Guruswami Ravichandran

List of Publications by Year
in descending order

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89 papers	4,120 citations	172457 29 h-index	114465 63 g-index
92 all docs	92 docs citations	92 times ranked	3707 citing authors

#	Article	IF	Citations
1	Dynamic Strength of Iron at High Pressures and Strain Rates. Physical Review Letters, 2022, 128, 015705.	7.8	5
2	Inelastic behavior of tungsten carbide at high pressures. Journal of the Mechanics and Physics of Solids, 2022, 159, 104762.	4.8	6
3	Cell wall and cytoskeletal contributions in single cell biomechanics of Nicotiana tabacum. Quantitative Plant Biology, 2022, 3, .	2.0	0
4	High strain-rate compression behavior of polymeric rod and plate Kelvin lattice structures. Mechanics of Materials, 2022, 166, 104216.	3.2	17
5	Measuring Terzaghiâ€™s effective stress by decoding force transmission in fluid-saturated granular media. Journal of the Mechanics and Physics of Solids, 2022, 165, 104912.	4.8	4
6	An investigation of shock-induced phase transition in soda-lime glass. Journal of Applied Physics, 2022, 131, .	2.5	3
7	Shock compression behavior of stainless steel 316L octet-truss lattice structures. International Journal of Impact Engineering, 2022, 169, 104324.	5.0	8
8	Dynamic Strength of Copper at High Pressures Using Pressure Shear Plate Experiments. Journal of Dynamic Behavior of Materials, 2021, 7, 248-261.	1.7	13
9	Fracture Diodes: Directional Asymmetry of Fracture Toughness. Physical Review Letters, 2021, 126, 025503.	7.8	14
10	Probing the properties and mechanisms of failure waves in soda-lime glass. Journal of Applied Physics, 2021, 129, .	2.5	6
11	Peak states of molybdenum single crystals shock compressed to high stresses. Journal of Applied Physics, 2021, 129, 245906.	2.5	1
12	Cells exploit a phase transition to mechanically remodel the fibrous extracellular matrix. Journal of the Royal Society Interface, 2021, 18, 20200823.	3.4	21
13	Shock structure and spall behavior of porous aluminum. AIP Conference Proceedings, 2020, , .	0.4	3
14	Structure and Biomechanics during Xylem Vessel Transdifferentiation in Arabidopsis thaliana. Plants, 2020, 9, 1715.	3.5	7
15	Shock compression of molybdenum single crystals to 110â€‰GPa: Elasticâ€“plastic deformation and crystal anisotropy. Journal of Applied Physics, 2020, 127, .	2.5	7
16	Pressure-Shear Plate Impact Experiments at High Pressures. Journal of Dynamic Behavior of Materials, 2020, 6, 489-501.	1.7	10
17	Structure of shock waves in particulate composites. Journal of Applied Physics, 2020, 127, .	2.5	6
18	Crack propagation and renucleation in soft brittle hydrogels. International Journal of Fracture, 2020, 222, 37-52.	2.2	7

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19	A minimal mechanosensing model predicts keratocyte evolution on flexible substrates. Journal of the Royal Society Interface, 2020, 17, 20200175.	3.4	6
20	Guiding and Trapping Cracks With Compliant Inclusions for Enhancing Toughness of Brittle Composite Materials. Journal of Applied Mechanics, Transactions ASME, 2020, 87, .	2.2	11
21	Pressure-shear plate impact experiments at very high pressures. AIP Conference Proceedings, 2020, , .	0.4	0
22	Confocal Microscopy and Digital Volume Correlation Methods for Intergranular Force Transmission Experiments. Experimental Techniques, 2019, 43, 457-468.	1.5	2
23	An Experimental Method to Induce and Measure Crack Propagation in Brittle Polymers with Heterogeneities. Conference Proceedings of the Society for Experimental Mechanics, 2019, , 21-23.	0.5	1
24	Modeling of Atomic Force Microscope Contact Experiments on Escherichia coli Bacteria Cellular Systems. Conference Proceedings of the Society for Experimental Mechanics, 2019, , 45-46.	0.5	0
25	Heterodyne transverse velocimetry for pressure-shear plate impact experiments. Journal of Applied Physics, 2018, 123, .	2.5	21
26	Heterodyne diffracted beam photonic Doppler velocimeter (DPDV) for measurement of transverse and normal particle velocities in pressure-shear plate impact experiments. AIP Conference Proceedings, 2018, , .	0.4	1
27	Experimental investigation of the shearing resistance of SODA-Lime glass at pressures of 9â€…GPa and strain rates of 106sâ¯1. AIP Conference Proceedings, 2018, , .	0.4	1
28	Pressure-shear plate impact experiment on soda-lime glass at a pressure of 30 GPa and strain rate of 4Â·107 sâ€“1. AIP Conference Proceedings, 2018, , .	0.4	3
29	Effect of Cohesive Zone Size on Peeling of Heterogeneous Adhesive Tape. Journal of Applied Mechanics, Transactions ASME, 2018, 85, .	2.2	12
30	Plastic Work to Heat Conversion During High-Strain Rate Deformation of Mg and Mg Alloy. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2017, 48, 14-19.	2.2	40
31	Microbuckling of Fibrous Matrices Enables Long Range Cell Mechanosensing. Conference Proceedings of the Society for Experimental Mechanics, 2017, , 135-141.	0.5	1
32	Dynamic Inter-Particle Force Inference in Granular Materials: Method and Application. Experimental Mechanics, 2016, 56, 217-229.	2.0	30
33	Microbuckling of fibrin provides a mechanism for cell mechanosensing. Journal of the Royal Society Interface, 2015, 12, 20150320.	3.4	89
34	Shock Wave Structure in Particulate Composites. Procedia Engineering, 2015, 103, 515-521.	1.2	6
35	Quantifying cell-induced matrix deformation in three dimensions based on imaging matrix fibers. Integrative Biology (United Kingdom), 2015, 7, 1186-1195.	1.3	48
36	A model for compression-weakening materials and the elastic fields due to contractile cells. Journal of the Mechanics and Physics of Solids, 2015, 85, 16-32.	4.8	47

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37	A model coupling plasticity and phase transformation with application to dynamic shear deformation of iron. Mechanics of Materials, 2015, 80, 255-263.	3.2	10
38	Rate Dependent Adhesion Energy and Nonsteady Peeling of Inextensible Tapes. Journal of Applied Mechanics, Transactions ASME, 2014, 81, .	2.2	29
39	Contractile forces regulate cell division in three-dimensional environments. Journal of Cell Biology, 2014, 205, 155-162.	5.2	71
40	Extracting inter-particle forces in opaque granular materials: Beyond photoelasticity. Journal of the Mechanics and Physics of Solids, 2014, 63, 154-166.	4.8	82
41	An experimental investigation of the stability of peeling for adhesive tapes. Mechanics of Materials, 2013, 66, 69-78.	3.2	8
42	Stability of peeling for systems with rate independent decohesion energy. International Journal of Solids and Structures, 2013, 50, 1974-1980.	2.7	7
43	High pressure hugoniot measurements using mach waves. , 2012, , .		1
44	Analysis of nanoindentation of soft materials with an atomic force microscope. Journal of Materials Research, 2012, 27, 229-237.	2.6	44
45	Three-Dimensional Analysis of the Effect of Epidermal Growth Factor on Cell-Cell Adhesion in Epithelial Cell Clusters. Biophysical Journal, 2012, 102, 1323-1330.	0.5	27
46	Three-dimensional Traction Force Microscopy for Studying Cellular Interactions with Biomaterials. Procedia IUTAM, 2012, 4, 144-150.	1.2	5
47	In situ mechanical characterization during deformation of PVC polymeric foams using ultrasonics and digital image correlation. Mechanics of Materials, 2012, 55, 82-88.	3.2	15
48	Stress Field Evolution under Mechanically Simulated Hull Slamming Conditions. Experimental Mechanics, 2012, 52, 107-116.	2.0	10
49	Sandwich Structures. Experimental Mechanics, 2012, 52, 1-2.	2.0	13
50	Three-Dimensional Traction Force Microscopy: A New Tool for Quantifying Cell-Matrix Interactions. PLoS ONE, 2011, 6, e17833.	2.5	208
51	Upstream jetting phenomenon in planar shock wave experiments with ceramic powders. Shock Waves, 2010, 20, 387-393.	1.9	1
52	Application of digital image correlation method to biogel. Polymer Engineering and Science, 2010, 50, 1585-1593.	3.1	18
53	Deformation and crystallization of Zr-based amorphous alloys in homogeneous flow regime. Journal of Materials Research, 2010, 25, 1137-1148.	2.6	7
54	Competing failure mechanisms in thin films: Application to layer transfer. Journal of Applied Physics, 2009, 105, 073514.	2.5	6

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55	Quantifying cellular traction forces in three dimensions. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 22108-22113.	7.1	251
56	Large Deformation of Nitinol Under Shear Dominant Loading. Experimental Mechanics, 2009, 49, 225-233.	2.0	24
57	Transverse Response of Unidirectional Composites Under a Wide Range of Confinements and Strain Rates. , 2009, , 131-152.		0
58	A Note on the Direct Determination of the Confining Pressure of Cylindrical Specimens. Experimental Mechanics, 2008, 48, 375-377.	2.0	11
59	Effect of Poissonâ€™s ratio on crack tip fields and fracture behavior of metallic glasses. Acta Materialia, 2008, 56, 6077-6086.	7.9	48
60	An analysis of nanoindentation in linearly elastic solids. International Journal of Solids and Structures, 2008, 45, 6018-6033.	2.7	144
61	An analysis of nanoindentation in elasto-plastic solids. International Journal of Solids and Structures, 2008, 45, 6399-6415.	2.7	44
62	Fracture through cavitation in a metallic glass. Europhysics Letters, 2008, 83, 66006.	2.0	50
63	Active Materials. Springer Handbooks, 2008, , 159-168.	0.6	1
64	A model for large electrostrictive actuation in ferroelectric single crystals. International Journal of Solids and Structures, 2007, 44, 2053-2065.	2.7	23
65	Three-dimensional Full-field Measurements of Large Deformations in Soft Materials Using Confocal Microscopy and Digital Volume Correlation. Experimental Mechanics, 2007, 47, 427-438.	2.0	203
66	An In Situ Ultrasonic Technique for Simultaneous Measurement of Longitudinal and Shear Wave Speeds in Solids. Experimental Mechanics, 2007, 47, 753-759.	2.0	5
67	Dynamic behavior of selected ceramic powders. International Journal of Impact Engineering, 2006, 32, 1768-1785.	5.0	18
68	Modeling plastic shocks in periodic laminates with gradient plasticity theories. Journal of the Mechanics and Physics of Solids, 2006, 54, 2495-2526.	4.8	17
69	The mechanical response of pure iron at high strain rates under dominant shear. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2006, 432, 191-201.	5.6	95
70	Characterization of domain walls in BaTiO3 using simultaneous atomic force and piezo response force microscopy. Applied Physics Letters, 2006, 88, 102907.	3.3	23
71	Analysis of shear banding in metallic glasses under bending. Acta Materialia, 2005, 53, 4087-4095.	7.9	69
72	Prediction of incipient shear band trajectories in a thick wall cylinder explosion test. Experimental Mechanics, 2005, 45, 447-450.	2.0	0

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73	Transverse Failure in Thick S2-Glass/ Epoxy Fiber-Reinforced Composites. Journal of Composite Materials, 2004, 38, 609-623.	2.4	42
74	Fundamental structure of steady plastic shock waves in metals. Journal of Applied Physics, 2004, 95, 1718-1732.	2.5	72
75	Ferroelectric perovskites for electromechanical actuation. Acta Materialia, 2003, 51, 5941-5960.	7.9	120
76	An experimental investigation of shock wave propagation in periodically layered composites. Journal of the Mechanics and Physics of Solids, 2003, 51, 245-265.	4.8	124
77	Deformation behavior of the Zr41.2Ti13.8Cu12.5Ni10Be22.5 bulk metallic glass over a wide range of strain-rates and temperatures. Acta Materialia, 2003, 51, 3429-3443.	7.9	679
78	Pressure-dependent flow behavior of Zr41.2Ti13.8Cu12.5Ni10Be22.5 bulk metallic glass. Journal of Materials Research, 2003, 18, 2039-2049.	2.6	117
79	Dynamic compressive behavior of unidirectional E-glass/vinylester composites. Journal of Materials Science, 2001, 36, 831-838.	3.7	44
80	Study of mechanical deformation in bulk metallic glass through instrumented indentation. Acta Materialia, 2001, 49, 3781-3789.	7.9	313
81	Failure mode transition in ceramics under dynamic multiaxial compression. International Journal of Fracture, 2000, 101, 141-159.	2.2	104
82	Large strain electrostrictive actuation in barium titanate. Applied Physics Letters, 2000, 77, 1698-1700.	3.3	130
83	Failure Mode Transition in Unidirectional E-Glass/Vinylester Composites under Multiaxial Compression. Journal of Composite Materials, 2000, 34, 2081-2097.	2.4	34
84	Dynamic compressive failure of a glass ceramic under lateral confinement. Journal of the Mechanics and Physics of Solids, 1997, 45, 1303-1328.	4.8	186
85	An Experimental Investigation of Damage Evolution in a Ceramic Matrix Composite. Journal of Engineering Materials and Technology, Transactions of the ASME, 1995, 117, 101-108.	1.4	20
86	Particle-level modeling of dynamic consolidation of Ti-SiC powders. Modelling and Simulation in Materials Science and Engineering, 1995, 3, 771-796.	2.0	27
87	Processing SiC-particulate reinforced titanium-based metal matrix composites by shock wave consolidation. Acta Metallurgica Et Materialia, 1995, 43, 235-250.	1.8	20
88	Dynamic pore collapse in viscoplastic materials. Journal of Applied Physics, 1993, 74, 2425-2435.	2.5	40
89	Application of 3D Traction Force Microscopy to Mechanotransduction of Cell Clusters. Applied Mechanics and Materials, 0, 70, 21-27.	0.2	1