# 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 | Magnesium alloy design: Examples from the Materials in Extreme Dynamic Environments Metals Collaborative Research Group. Mechanics of Materials, 2022, 165, 104136. | 3.2 | 4 |
| 2 | Special issue of mechanics of materials: Mechanics of magnesium alloys in dynamic environments. Mechanics of Materials, 2022, 168, 104264. | 3.2 | 2 |
| 3 | 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 |
| 4 | 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 |
| 5 | Crack nucleation and growth during dynamic indentation of chemically-strengthened glass. Extreme Mechanics Letters, 2020, 38, 100754. | 4.1 | 6 |
| 6 | 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 |
| 7 | From critical behavior to catastrophic runaways: comparing sheared granular materials with bulk metallic glasses. Granular Matter, 2019, 21, 1. | 2.2 | 12 |
| 8 | Validated simulations of dynamic crack propagation in single crystals using EFEM and XFEM. International Journal of Fracture, 2019, 215, 49-65. | 2.2 | 4 |
| 9 | 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 |
| 10 | 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 |
| 11 | Mechanisms of oxide growth during the combustion of Al:Zr nanolaminate foils. Combustion and Flame, 2018, 191, 442-452. | 5.2 | 9 |
| 12 | 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 |
| 13 | Slip statistics for a bulk metallic glass composite reflect its ductility. Journal of Applied Physics, 2018, 124, 185101. | 2.5 | 11 |
| 14 | 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 |
| 15 | Universal slip dynamics in metallic glasses and granular matter â€“ linking frictional weakening with inertial effects. Scientific Reports, 2017, 7, 43376. | 3.3 | 41 |
| 16 | X-ray reflectivity measurement of interdiffusion inÂmetallic multilayers during rapid heating. Journal of Synchrotron Radiation, 2017, 24, 796-801. | 2.4 | 15 |
| 17 | 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 |
| 18 | Deformation of metallic glasses: Recent developments in theory, simulations, and experiments. Acta Materialia, 2016, 109, 375-393. | 7.9 | 400 |

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|---|---|---|---|
| 19 | Universal Quake Statistics: From Compressed Nanocrystals to Earthquakes. Scientific Reports, 2015, 5, 16493. | 3.3 | 104 |
| 20 | Cryogenic rejuvenation. Nature Materials, 2015, 14, 867-868. | 27.5 | 63 |
| 21 | Time-resolved x-ray diffraction techniques for bulk polycrystalline materials under dynamic loading. Review of Scientific Instruments, 2014, 85, 093901. | 1.3 | 28 |
| 22 | Shear bands in metallic glasses are not necessarily hot. APL Materials, 2014, 2, . | 5.1 | 25 |
| 23 | Bulk Metallic Glasses Deform via Slip Avalanches. Physical Review Letters, 2014, 112, 155501. | 7.8 | 183 |
| 24 | Self-propagating reactions in Al/Zr multilayers: Anomalous dependence of reaction velocity on bilayer thickness. Journal of Applied Physics, 2013, 114, . | 2.5 | 24 |
| 25 | Crack-Tip Strain Field Mapping and the Toughness of Metallic Glasses. PLoS ONE, 2013, 8, e83289. | 2.5 | 19 |
| 26 | Length-scale dependence of elastic strain from scattering measurements in metallic glasses. Physical Review B, 2012, 85, . | 3.2 | 31 |
| 27 | Reactive sintering: An important component in the combustion of nanocomposite thermites. Combustion and Flame, 2012, 159, 2-15. | 5.2 | 135 |
| 28 | Fast X-ray microdiffraction techniques for studying irreversible transformations in materials. Journal of Synchrotron Radiation, 2011, 18, 464-474. | 2.4 | 16 |
| 29 | 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 |
| 30 | 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 |
| 31 | Size-independent strength and deformation mode in compression of a Pd-based metallic glass. Acta Materialia, 2008, 56, 5091-5100. | 7.9 | 175 |
| 32 | Fracture toughness of bulk metallic glass welds made using nanostructured reactive multilayer foils. Scripta Materialia, 2008, 58, 315-318. | 5.2 | 22 |
| 33 | Selected area nanodiffraction fluctuation electron microscopy for studying structural order in amorphous solids. Scripta Materialia, 2008, 58, 303-306. | 5.2 | 10 |
| 34 | Phase transformations during rapid heating of Al/Ni multilayer foils. Applied Physics Letters, 2008, 93, . | 3.3 | 103 |
| 35 | Mechanical behavior of amorphous alloys. Acta Materialia, 2007, 55, 4067-4109. | 7.9 | 2,919 |
| 36 | Bulk and microscale compressive properties of a Pd-based metallic glass. Scripta Materialia, 2007, 57, 517-520. | 5.2 | 96 |

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|---|---|---|---|
| 37 | Mechanical properties of single electrospun drug-encapsulated nanofibres. Nanotechnology, 2006, 17, 3880-3891. | 2.6 | 179 |
| 38 | Structural aspects of elastic deformation of a metallic glass. Physical Review B, 2006, 73, . | 3.2 | 139 |
| 39 | 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 |
| 40 | Preface to the viewpoint set on mechanical behavior of metallic glasses. Scripta Materialia, 2006, 54, 317-319. | 5.2 | 23 |
| 41 | Quasicrystal formation in Zr-Cu-Ni-Al-Ta metallic glasses and composites. Philosophical Magazine, 2006, 86, 299-307. | 1.6 | 2 |
| 42 | 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 |
| 43 | Thermal and microstructural effects of welding metallic glasses by self-propagating reactions in multilayer foils. Acta Materialia, 2005, 53, 3713-3719. | 7.9 | 61 |
| 44 | 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 |
| 45 | Microstructural study of an oscillatory formation reaction in nanostructured reactive multilayer foils. Applied Physics Letters, 2005, 87, 153108. | 3.3 | 47 |
| 46 | Finding order in disorder. Nature Materials, 2004, 3, 666-667. | 27.5 | 60 |
| 47 | 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 |
| 48 | Structure and Defects on the Nanometer Scale in Metallic Glasses. Microscopy and Microanalysis, 2004, 10, 80-81. | 0.4 | 0 |
| 49 | Joining bulk metallic glass using reactive multilayer foils. Scripta Materialia, 2003, 48, 1575-1580. | 5.2 | 129 |
| 50 | Microstructural evolution of platinum modified nickel aluminide bond coat during thermal cycling. Surface and Coatings Technology, 2003, 163-164, 25-30. | 4.8 | 91 |
| 51 | Structural and magnetic length scales in amorphous TbFe2. Journal of Magnetism and Magnetic Materials, 2003, 256, 322-327. | 2.3 | 6 |
| 52 | 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 |
| 53 | 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 |
| 54 | 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 |

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|---|---|---|---|
| 55 | Synchrotron Strain Measurements for in situ Formed Metallic Glass Matrix Composites. Materials Research Society Symposia Proceedings, 2003, 806, 326. | 0.1 | 1 |
| 56 | Free volume coalescence and void formation in shear bands in metallic glass. Journal of Applied Physics, 2003, 93, 1432-1437. | 2.5 | 193 |
| 57 | Short- and medium-range order in(Zr70Cu20Ni10)90â^'xTaxAl10bulk amorphous alloys. Physical Review B, 2003, 67, . | 3.2 | 61 |
| 58 | Metallic glass fluid flow during welding using self-propagating reactive multilayer foils. Materials Research Society Symposia Proceedings, 2003, 806, 7. | 0.1 | 1 |
| 59 | Using Fluctuation Microscopy to Characterize Structural Order in Metallic Glasses. Microscopy and Microanalysis, 2003, 9, 509-515. | 0.4 | 61 |
| 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 | 187 |
| 61 | Metallic glass matrix composite with precipitated ductile reinforcement. Applied Physics Letters, 2002, 81, 1020-1022. | 3.3 | 330 |
| 62 | Deformation and Failure of Zr<sub>57</sub>Ti<sub>5</sub>Cu<sub>20</sub>Ni<sub>8</sub>Al<sub>10</sub> Bulk Metallic Glass Under Quasi-static and Dynamic Compression. Journal of Materials Research, 2002, 17, 1441-1445. | 2.6 | 172 |
| 63 | Effect of Loading Rate on Failure in Bulk Metallic Glasses. Materials Research Society Symposia Proceedings, 2002, 754, 1. | 0.1 | 0 |
| 64 | 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 |
| 65 | Characterization of nanometer-scale defects in metallic glasses by quantitative high-resolution transmission electron microscopy. Physical Review B, 2002, 65, . | 3.2 | 158 |
| 66 | 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 |
| 67 | Controlling shear band behavior in metallic glasses through microstructural design. Intermetallics, 2002, 10, 1163-1166. | 3.9 | 130 |
| 68 | 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 |
| 69 | Medium-Range Order in Metallic Glasses Studied by Fluctuation Microscopy. Microscopy and Microanalysis, 2001, 7, 1260-1261. | 0.4 | 14 |
| 70 | Enhanced plastic strain in Zr-based bulk amorphous alloys. Physical Review B, 2001, 64, . | 3.2 | 255 |
| 71 | Plastic Deformation of Bulk Amorphous Alloys. Materials Research Society Symposia Proceedings, 2000, 644, 1171. | 0.1 | 0 |
| 72 | 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 |

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| 73 | Development of shear band structure during deformation of a Zr57Ti5Cu20Ni8Al10 bulk metallic glass. Scripta Materialia, 2000, 43, 1071-1075. | 5.2 | 118 |
| 74 | Relation between short-range order and crystallization behavior in Zr-based amorphous alloys. Applied Physics Letters, 2000, 77, 1970-1972. | 3.3 | 138 |
| 75 | Preparation and Mechanical Properties of Hafnium-based Bulk Metallic Glasses. Materials Research Society Symposia Proceedings, 2000, 644, 12161. | 0.1 | 0 |
| 76 | Effect of annealing on Y/Mo multilayers. Journal of Applied Physics, 1999, 86, 2459-2463. | 2.5 | 4 |
| 77 | Structural evolution during deposition of epitaxial Fe/Pt(001) multilayers. Journal of Applied Physics, 1999, 85, 2609-2616. | 2.5 | 26 |
| 78 | Short-Range Order and Nanocrystallization in Amorphous Zr-Ti-Cu-Ni-Al. Materials Research Society Symposia Proceedings, 1999, 580, 381. | 0.1 | 3 |
| 79 | 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 |
| 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 | 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 |
| 82 | Structural anisotropy in amorphous Fe-Tb thin films. Physical Review B, 1996, 53, 12024-12030. | 3.2 | 24 |
| 83 | Amorphous alloys formed by solid state reaction. Journal of Alloys and Compounds, 1993, 194, 221-227. | 5.5 | 24 |
| 84 | TEM analysis of Coâ€“Gd and Coâ€“Gd multilayer structures. Journal of Materials Research, 1993, 8, 771-774. | 2.6 | 31 |
| 85 | Observation of a rapid amorphization reaction. Journal of Materials Research, 1992, 7, 1976-1979. | 2.6 | 22 |
| 86 | Structural Characterization of Multilayers Using X-ray Diffraction. Materials Research Society Symposia Proceedings, 1991, 239, 475. | 0.1 | 3 |