K Jimmy Hsia

List of Publications by Year
in descending order

104 papers	4,064 citations	101543 36 h-index	128289 60 g-index
111 all docs	111 docs citations	111 times ranked	4989 citing authors

#	Article	IF	Citations
1	Ferroptosis induces membrane blebbing in placental trophoblasts. Journal of Cell Science, 2022, 135, .	2.0	28
2	Fabricating Tissues In Situ with the Controlled Cellular Alignments. Advanced Healthcare Materials, 2022, 11, e2100934.	7.6	8
3	Chloroplast membrane lipid remodeling protects against dehydration by limiting membrane fusion and distortion. Plant Physiology, 2022, 188, 526-539.	4.8	12
4	Thermodynamic Modeling of Solvent-Assisted Lipid Bilayer Formation Process. Micromachines, 2022, 13, 134.	2.9	5
5	Cell alignment modulated by surface nano-topography â€" Roles of cell-matrix and cell-cell interactions. Acta Biomaterialia, 2022, 142, 149-159.	8.3	15
6	Assessing hypoxic damage to placental trophoblasts by measuring membrane viscosity of extracellular vesicles. Placenta, 2022, 121, 14-22.	1.5	2
7	Leaf morphogenesis: The multifaceted roles of mechanics. Molecular Plant, 2022, 15, 1098-1119.	8.3	15
8	Site-specific peroxidation modulates lipid bilayer mechanics. Extreme Mechanics Letters, 2021, 42, 101148.	4.1	18
9	Curvature-regulated lipid membrane softening of nano-vesicles. Extreme Mechanics Letters, 2021, 43, 101174.	4.1	13
10	Role of Membrane Stretch in Adsorption of Antiviral Peptides onto Lipid Membranes and Membrane Pore Formation. Langmuir, 2021, 37, 13390-13398.	3.5	8
11	Kirigamiâ€Inspired Selfâ€Assembly of 3D Structures. Advanced Functional Materials, 2020, 30, 1909888.	14.9	28
12	Organ-on-e-chip: Three-dimensional self-rolled biosensor array for electrical interrogations of human electrogenic spheroids. Science Advances, 2019, 5, eaax0729.	10.3	132
13	Controlled molecular self-assembly of complex three-dimensional structures in soft materials. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 70-74.	7.1	23
14	Differential growth and shape formation in plant organs. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 12359-12364.	7.1	68
15	Effects of notches on the deformation behavior of submicron sized metallic glasses: Insights from in situ experiments. Acta Materialia, 2018, 154, 172-181.	7.9	28
16	Bio-inspired soft robotics: Material selection, actuation, and design. Extreme Mechanics Letters, 2018, 22, 51-59.	4.1	247
17	Selfâ€Folded Gripperâ€Like Architectures from Stimuliâ€Responsive Bilayers. Advanced Materials, 2018, 30, e1801669.	21.0	53
18	Formation and size distribution of self-assembled vesicles. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 2910-2915.	7.1	113

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19	Bifurcation of self-folded polygonal bilayers. Applied Physics Letters, 2017, 111, .	3.3	13
20	Cell migration and organization in threeâ€dimensional in vitro culture driven by stiffness gradient. Biotechnology and Bioengineering, 2016, 113, 2496-2506.	3.3	29
21	Programmable shape transformation of elastic spherical domes. Soft Matter, 2016, 12, 6184-6195.	2.7	28
22	Future Trends of Micro/Nano Cell and Molecule-Based Biosensors. , 2016, , 229-240.		0
23	Thin film wrinkling by strain mismatch on 3D surfaces. Extreme Mechanics Letters, 2016, 8, 107-113.	4.1	9
24	Mismatch strain programmed shape transformation of curved bilayer-flexible support assembly. Extreme Mechanics Letters, 2016, 7, 34-41.	4.1	17
25	Colloidal Particles that Rapidly Change Shape via Elastic Instabilities. Small, 2015, 11, 6051-6057.	10.0	24
26	Mechanically and Chemically Robust Sandwich-Structured C@Si@C Nanotube Array Li-Ion Battery Anodes. ACS Nano, 2015, 9, 1985-1994.	14.6	119
27	Programming matter through strain. Extreme Mechanics Letters, 2015, 3, 8-16.	4.1	25
28	Myoblast alignment on 2D wavy patterns: Dependence on feature characteristics and cellâ€cell interaction. Biotechnology and Bioengineering, 2014, 111, 1617-1626.	3.3	19
29	Bistable characteristics of thick-walled axisymmetric domes. International Journal of Solids and Structures, 2014, 51, 2590-2597.	2.7	33
30	Precision Structural Engineering of Self-Rolled-up 3D Nanomembranes Guided by Transient Quasi-Static FEM Modeling. Nano Letters, 2014, 14, 6293-6297.	9.1	55
31	Biosensor recording of extracellular potentials in the taste epithelium for bitter detection. Sensors and Actuators B: Chemical, 2013, 176, 497-504.	7.8	37
32	3D hierarchical architectures based on self-rolled-up silicon nitride membranes. Nanotechnology, 2013, 24, 475301.	2.6	56
33	Extracellular potentials recording in intact taste epithelium by microelectrode array for a taste sensor. Biosensors and Bioelectronics, 2013, 43, 186-192.	10.1	36
34	Bioelectronic tongue of taste buds on microelectrode array for salt sensing. Biosensors and Bioelectronics, 2013, 40, 115-120.	10.1	42
35	Impedance sensing and molecular modeling of an olfactory biosensor based on chemosensory proteins of honeybee. Biosensors and Bioelectronics, 2013, 40, 174-179.	10.1	61
36	Microelectrode recording of tissue neural oscillations for a bionic olfactory biosensor. Journal of Bionic Engineering, 2012, 9, 494-500.	5.0	5

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37	Olfactory epithelium biosensor: odor discrimination of receptor neurons from a bio-hybrid sensing system. Biomedical Microdevices, 2012, 14, 1055-1061.	2.8	17
38	Chemomechanics control of tearing paths in graphene. Physical Review B, 2012, 85, .	3.2	33
39	Effects of tip-nanotube interactions on atomic force microscopy imaging of carbon nanotubes. Nano Research, 2012, 5, 235-247.	10.4	15
40	â€œLivingâ€•Microvascular Stamp for Patterning of Functional Neovessels; Orchestrated Control of Matrix Property and Geometry. Advanced Materials, 2012, 24, 58-63.	21.0	62
41	Strain-Induced Self-rolling of Semiconductor Membranes: Effect of Geometry, Energetics, and Kinetics. , 2011, , .		0
42	Separating Beads and Cells in Multi-channel Microfluidic Devices Using Dielectrophoresis and Laminar Flow. Journal of Visualized Experiments, 2011, , .	0.3	7
43	Geometry Effect on the Strain-Induced Self-Rolling of Semiconductor Membranes. Nano Letters, 2010, 10, 3927-3932.	9.1	119
44	Coordinated buckling of thick multi-walled carbon nanotubes under uniaxial compression. Nano Research, 2010, 3, 32-42.	10.4	22
45	Capillary induced self-assembly of thin foils into 3Dstructures. Journal of the Mechanics and Physics of Solids, 2010, 58, 2033-2042.	4.8	33
46	Thermal dissipation and variability in electrical breakdown of carbon nanotube devices. Physical Review B, 2010, 82, .	3.2	89
47	Measurement of adherent cell mass and growth. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 20691-20696.	7.1	186
48	A divide and conquer real space finite-element Hartreeâ€“Fock method. Journal of Chemical Physics, 2010, 132, 034101.	3.0	29
49	Effect of Microstructural Parameters on the Machinability of Aligned Carbon Nanotube Composites. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 2010, 132, .	2.2	9
50	Fast Spreading of Liquid SnPb Solder on Gold-coated Copper Wheel Pattern. Journal of Materials Science and Technology, 2010, 26, 1143-1147.	10.7	2
51	Cells into Systems. Mechanical Engineering, 2010, 132, 30-34.	0.1	3
52	Two- and three-dimensional folding of thin film single-crystalline silicon for photovoltaic power applications. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 20149-20154.	7.1	198
53	Effect of Carbon Nanotube (CNT) Loading on the Thermomechanical Properties and the Machinability of CNT-Reinforced Polymer Composites. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 2009, 131, .	2.2	46
54	Effect of Microstructural Parameters on the Machinability of Aligned Carbon Nanotube Composites. , 2009, , .		0

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55	Molecular dynamics simulations of ion-irradiation induced deflection of 2D graphene films. International Journal of Solids and Structures, 2008, 45, 3908-3917.	2.7	17
56	Effect of Carbon Nanotube (CNT) Loading on the Thermo-Mechanical Properties and the Machinability of CNT-Reinforced Polymer Composites. , 2008, , .		1
57	Transition states and minimum energy pathways for the collapse of carbon nanotubes. Physical Review B, 2006, 73, .	3.2	73
58	Experimental Investigation of the Machinability of Polycarbonate Reinforced With Multiwalled Carbon Nanotubes. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 2006, 128, 465-473.	2.2	33
59	<i>In Situ</i> Xâ€Ray Diffraction Study of Electricâ€Fieldâ€Induced Domain Switching and Phase Transition in PZTâ€5H. Journal of the American Ceramic Society, 2005, 88, 210-215.	3.8	44
60	Rumpling instability in thermal barrier systems under isothermal conditions in vacuum. Philosophical Magazine, 2005, 85, 45-64.	1.6	26
61	Collapse of stamps for soft lithography due to interfacial adhesion. Applied Physics Letters, 2005, 86, 154106.	3.3	101
62	Driving Forces for Interfacial Fatigue Crack Growth by Piezoelectric Actuator. Journal of Intelligent Material Systems and Structures, 2005, 16, 557-566.	2.5	3
63	Stamp Collapse in Soft Lithography. Langmuir, 2005, 21, 8058-8068.	3.5	201
64	Evolution of surface waviness in thin films via volume and surface diffusion. Journal of Applied Physics, 2005, 97, 013521.	2.5	52
65	Experimental Investigation of the Machinabilty of Polycarbonate Reinforced With Multiwalled Carbon Nanotubes. , 2005, , .		0
66	How do slender mineral crystals resist buckling in biological materials?. Philosophical Magazine Letters, 2004, 84, 631-641.	1.2	35
67	Finite element implementation of virtual internal bond model for simulating crack behavior. Engineering Fracture Mechanics, 2004, 71, 401-423.	4.3	44
68	Vertical pâ€"iâ€"n Polysilicon Diode With Antifuse for Stackable Field-Programmable ROM. IEEE Electron Device Letters, 2004, 25, 271-273.	3.9	35
69	Fracture Simulation Using an Elasto-Viscoplastic Virtual Internal Bond Model With Finite Elements. Journal of Applied Mechanics, Transactions ASME, 2004, 71, 796-804.	2.2	26
70	Experimental investigation of the bond-coat rumpling instability under isothermal and cyclic thermal histories in thermal barrier systems. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2004, 460, 1957-1979.	2.1	26
71	A study of microbend test by strain gradient plasticity. International Journal of Plasticity, 2003, 19, 365-382.	8.8	97
72	Bond coat surface rumpling in thermal barrier coatings. Acta Materialia, 2003, 51, 239-249.	7.9	87

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73	Stress generation mechanisms in carbon thin films grown by ion-beam deposition. Acta Materialia, 2003, 51, 5211-5222.	7.9	61
74	Interfacial cracks between piezoelectric and elastic materials under in-plane electric loading. Journal of the Mechanics and Physics of Solids, 2003, 51, 921-944.	4.8	43
75	Locking of electric-field-induced non-180Â° domain switching and phase transition in ferroelectric materials upon cyclic electric fatigue. Applied Physics Letters, 2003, 83, 3978-3980.	3.3	38
76	Influence of surface morphology on the adhesion strength of epoxyâ€"aluminum interfaces. Journal of Adhesion Science and Technology, 2003, 17, 1685-1711.	2.6	40
77	Effect of native Al2O3 on the elastic response of nanoscale Al films. Acta Materialia, 2002, 50, 2779-2786.	7.9	64
78	Potential flow model of cavitation-induced interfacial fracture in a confined ductile layer. Journal of the Mechanics and Physics of Solids, 2002, 50, 549-569.	4.8	8
79	Modeling the Fracture of a Sandwich Structure due to Cavitation in a Ductile Adhesive Layer. Journal of Applied Mechanics, Transactions ASME, 2001, 68, 93-100.	2.2	19
80	Piezoelectric actuation of crack growth along polymerâ€"metal interfaces in adhesive bonds. Journal of Materials Research, 2001, 16, 2885-2892.	2.6	16
81	On the spacing between dislocation nucleation sources at crack tips. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2001, 317, 257-263.	5.6	2
82	Fracture and domain switching by indentation in barium titanate single crystals. Scripta Materialia, 2001, 44, 207-212.	5.2	44
83	The influence of multiple slip systems on the brittleâ€"ductile transition in silicon. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 1999, 272, 422-430.	5.6	12
84	Oscillatory crack growth in glass. Scripta Materialia, 1999, 41, 275-281.	5.2	21
85	A Numerical Solution of a Surface Crack Under Cyclic Hydraulic Pressure Loading. Journal of Tribology, 1997, 119, 637-645.	1.9	8
86	DISCUSSION ON THE â€œCOMMENT ON THE â€˜SIMULATION OF THE BRITTLE-DUCTILE TRANSITION IN SILICON SINGLE CRYSTALS USING DISLOCATION MECHANICSâ€™â€• Scripta Materialia, 1997, 37, 1905-1907.	5.2	1
87	Simulation of the brittle-ductile transition in silicon single crystals using dislocation mechanics. Acta Materialia, 1997, 45, 1747-1759.	7.9	23
88	The effects of grain size distribution on cavity nucleation and creep deformation in ceramics containing viscous grain boundary phase. Acta Materialia, 1997, 45, 4117-4129.	7.9	9
89	A technique to generate straight through thickness surface cracks and its application to studying dislocation nucleation in Si. Acta Materialia, 1996, 44, 845-853.	7.9	16
90	The mathematical framework and an approximate solution of surface crack propagation under hydraulic pressure loading. International Journal of Fracture, 1996, 78, 363-378.	2.2	7

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91	Tensile Creep Behavior of a Vitreous-Bonded Aluminum Oxide under Static and Cyclic Loading. Journal of the American Ceramic Society, 1996, 79, 2353-2363.	3.8	8
92	Quantitative Characterization of the Fracture Surface of Si Single Crystals by Confocal Microscopy. Journal of the American Ceramic Society, 1995, 78, 3201-3208.	3.8	20
93	Modeling static and cyclic fatigue in ceramics containing a viscous grain boundary phase. Acta Metallurgica Et Materialia, 1995, 43, 2163-2175.	1.8	14
94	A Yield Surface Approach to the Estimation of Notch Strains for Proportional and Nonproportional Cyclic Loading. Journal of Engineering Materials and Technology, Transactions of the ASME, 1994, 116, 173-180.	1.4	80
95	Numerical simulation of semi-crystalline nylon 6: elastic constants of crystalline and amorphous parts. Journal of Materials Science, 1994, 29, 1601-1611.	3.7	5
96	Experimental study of the mechanisms of brittle-to-ductile transition of cleavage fracture in Si single crystals. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 1994, 176, 111-119.	5.6	44
97	Modelling of dislocation mobility controlled brittle-to-ductile transition. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 1994, 176, 155-164.	5.6	33
98	Cleavage due to dislocation confinement in layered materials. Journal of the Mechanics and Physics of Solids, 1994, 42, 877-896.	4.8	83
99	Effects of grain boundary sliding â€¦ Mech. Mater. 11, 43â€"62 and Modeling of creep damage evolution â€¦ Mech. Mater. 11, 19â€"42. Mechanics of Materials, 1993, 14, 313-315.	3.2	1
100	Dominant Creep Failure Process in Tensile Components. Journal of Engineering Materials and Technology, Transactions of the ASME, 1992, 114, 255-264.	1.4	2
101	Modeling of creep damage evolution around blunt notches and sharp cracks. Mechanics of Materials, 1991, 11, 19-42.	3.2	26
102	Effects of grain boundary sliding on creep-constrained boundary cavitation and creep deformation. Mechanics of Materials, 1991, 11, 43-62.	3.2	44
103	Brittle crack propagation in silicon single crystals. Journal of Applied Physics, 1991, 70, 758-771.	2.5	43
104	Cell Alignment Modulated by Surface Nano-TopographyÂâ€"ÂRoles of Cell-Matrix and Cell-Cell Interactions. SSRN Electronic Journal, 0, , .	0.4	0