Todd C Hufnagel

List of Publications by Year
in descending order

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86 papers	7,938 citations	101543 36 h-index	64796 79 g-index
87 all docs	87 docs citations	87 times ranked	4599 citing authors

#	Article	IF	Citations
1	Mechanical behavior of amorphous alloys. Acta Materialia, 2007, 55, 4067-4109.	7.9	2,919
2	Deformation of metallic glasses: Recent developments in theory, simulations, and experiments. Acta Materialia, 2016, 109, 375-393.	7.9	400
3	Metallic glass matrix composite with precipitated ductile reinforcement. Applied Physics Letters, 2002, 81, 1020-1022.	3.3	330
4	Enhanced plastic strain in Zr-based bulk amorphous alloys. Physical Review B, 2001, 64, .	3.2	255
5	Free volume coalescence and void formation in shear bands in metallic glass. Journal of Applied Physics, 2003, 93, 1432-1437.	2.5	193
6	Nanometre-scale defects in shear bands in a metallic glass. Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties, 2002, 82, 2623-2630.	0.6	187
7	Bulk Metallic Glasses Deform via Slip Avalanches. Physical Review Letters, 2014, 112, 155501.	7.8	183
8	Mechanical properties of single electrospun drug-encapsulated nanofibres. Nanotechnology, 2006, 17, 3880-3891.	2.6	179
9	Size-independent strength and deformation mode in compression of a Pd-based metallic glass. Acta Materialia, 2008, 56, 5091-5100.	7.9	175
10	Deformation and Failure of Zr₅₇Ti₅Cu₂₀Ni₈Al₁₀ Bulk Metallic Glass Under Quasi-static and Dynamic Compression. Journal of Materials Research, 2002, 17, 1441-1445.	2.6	172
11	Characterization of nanometer-scale defects in metallic glasses by quantitative high-resolution transmission electron microscopy. Physical Review B, 2002, 65, .	3.2	158
12	Structural aspects of elastic deformation of a metallic glass. Physical Review B, 2006, 73, .	3.2	139
13	Relation between short-range order and crystallization behavior in Zr-based amorphous alloys. Applied Physics Letters, 2000, 77, 1970-1972.	3.3	138
14	Reactive sintering: An important component in the combustion of nanocomposite thermites. Combustion and Flame, 2012, 159, 2-15.	5.2	135
15	Controlling shear band behavior in metallic glasses through microstructural design. Intermetallics, 2002, 10, 1163-1166.	3.9	130
16	Joining bulk metallic glass using reactive multilayer foils. Scripta Materialia, 2003, 48, 1575-1580.	5.2	129
17	Characterization and modeling of a martensitic transformation in a platinum modified diffusion aluminide bond coat for thermal barrier coatings. Acta Materialia, 2003, 51, 4279-4294.	7.9	125
18	Development of shear band structure during deformation of a Zr57Ti5Cu20Ni8Al10 bulk metallic glass. Scripta Materialia, 2000, 43, 1071-1075.	5.2	118

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19	Studies of shear band velocity using spatially and temporally resolved measurements of strain during quasistatic compression of a bulk metallic glass. Acta Materialia, 2009, 57, 4639-4648.	7.9	115
20	Universal Quake Statistics: From Compressed Nanocrystals to Earthquakes. Scientific Reports, 2015, 5, 16493.	3.3	104
21	Phase transformations during rapid heating of Al/Ni multilayer foils. Applied Physics Letters, 2008, 93, .	3.3	103
22	Bulk and microscale compressive properties of a Pd-based metallic glass. Scripta Materialia, 2007, 57, 517-520.	5.2	96
23	Time-resolved x-ray microdiffraction studies of phase transformations during rapidly propagating reactions in Al/Ni and Zr/Ni multilayer foils. Journal of Applied Physics, 2010, 107, .	2.5	92
24	Microstructural evolution of platinum modified nickel aluminide bond coat during thermal cycling. Surface and Coatings Technology, 2003, 163-164, 25-30.	4.8	91
25	Micromechanics of deformation of metallic-glassâ€“matrix composites from in situ synchrotron strain measurements and finite element modeling. Acta Materialia, 2005, 53, 1883-1893.	7.9	88
26	Cryogenic rejuvenation. Nature Materials, 2015, 14, 867-868.	27.5	63
27	Short- and medium-range order in(Zr70Cu20Ni10)90â^'xTaxAl10bulk amorphous alloys. Physical Review B, 2003, 67, .	3.2	61
28	Using Fluctuation Microscopy to Characterize Structural Order in Metallic Glasses. Microscopy and Microanalysis, 2003, 9, 509-515.	0.4	61
29	Thermal and microstructural effects of welding metallic glasses by self-propagating reactions in multilayer foils. Acta Materialia, 2005, 53, 3713-3719.	7.9	61
30	Finding order in disorder. Nature Materials, 2004, 3, 666-667.	27.5	60
31	Glass-forming ability and crystallization of bulk metallic glass (HfxZr1â^'x)52.5Cu17.9Ni14.6Al10Ti5. Journal of Non-Crystalline Solids, 2002, 311, 77-82.	3.1	58
32	Microstructural study of an oscillatory formation reaction in nanostructured reactive multilayer foils. Applied Physics Letters, 2005, 87, 153108.	3.3	47
33	Crystallization and mechanical behavior of (Hf, Zr)â€“Tiâ€“Cuâ€“Niâ€“Al metallic glasses. Journal of Non-Crystalline Solids, 2003, 317, 112-117.	3.1	46
34	Universal slip dynamics in metallic glasses and granular matter â€“ linking frictional weakening with inertial effects. Scientific Reports, 2017, 7, 43376.	3.3	41
35	Deformation and failure of Zr57Nb5Al10Cu15.4Ni12.6/W particle composites under quasi-static and dynamic compression. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2004, 35, 3439-3444.	2.2	39
36	Viewing internal bubbling and microexplosions in combusting metal particles via x-ray phase contrast imaging. Combustion and Flame, 2019, 199, 194-203.	5.2	39

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37	Experimental evidence for both progressive and simultaneous shear during quasistatic compression of a bulk metallic glass. Journal of Applied Physics, 2016, 119, .	2.5	36
38	TEM analysis of Coâ€“Gd and Coâ€“Gd multilayer structures. Journal of Materials Research, 1993, 8, 771-774.	2.6	31
39	Structure and properties of Zrâ€“Taâ€“Cuâ€“Niâ€“Al bulk metallic glasses and metallic glass matrix composites. Journal of Non-Crystalline Solids, 2003, 317, 158-163.	3.1	31
40	Length-scale dependence of elastic strain from scattering measurements in metallic glasses. Physical Review B, 2012, 85, .	3.2	31
41	Time-resolved x-ray diffraction techniques for bulk polycrystalline materials under dynamic loading. Review of Scientific Instruments, 2014, 85, 093901.	1.3	28
42	Yield criteria and strain-rate behavior of Zr57.4Cu16.4Ni8.2Ta8Al10 metallic-glass-matrix composites. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2006, 37, 3251-3258.	2.2	27
43	Structural evolution during deposition of epitaxial Fe/Pt(001) multilayers. Journal of Applied Physics, 1999, 85, 2609-2616.	2.5	26
44	Shear bands in metallic glasses are not necessarily hot. APL Materials, 2014, 2, .	5.1	25
45	Amorphous alloys formed by solid state reaction. Journal of Alloys and Compounds, 1993, 194, 221-227.	5.5	24
46	Structural anisotropy in amorphous Fe-Tb thin films. Physical Review B, 1996, 53, 12024-12030.	3.2	24
47	Self-propagating reactions in Al/Zr multilayers: Anomalous dependence of reaction velocity on bilayer thickness. Journal of Applied Physics, 2013, 114, .	2.5	24
48	Preface to the viewpoint set on mechanical behavior of metallic glasses. Scripta Materialia, 2006, 54, 317-319.	5.2	23
49	Observation of a rapid amorphization reaction. Journal of Materials Research, 1992, 7, 1976-1979.	2.6	22
50	Fracture toughness of bulk metallic glass welds made using nanostructured reactive multilayer foils. Scripta Materialia, 2008, 58, 315-318.	5.2	22
51	Quantitative In Situ Studies of Dynamic Fracture in Brittle Solids Using Dynamic X-ray Phase Contrast Imaging. Experimental Mechanics, 2018, 58, 1423-1437.	2.0	20
52	Crack-Tip Strain Field Mapping and the Toughness of Metallic Glasses. PLoS ONE, 2013, 8, e83289.	2.5	19
53	Fast X-ray microdiffraction techniques for studying irreversible transformations in materials. Journal of Synchrotron Radiation, 2011, 18, 464-474.	2.4	16
54	X-ray reflectivity measurement of interdiffusion inÂmetallic multilayers during rapid heating. Journal of Synchrotron Radiation, 2017, 24, 796-801.	2.4	15

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55	Medium-Range Order in Metallic Glasses Studied by Fluctuation Microscopy. Microscopy and Microanalysis, 2001, 7, 1260-1261.	0.4	14
56	Insights from the MEDE program: An overview of microstructureâ€“property linkages in the dynamic behaviors of magnesium alloys. Mechanics of Materials, 2021, 163, 104084.	3.2	13
57	From critical behavior to catastrophic runaways: comparing sheared granular materials with bulk metallic glasses. Granular Matter, 2019, 21, 1.	2.2	12
58	Real-time observation of twinning-detwinning in shock-compressed magnesium via time-resolved in situ synchrotron XRD experiments. Physical Review Materials, 2020, 4, .	2.4	12
59	Slip statistics for a bulk metallic glass composite reflect its ductility. Journal of Applied Physics, 2018, 124, 185101.	2.5	11
60	Nanometre-scale defects in shear bands in a metallic glass. Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties, 2002, 82, 2623-2630.	0.6	11
61	Selected area nanodiffraction fluctuation electron microscopy for studying structural order in amorphous solids. Scripta Materialia, 2008, 58, 303-306.	5.2	10
62	Comment on â€˜â€˜Amorphous films formed by solidâ€state reaction in an immiscible Yâ€“Mo system and their structural relaxationâ€™â€™ [Appl. Phys. Lett. 68, 3096 (1996)]. Applied Physics Letters, 1996, 69, 2938-2939.	3.3	9
63	Mechanisms of oxide growth during the combustion of Al:Zr nanolaminate foils. Combustion and Flame, 2018, 191, 442-452.	5.2	9
64	In Situ Time-Resolved Measurements of Extension Twinning During Dynamic Compression of Polycrystalline Magnesium. Journal of Dynamic Behavior of Materials, 2018, 4, 222-230.	1.7	9
65	Strain-Rate Dependence of the Martensitic Transformation Behavior in a 10 Pct Ni Multi-phase Steel Under Compression. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2020, 51, 5101-5109.	2.2	7
66	Determination of size distributions of non-spherical pores or particles from single x-ray phase contrast images. Optics Express, 2019, 27, 17322.	3.4	7
67	Structural and magnetic length scales in amorphous TbFe2. Journal of Magnetism and Magnetic Materials, 2003, 256, 322-327.	2.3	6
68	Crack nucleation and growth during dynamic indentation of chemically-strengthened glass. Extreme Mechanics Letters, 2020, 38, 100754.	4.1	6
69	Effect of annealing on Y/Mo multilayers. Journal of Applied Physics, 1999, 86, 2459-2463.	2.5	4
70	Validated simulations of dynamic crack propagation in single crystals using EFEM and XFEM. International Journal of Fracture, 2019, 215, 49-65.	2.2	4
71	Magnesium alloy design: Examples from the Materials in Extreme Dynamic Environments Metals Collaborative Research Group. Mechanics of Materials, 2022, 165, 104136.	3.2	4
72	Structural Characterization of Multilayers Using X-ray Diffraction. Materials Research Society Symposia Proceedings, 1991, 239, 475.	0.1	3

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73	Short-Range Order and Nanocrystallization in Amorphous Zr-Ti-Cu-Ni-Al. Materials Research Society Symposia Proceedings, 1999, 580, 381.	0.1	3
74	In-Situ Observations of Shear Band Development during Deformation of a Bulk Metallic Glass. Materials Research Society Symposia Proceedings, 2000, 644, 1021.	0.1	3
75	Quasicrystal formation in Zr-Cu-Ni-Al-Ta metallic glasses and composites. Philosophical Magazine, 2006, 86, 299-307.	1.6	2
76	Special issue of mechanics of materials: Mechanics of magnesium alloys in dynamic environments. Mechanics of Materials, 2022, 168, 104264.	3.2	2
77	Structural Transformations During Growth of Epitaxial Fe(001) Thin Films on Cu(001) and Pt(001). Materials Research Society Symposia Proceedings, 1996, 436, 9.	0.1	1
78	Synchrotron Strain Measurements for in situ Formed Metallic Glass Matrix Composites. Materials Research Society Symposia Proceedings, 2003, 806, 326.	0.1	1
79	Metallic glass fluid flow during welding using self-propagating reactive multilayer foils. Materials Research Society Symposia Proceedings, 2003, 806, 7.	0.1	1
80	Structural Transformations Due to Intermixing During Deposition oF Fe/Pt(001) Epitaxial Multilayers. Materials Research Society Symposia Proceedings, 1996, 441, 367.	0.1	0
81	Plastic Deformation of Bulk Amorphous Alloys. Materials Research Society Symposia Proceedings, 2000, 644, 1171.	0.1	0
82	Preparation and Mechanical Properties of Hafnium-based Bulk Metallic Glasses. Materials Research Society Symposia Proceedings, 2000, 644, 12161.	0.1	0
83	Effect of Loading Rate on Failure in Bulk Metallic Glasses. Materials Research Society Symposia Proceedings, 2002, 754, 1.	0.1	0
84	Structure of Shear Bands in Zirconium-Based Metallic Glasses Observed by Transmission Electron Microscopy. Materials Research Society Symposia Proceedings, 2002, 754, 1.	0.1	0
85	Structure and Defects on the Nanometer Scale in Metallic Glasses. Microscopy and Microanalysis, 2004, 10, 80-81.	0.4	0
86	Strain measurement in metallic glasses and metallic-glass-matrix composites by means of x-ray scattering. Materials Research Society Symposia Proceedings, 2005, 903, 1.	0.1	0