Jeffrey W Kysar

List of Publications by Year
in descending order

87 papers	22,207 citations	156536 32 h-index	62345 84 g-index
89 all docs	89 docs citations	89 times ranked	31506 citing authors

#	Article	IF	Citations
1	Drug delivery device for the inner ear: ultra-sharp fully metallic microneedles. Drug Delivery and Translational Research, 2021, 11, 214-226.	3.0	37
2	Grain size dependence of polycrystalline plasticity modeling in cylindrical indentation. Computational Mechanics, 2021, 68, 499-543.	2.2	5
3	Novel 3D-printed hollow microneedles facilitate safe, reliable, and informative sampling of perilymph from guinea pigs. Hearing Research, 2021, 400, 108141.	0.9	43
4	A Novel 3D-Printed Head Holder for Guinea Pig Ear Surgery. Otology and Neurotology, 2021, 42, e1197-e1202.	0.7	4
5	Simulation assisted design for microneedle manufacturing: Computational modeling of two-photon templated electrodeposition. Journal of Manufacturing Processes, 2021, 66, 211-219.	2.8	5
6	Impact of Systemic versus Intratympanic Dexamethasone Administration on the Perilymph Proteome. Journal of Proteome Research, 2021, 20, 4001-4009.	1.8	9
7	Membrane curvature and connective fiber alignment in guinea pig round window membrane. Acta Biomaterialia, 2021, 136, 343-362.	4.1	7
8	Design optimization of a cardiovascular stent with application to a balloon expandable prosthetic heart valve. Materials and Design, 2021, 209, 109977.	3.3	10
9	3D-Printed Microneedles Create Precise Perforations in Human Round Window Membrane in Situ. Otology and Neurotology, 2020, 41, 277-284.	0.7	29
10	Anatomical and Functional Consequences of Microneedle Perforation of Round Window Membrane. Otology and Neurotology, 2020, 41, e280-e287.	0.7	24
11	Imaging strain-localized excitons in nanoscale bubbles of monolayer WSe2 at room temperature. Nature Nanotechnology, 2020, 15, 854-860.	15.6	134
12	Plane strain deformation by slip in FCC crystals. International Journal of Plasticity, 2020, 133, 102842.	4.1	5
13	Inner ear gene delivery: vectors and routes. Hearing, Balance and Communication, 2020, 18, 278-285.	0.1	16
14	Facile and quantitative estimation of strain in nanobubbles with arbitrary symmetry in 2D semiconductors verified using hyperspectral nano-optical imaging. Journal of Chemical Physics, 2020, 153, 024702.	1.2	27
15	Inner ear delivery<scp>:</scp> Challenges and opportunities. Laryngoscope Investigative Otolaryngology, 2020, 5, 122-131.	0.6	56
16	Order in polycrystalline plasticity deformation fields: Short-range intermittency and long-range persistency. International Journal of Plasticity, 2020, 128, 102674.	4.1	6
17	Mechanical considerations for polymeric heart valve development: Biomechanics, materials, design and manufacturing. Biomaterials, 2019, 225, 119493.	5.7	58
18	Plastic strain recovery in nanocrystalline copper thin films. International Journal of Plasticity, 2018, 107, 27-53.	4.1	3

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19	Experimental validation of plastic constitutive hardening relationship based upon the direction of the Net Burgers Density Vector. Journal of the Mechanics and Physics of Solids, 2018, 111, 358-374.	2.3	7
20	In-vitro perforation of the round window membrane via direct 3-D printed microneedles. Biomedical Microdevices, 2018, 20, 47.	1.4	51
21	Silver/silver chloride microneedles can detect penetration through the round window membrane. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2017, 105, 307-311.	1.6	17
22	Review Article: Case studies in future trends of computational and experimental nanomechanics. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2017, 35, .	0.9	12
23	The Functional Response of Mesenchymal Stem Cells to Electronâ€Beam Patterned Elastomeric Surfaces Presenting Micrometer to Nanoscale Heterogeneous Rigidity. Advanced Materials, 2017, 29, 1702119.	11.1	23
24	Atomistically derived cohesive zone model of intergranular fracture in polycrystalline graphene. Journal of Applied Physics, 2016, 119, 245107.	1.1	18
25	A dual wedge microneedle for sampling of perilymph solution via round window membrane. Biomedical Microdevices, 2016, 18, 24.	1.4	20
26	Serrated needle design facilitates precise round window membrane perforation. Journal of Biomedical Materials Research - Part A, 2016, 104, 1633-1637.	2.1	19
27	Recoverable Slippage Mechanism in Multilayer Graphene Leads to Repeatable Energy Dissipation. ACS Nano, 2016, 10, 1820-1828.	7.3	112
28	In Situ NANO-Indentation of Round Window Membrane. Conference Proceedings of the Society for Experimental Mechanics, 2016, , 17-29.	0.3	2
29	Enhanced Glassy State Mechanical Properties of Polymer Nanocomposites via Supramolecular Interactions. Nano Letters, 2015, 15, 5465-5471.	4.5	54
30	Microperforations Significantly Enhance Diffusion Across Round Window Membrane. Otology and Neurotology, 2015, 36, 694-700.	0.7	40
31	Computational strain gradient crystal plasticity. Journal of the Mechanics and Physics of Solids, 2014, 62, 31-47.	2.3	46
32	Microanatomic Analysis of the Round Window Membrane by White Light Interferometry and Microcomputed Tomography for Mechanical Amplification. Otology and Neurotology, 2014, 35, 672-678.	0.7	17
33	Length-scale effect due to periodic variation of geometrically necessary dislocation densities. International Journal of Plasticity, 2013, 41, 189-201.	4.1	31
34	Nonlinear elastic behavior of two-dimensional molybdenum disulfide. Physical Review B, 2013, 87, .	1.1	400
35	High-Strength Chemical-Vaporâ€"Deposited Graphene and Grain Boundaries. Science, 2013, 340, 1073-1076.	6.0	753
36	Monolithic integration of nanoscale tensile specimens and MEMS structures. Nanotechnology, 2013, 24, 165502.	1.3	17

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37	Experimental validation of multiscale modeling of indentation of suspended circular graphene membranes. International Journal of Solids and Structures, 2012, 49, 3201-3209.	1.3	46
38	Mechanical Properties of Thin Glassy Polymer Films Filled with Spherical Polymer-Grafted Nanoparticles. Nano Letters, 2012, 12, 3909-3914.	4.5	131
39	CHAPTER 5. Microfabrication of Nanoporous Gold. RSC Nanoscience and Nanotechnology, 2012, , 69-96.	0.2	1
40	Wedge indentation into elasticâ€"plastic single crystals. 2: Simulations for face-centered cubic crystals. International Journal of Plasticity, 2012, 28, 70-87.	4.1	25
41	Fabrication of crack-free blanket nanoporous gold thin films by galvanostatic dealloying. Journal of Alloys and Compounds, 2011, 509, 6374-6381.	2.8	42
42	Residual plastic strain recovery driven by grain boundary diffusion in nanocrystalline thin films. Acta Materialia, 2011, 59, 3937-3945.	3.8	25
43	Fabrication of crack-free nanoporous gold blanket thin films by potentiostatic dealloying. Scripta Materialia, 2010, 63, 1005-1008.	2.6	34
44	Experimental lower bounds on geometrically necessary dislocation density. International Journal of Plasticity, 2010, 26, 1097-1123.	4.1	165
45	Dynamic Material Response of Aluminum Single Crystal Under Microscale Laser Shock Peening. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 2009, 131, .	1.3	10
46	Spatially Resolved Characterization of Geometrically Necessary Dislocation Dependent Deformation in Microscale Laser Shock Peening. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 2009, 131, .	1.3	6
47	Fracture in electrophoretically deposited CdSe nanocrystal films. Journal of Applied Physics, 2009, 105, .	1.1	19
48	Elastic and frictional properties of graphene. Physica Status Solidi (B): Basic Research, 2009, 246, 2562-2567.	0.7	333
49	Grain boundary response of aluminum bicrystal under micro scale laser shock peening. International Journal of Solids and Structures, 2009, 46, 3323-3335.	1.3	22
50	Nanoporous Metals by Alloy Corrosion: Formation and Mechanical Properties. MRS Bulletin, 2009, 34, 577-586.	1.7	264
51	Nonlinear elastic behavior of graphene:<i>Ab initio</i>calculations to continuum description. Physical Review B, 2009, 80, .	1.1	364
52	Comparative study of symmetric and asymmetric deformation of Al single crystal under microscale laser shock peening. Journal of Mechanics of Materials and Structures, 2009, 4, 89-105.	0.4	7
53	Analytical solution of anisotropic plastic deformation induced by micro-scale laser shock peening. Mechanics of Materials, 2008, 40, 100-114.	1.7	35
54	Size effects on void growth in single crystals with distributed voids. International Journal of Plasticity, 2008, 24, 688-701.	4.1	74

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55	Measurement of the Elastic Properties and Intrinsic Strength of Monolayer Graphene. Science, 2008, 321, 385-388.	6.0	17,513
56	Direct comparison between experiments and computations at the atomic length scale: a case study of graphene. Scientific Modeling and Simulation SMNS, 2008, 15, 143-157.	0.8	6
57	Spatially Resolved Characterization of Geometrically Necessary Dislocation Dependent Deformation in Micro-Scale Laser Shock Peening. , 2008, , .		0
58	Microscale laser peen forming of single crystal. Journal of Applied Physics, 2008, 103, 063525.	1.1	14
59	Response of Thin Films and Substrate to Micro-Scale Laser Shock Peening. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 2007, 129, 485-496.	1.3	7
60	Study of anisotropic character induced by microscale laser shock peening on a single crystal aluminum. Journal of Applied Physics, 2007, 101, 024904.	1.1	15
61	Strain gradient crystal plasticity analysis of a single crystal containing a cylindrical void. International Journal of Solids and Structures, 2007, 44, 6382-6397.	1.3	20
62	Cylindrical void in a rigid-ideally plastic single crystal III: Hexagonal close-packed crystal. International Journal of Plasticity, 2007, 23, 592-619.	4.1	27
63	Influence of ultrasonic irradiation on the microstructure of Cu/Al2O3, CeO2 nanocomposite thin films during electrocodeposition. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2007, 447, 209-216.	2.6	40
64	The mean free path of dislocations in nanoparticle and nanorod reinforced metal composites and implication for strengthening mechanisms. Mechanics Research Communications, 2007, 34, 275-282.	1.0	17
65	High strain gradient plasticity associated with wedge indentation into face-centered cubic single crystals: Geometrically necessary dislocation densities. Journal of the Mechanics and Physics of Solids, 2007, 55, 1554-1573.	2.3	112
66	Microfabrication and mechanical properties of nanoporous gold at the nanoscale. Scripta Materialia, 2007, 56, 437-440.	2.6	123
67	Deformation and fracture behavior of electrocodeposited alumina nanoparticle/copper composite films. Journal of Materials Science, 2007, 42, 5256-5263.	1.7	11
68	Raman Microprobe Analysis of Elastic Strain and Fracture in Electrophoretically Deposited CdSe Nanocrystal Films. Nano Letters, 2006, 6, 175-180.	4.5	34
69	Thermal vibration and apparent thermal contraction of single-walled carbon nanotubes. Journal of the Mechanics and Physics of Solids, 2006, 54, 1206-1236.	2.3	81
70	Numerical analysis of the radial breathing mode of armchair and zigzag single-walled carbon nanotubes under deformation. Journal of Applied Physics, 2006, 100, 124305.	1.1	9
71	Observation of plastic deformation in freestanding single crystal Au nanowires. Applied Physics Letters, 2006, 89, 111916.	1.5	5
72	Comparative study of symmetric and asymmetric deformation of Al single crystal under micro scale laser shock peening. , 2006, , .		1

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73	Fourier analysis of X-ray micro-diffraction profiles to characterize laser shock peened metals. International Journal of Solids and Structures, 2005, 42, 3471-3485.	1.3	11
74	Cylindrical void in a rigid-ideally plastic single crystal. Part I: Anisotropic slip line theory solution for face-centered cubic crystals. International Journal of Plasticity, 2005, 21, 1481-1520.	4.1	85
75	Spatially Resolved Characterization of Residual Stress Induced by Micro Scale Laser Shock Peening. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 2004, 126, 226-236.	1.3	28
76	Characterization of Plastic Deformation Induced by Microscale Laser Shock Peening. Journal of Applied Mechanics, Transactions ASME, 2004, 71, 713-723.	1.1	66
77	Systematical Characterization of Material Response to Microscale Laser Shock Peening. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 2004, 126, 740-749.	1.3	5
78	Energy dissipation mechanisms in ductile fracture. Journal of the Mechanics and Physics of Solids, 2003, 51, 795-824.	2.3	33
79	Spatially resolved characterization of residual stress induced by micro scale laser shock Peening. , 2003, , .		3
80	Brittle to Ductile Transition in Intermetallic Alloys. Materials Research Society Symposia Proceedings, 2002, 753, 1.	0.1	0
81	Crack tip deformation fields in ductile single crystals. Acta Materialia, 2002, 50, 2367-2380.	3.8	73
82	Continuum simulations of directional dependence of crack growth along a copper/sapphire bicrystal interface. Part II: crack tip stress/deformation analysis. Journal of the Mechanics and Physics of Solids, 2001, 49, 1129-1153.	2.3	25
83	Continuum simulations of directional dependence of crack growth along a copper/sapphire bicrystal interface. Part I: experiments and crystal plasticity background. Journal of the Mechanics and Physics of Solids, 2001, 49, 1099-1128.	2.3	56
84	Path of light in near crack tip region in anisotropic medium and under mixed-mode loading. International Journal of Solids and Structures, 2001, 38, 5963-5973.	1.3	3
85	Directional dependence of fracture in copper/sapphire bicrystal. Acta Materialia, 2000, 48, 3509-3524.	3.8	30
86	Effects of strain field on light in crack opening interferometry. International Journal of Solids and Structures, 1998, 35, 33-49.	1.3	15
87	Continuum aspects of directionally dependent cracking of an interface between copper and alumina crystals. Mechanics of Materials, 1996, 23, 271-286.	1.7	17