Robert MaaÃ

List of Publications by Year
in descending order

82	3,685	117625	133252
papers	citations	34 h-index	59 g-index

83	83	83	2419
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Early stages of liquid-metal embrittlement in an advanced high-strength steel. Materials Today Advances, 2022, 13, 100196.	5.2	7
2	Mild-to-wild plastic transition is governed by athermal screw dislocation slip in bcc Nb. Nature Communications, 2022, 13, 1010.	12.8	9
3	In situ thermal annealing transmission electron microscopy of irradiation induced Fe nanoparticle precipitation in Feâ€“Si alloy. Journal of Applied Physics, 2022, 131, 164902.	2.5	0
4	Strain-dependent shear-band structure in a Zr-based bulk metallic glass. Scripta Materialia, 2021, 190, 75-79.	5.2	17
5	Evidence of room-temperature shear-deformation in a Cu-Al intermetallic. Scripta Materialia, 2021, 190, 126-130.	5.2	10
6	Microstructural signatures of dislocation avalanches in a high-entropy alloy. Physical Review Materials, 2021, 5, .	2.4	4
7	Micro-plasticity in a fragile model binary glass. Acta Materialia, 2021, 209, 116771.	7.9	16
8	Microstructure and nanomechanical behavior of sputtered CuNb thin films. Intermetallics, 2021, 136, 107249.	3.9	6
9	Flaw-insensitive fracture of a micrometer-sized brittle metallic glass. Acta Materialia, 2021, 218, 117219.	7.9	17
10	Viscosity and transport in a model fragile metallic glass. Physical Review Materials, 2021, 5, .	2.4	4
11	Emergent structural length scales in a model binary glass - The micro-second molecular dynamics time-scale regime. Journal of Alloys and Compounds, 2020, 821, 153209.	5.5	22
12	Beyond Serrated Flow in Bulk Metallic Glasses: What Comes Next?. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2020, 51, 5597-5605.	2.2	8
13	Applied-force oscillations in avalanche dynamics. Physical Review E, 2020, 101, 053003.	2.1	3
14	Structural dynamics and rejuvenation during cryogenic cycling in a Zr-based metallic glass. Acta Materialia, 2020, 196, 723-732.	7.9	38
15	Scale-dependent pop-ins in nanoindentation and scale-free plastic fluctuations in microcompression. Journal of Materials Research, 2020, 35, 196-205.	2.6	9
16	Split-vacancy defect complexes of oxygen in hcp and fcc cobalt. Physical Review Materials, 2020, 4, .	2.4	1
17	Shear-band cavities and strain hardening in a metallic glass revealed with phase-contrast x-ray tomography. Scripta Materialia, 2019, 170, 29-33.	5.2	19
18	Shear-band structure and chemistry in a Zr-based metallic glass probed with nano-beam x-ray fluorescence and transmission electron microscopy. Scripta Materialia, 2019, 169, 23-27.	5.2	17

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19	Stress breaks universal aging behavior in a metallic glass. Nature Communications, 2019, 10, 5006.	12.8	28
20	Effects of orientation and pre-deformation on velocity profiles of dislocation avalanches in gold microcrystals. European Physical Journal B, 2019, 92, 1.	1.5	12
21	Avalanche statistics and the intermittent-to-smooth transition in microplasticity. Physical Review Materials, 2019, 3, .	2.4	14
22	Fast Slip Velocity in a High-Entropy Alloy. Jom, 2018, 70, 1088-1093.	1.9	16
23	Shear banding leads to accelerated aging dynamics in a metallic glass. Physical Review B, 2018, 97, .	3.2	43
24	Micro-plasticity and recent insights from intermittent and small-scale plasticity. Acta Materialia, 2018, 143, 338-363.	7.9	119
25	Thermally-activated stress relaxation in a model amorphous solid and the formation of a system-spanning shear event. Acta Materialia, 2018, 143, 205-213.	7.9	25
26	Energy Storage in Metallic Glasses via Flash Annealing. Advanced Functional Materials, 2018, 28, 1805385.	14.9	34
27	Elastic Fluctuations and Structural Heterogeneities in Metallic Glasses. Advanced Functional Materials, 2018, 28, 1800388.	14.9	48
28	Shapes and velocity relaxation of dislocation avalanches in Au and Nb microcrystals. Acta Materialia, 2018, 152, 86-95.	7.9	39
29	Temperature rise from fracture in a Zr-based metallic glass. Applied Physics Letters, 2018, 112, .	3.3	19
30	Local volume as a robust structural measure and its connection to icosahedral content in a model binary amorphous system. Materialia, 2018, 3, 97-106.	2.7	6
31	Nontrivial scaling exponents of dislocation avalanches in microplasticity. Physical Review Materials, 2018, 2, .	2.4	25
32	Gamma relaxation in bulk metallic glasses. Scripta Materialia, 2017, 137, 5-8.	5.2	66
33	Linking macroscopic rejuvenation to nano-elastic fluctuations in a metallic glass. Acta Materialia, 2017, 138, 111-118.	7.9	76
34	Shear-band thickness and shear-band cavities in a Zr-based metallic glass. Acta Materialia, 2017, 140, 206-216.	7.9	96
35	Thermal processing and enthalpy storage of a binary amorphous solid: A molecular dynamics study. Journal of Materials Research, 2017, 32, 2668-2679.	2.6	26
36	Spatiotemporal slip dynamics during deformation of gold micro-crystals. Acta Materialia, 2017, 122, 109-119.	7.9	22

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37	The stress statistics of the first pop-in or discrete plastic event in crystal plasticity. Journal of Applied Physics, 2016, 120, .	2.5	16
38	Critical stress statistics and a fold catastrophe in intermittent crystal plasticity. Physical Review E, 2016, 94, 033001.	2.1	5
39	Unified Criterion for Temperature-Induced and Strain-Driven Glass Transitions in Metallic Glass. Physical Review Letters, 2015, 115, 135701.	7.8	33
40	Shearâ€Band Dynamics in Metallic Glasses. Advanced Functional Materials, 2015, 25, 2353-2368.	14.9	190
41	Strain induced fragility transition in metallic glass. Nature Communications, 2015, 6, 7179.	12.8	32
42	Independence of Slip Velocities on Applied Stress in Small Crystals. Small, 2015, 11, 341-351.	10.0	26
43	A probabilistic explanation for the size-effect in crystal plasticity. Philosophical Magazine, 2015, 95, 1829-1844.	1.6	15
44	Crystal size effect in two dimensions â€“ Influence of size and shape. Scripta Materialia, 2015, 102, 27-30.	5.2	12
45	Dynamic properties of major shear bands in Zrâ€“Cuâ€“Al bulk metallic glasses. Acta Materialia, 2015, 96, 428-436.	7.9	28
46	Long range stress fields and cavitation along a shear band in a metallic glass: The local origin of fracture. Acta Materialia, 2015, 98, 94-102.	7.9	93
47	Slip statistics of dislocation avalanches under different loading modes. Physical Review E, 2015, 91, 042403.	2.1	63
48	Rate-dependent shear-band initiation in a metallic glass. Applied Physics Letters, 2015, 106, .	3.3	33
49	Universal power-law strengthening in metals?. Scripta Materialia, 2015, 109, 19-22.	5.2	10
50	Room Temperature Homogeneous Ductility of Micrometerâ€Sized Metallic Glass. Advanced Materials, 2014, 26, 5715-5721.	21.0	68
51	A single shear band in a metallic glass: Local core and wide soft zone. Applied Physics Letters, 2014, 105, .	3.3	85
52	Linking high- and low-temperature plasticity in bulk metallic glasses II: use of a log-normal barrier energy distribution and a mean-field description of high-temperature plasticity. Philosophical Magazine, 2014, 94, 2776-2803.	1.6	17
53	Compositional dependence of shear-band dynamics in the Zrâ€“Cuâ€“Al bulk metallic glass system. Applied Physics Letters, 2014, 104, 101910.	3.3	28
54	Deformation response of ferrite and martensite in a dual-phase steel. Acta Materialia, 2014, 62, 197-211.	7.9	254

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55	Small-scale plasticity: Insights into dislocation avalanche velocities. Scripta Materialia, 2013, 69, 586-589.	5.2	37
56	Linking high- and low-temperature plasticity in bulk metallic glasses: thermal activation, extreme value statistics and kinetic freezing. Philosophical Magazine, 2013, 93, 4232-4263.	1.6	22
57	Fatigue deformation of microsized metallic glasses. Scripta Materialia, 2013, 68, 773-776.	5.2	32
58	Micro-plasticity and intermittent dislocation activity in a simplified micro-structural model. Modelling and Simulation in Materials Science and Engineering, 2013, 21, 035007.	2.0	29
59	The Role of Disorder and the Elastic Robustness of Bulk Metallic Glasses. Materials Research Society Symposia Proceedings, 2012, 1520, 1.	0.1	2
60	The Boson peak of model glass systems and its relation to atomic structure. European Physical Journal B, 2012, 85, 1.	1.5	52
61	Ultrahigh Strength of Dislocationâ€Free Ni₃Al Nanocubes. Small, 2012, 8, 1869-1875.	10.0	61
62	Shear-band arrest and stress overshoots during inhomogeneous flow in a metallic glass. Applied Physics Letters, 2012, 100, .	3.3	52
63	In-situ characterization of the dislocation-structure evolution in Ni micro-pillars. Acta Materialia, 2012, 60, 1027-1037.	7.9	56
64	Single shear-band plasticity in a bulk metallic glass at cryogenic temperatures. Scripta Materialia, 2012, 66, 231-234.	5.2	57
65	Probing Shear-Band Initiation in Metallic Glasses. Physical Review Letters, 2011, 107, 185502.	7.8	135
66	Propagation dynamics of individual shear bands during inhomogeneous flow in a Zr-based bulk metallic glass. Acta Materialia, 2011, 59, 3205-3213.	7.9	181
67	Thermal-activation model for freezing and the elastic robustness of bulk metallic glasses. Physical Review B, 2011, 84, .	3.2	12
68	Stick-slip dynamics and recent insights into shear banding in metallic glasses. Journal of Materials Research, 2011, 26, 1453-1463.	2.6	105
69	On the plasticity of small-scale nickelâ€“titanium shape memory alloys. Scripta Materialia, 2010, 62, 492-495.	5.2	37
70	Stickâ€“slip behavior of serrated flow during inhomogeneous deformation of bulk metallic glasses. Acta Materialia, 2010, 58, 3742-3750.	7.9	110
71	Temperature-dependent shear band dynamics in a Zr-based bulk metallic glass. Applied Physics Letters, 2010, 96, .	3.3	65
72	In situ Laue diffraction of metallic micropillars. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2009, 524, 40-45.	5.6	37

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73	Smaller is stronger: The effect of strain hardening. Acta Materialia, 2009, 57, 5996-6005.	7.9	115
74	On the Microstructure of Nanoporous Gold: An X-ray Diffraction Study. Nano Letters, 2009, 9, 1158-1163.	9.1	132
75	On the initial microstructure of metallic micropillars. Scripta Materialia, 2008, 59, 471-474.	5.2	46
76	Crystal rotation in Cu single crystal micropillars: In situ Laue and electron backscatter diffraction. Applied Physics Letters, 2008, 92, .	3.3	77
77	IN SITU TIME RESOLVED LAUE DIFFRACTION DURING MICRO-COMPRESSION EXPERIMENTS. Advances in Synchrotron Radiation, 2008, 01, 151-157.	0.0	0
78	A strong micropillar containing a low angle grain boundary. Applied Physics Letters, 2007, 91, .	3.3	31
79	Time-Resolved Laue Diffraction of Deforming Micropillars. Physical Review Letters, 2007, 99, 145505.	7.8	104
80	Influence of hydrogen on the growth of FePt thin films. Journal of Applied Physics, 2006, 100, 073910.	2.5	14
81	From Micro- to Macroplasticity. Advanced Materials, 2006, 18, 1545-1548.	21.0	79
82	Defect structure in micropillars using x-ray microdiffraction. Applied Physics Letters, 2006, 89, 151905.	3.3	74