Al-Mn Alloys **2015**, 3-11 1
- 5 Characterizing Primary Dendritic Microstructures to Quantify the Processing-Structure-Property Relationship in Single Crystal Nickel-Based Superalloys 299-310 1
- 4 Effect of Processing Parameters on the Microstructure of Mechanically Alloyed Nanostructured Al-Mn Alloys **2015**, 1-11
- 3 From Electrons to Atoms: Designing an Interatomic Potential for Fe-Al Alloys 21-48
- 2 Enhancing Mechanical Properties of Hot Wrought Steel by Microalloying and Optimizing Heat Treatments. *Journal of Materials Engineering and Performance*, **2020**, 29, 5374-5387 1.6
- 1 Integrating exploratory data analytics into ReaxFF parameterization. *MRS Communications*, **2018**, 8, 1300-1310 1.7