Rui Xiao

List of Publications by Year
in descending order

75	2,798	25	51
papers	citations	h-index	g-index
		236833	182361

75	75	75	2746
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Self-Folding Thermo-Magnetically Responsive Soft Microgrippers. ACS Applied Materials & Interfaces, 2015, 7, 3398-3405.	4.0	499
2	Bioâ€Origami Hydrogel Scaffolds Composed of Photocrosslinked PEG Bilayers. Advanced Healthcare Materials, 2013, 2, 1142-1150.	3.9	210
3	Functional stimuli responsive hydrogel devices by self-folding. Smart Materials and Structures, 2014, 23, 094008.	1.8	137
4	Mechanically Robust and UVâ€Curable Shapeâ€Memory Polymers for Digital Light Processing Based 4D Printing. Advanced Materials, 2021, 33, e2101298.	11.1	129
5	Water-Responsive Shape Recovery Induced Buckling in Biodegradable Photo-Cross-Linked Poly(ethylene) Tj ETQq1 1 0.784314 rgBT /Ov	7.6	109
6	Modeling the glass transition of amorphous networks for shape-memory behavior. Journal of the Mechanics and Physics of Solids, 2013, 61, 1612-1635.	2.3	106
7	Accelerating solar desalination in brine through ion activated hierarchically porous polyion complex hydrogels. Materials Horizons, 2020, 7, 3187-3195.	6.4	99
8	Solvent-driven temperature memory and multiple shape memory effects. Soft Matter, 2015, 11, 3977-3985.	1.2	80
9	Modeling the thermo-mechanical behavior and constrained recovery performance of cold-programmed amorphous shape-memory polymers. International Journal of Plasticity, 2020, 127, 102654.	4.1	75
10	Heating/Solvent Responsive Shapeâ€Memory Polymers for Implant Biomedical Devices in Minimally Invasive Surgery: Current Status and Challenge. Macromolecular Bioscience, 2020, 20, e2000108.	2.1	69
11	An equivalence between generalized Maxwell model and fractional Zener model. Mechanics of Materials, 2016, 100, 148-153.	1.7	66
12	Modeling the solvent-induced shape-memory behavior of glassy polymers. Soft Matter, 2013, 9, 9455.	1.2	65
13	An effective temperature theory for the nonequilibrium behavior of amorphous polymers. Journal of the Mechanics and Physics of Solids, 2015, 82, 62-81.	2.3	64
14	Constitutive behaviors of tough physical hydrogels with dynamic metal-coordinated bonds. Journal of the Mechanics and Physics of Solids, 2020, 139, 103935.	2.3	56
15	Modeling the multiple shape memory effect and temperature memory effect in amorphous polymers. RSC Advances, 2015, 5, 416-423.	1.7	50
16	A variable-order fractional differential equation model of shape memory polymers. Chaos, Solitons and Fractals, 2017, 102, 473-485.	2.5	49
17	Effect of physical aging on the shape-memory behavior of amorphous networks. Polymer, 2012, 53, 2453-2464.	1.8	46
18	Aging-dependent strain localization in amorphous glassy polymers: From necking to shear banding. International Journal of Solids and Structures, 2018, 146, 203-213.	1.3	45

#	Article	IF	Citations
19	A constitutive model for strain hardening behavior of predeformed amorphous polymers: Incorporating dissipative dynamics of molecular orientation. Journal of the Mechanics and Physics of Solids, 2019, 125, 472-487.	2.3	41
20	Mechanical performance of polystyrene foam (EPS): Experimental and numerical analysis. Polymer Testing, 2019, 73, 359-365.	2.3	37
21	Micromechanical modeling of the multi-axial deformation behavior in double network hydrogels. International Journal of Plasticity, 2021, 137, 102901.	4.1	36
22	A finite deformation fractional viscoplastic model for the glass transition behavior of amorphous polymers. International Journal of Non-Linear Mechanics, 2017, 93, 7-14.	1.4	34
23	A fractional model with parallel fractional Maxwell elements for amorphous thermoplastics. Physica A: Statistical Mechanics and Its Applications, 2018, 490, 465-475.	1.2	32
24	A predictive parameter for the shape memory behavior of thermoplastic polymers. Journal of Polymer Science, Part B: Polymer Physics, 2016, 54, 1405-1414.	2.4	31
25	Unique Recovery Behavior in Amorphous Shapeâ€Memory Polymer Networks. Macromolecular Materials and Engineering, 2012, 297, 1160-1166.	1.7	30
26	Vitrimer-Like Shape Memory Polymers: Characterization and Applications in Reshaping and Manufacturing. Polymers, 2020, 12, 2330.	2.0	24
27	Editing the Shape Morphing of Monocomponent Natural Polysaccharide Hydrogel Films. Research, 2021, 2021, 9786128.	2.8	23
28	The Temperature-Dependent Viscoelastic Behavior of Dielectric Elastomers. Journal of Applied Mechanics, Transactions ASME, 2015, 82, .	1.1	22
29	Optimizing physical aging in poly(ethylene terephthalate)-glycol (PETG). Journal of Non-Crystalline Solids, 2018, 502, 15-21.	1.5	21
30	Optimal design and analysis of deployable antenna truss structure based on dynamic characteristics restraints. Aerospace Science and Technology, 2020, 106, 106086.	2.5	21
31	Damping behavior of 3D woven metallic lattice materials. Scripta Materialia, 2015, 106, 1-4.	2.6	19
32	Modeling Mismatch Strain Induced Self-Folding of Bilayer Gel Structures. International Journal of Applied Mechanics, 2016, 08, 1640004.	1.3	19
33	Fractional viscoelastic models with non-singular kernels. Mechanics of Materials, 2018, 127, 55-64.	1.7	19
34	Thermomechanical coupling in glassy polymers: An effective temperature theory. International Journal of Plasticity, 2022, 156, 103361.	4.1	19
35	Tunable shape-memory behaviors in amorphous polymers through bound solvent. Materials Letters, 2017, 209, 131-133.	1.3	18
36	Modeling energy storage and structural evolution during finite viscoplastic deformation of glassy polymers. Physical Review E, 2017, 95, 063001.	0.8	18

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37	Modeling the mechanical behaviors of multiple network elastomers. Mechanics of Materials, 2021, 161, 103992.	1.7	18
38	Multi-responsive PNIPAMâ€“PEGDA hydrogel composite. Soft Matter, 2021, 17, 10421-10427.	1.2	17
39	An anisotropic constitutive model for 3D printed hydrogel-fiber composites. Journal of the Mechanics and Physics of Solids, 2021, 156, 104611.	2.3	17
40	A Network Evolution Model for Recovery of the Mullins Effect in Filled Rubbers. International Journal of Applied Mechanics, 2020, 12, 2050108.	1.3	17
41	A thermodynamic modeling approach for dynamic softening in glassy amorphous polymers. Extreme Mechanics Letters, 2016, 8, 70-77.	2.0	16
42	Triple-shape memory effect in 3D-printed polymers. EXPRESS Polymer Letters, 2020, 14, 1116-1126.	1.1	16
43	A hyperelastic-damage model based on the strain invariants. Extreme Mechanics Letters, 2022, 52, 101641.	2.0	16
44	Controllable Bending of Bi-hydrogel Strips with Differential Swelling. Acta Mechanica Solida Sinica, 2019, 32, 652-662.	1.0	15
45	A Thermodynamic-Consistent Model for the Thermo-Chemo-Mechanical Couplings in Amorphous Shape-Memory Polymers. International Journal of Applied Mechanics, 2021, 13, 2150022.	1.3	15
46	Modeling the Thermoviscoelastic Properties and Recovery Behavior of Shape Memory Polymer Composites. Journal of Applied Mechanics, Transactions ASME, 2014, 81, .	1.1	14
47	Suppression of electromechanical instability in fiber-reinforced dielectric elastomers. AIP Advances, 2016, 6, 035321.	0.6	14
48	Modeling solvent-activated shape-memory behaviors based on an analogy between solvent and temperature. RSC Advances, 2016, 6, 6378-6383.	1.7	14
49	Controllable shapeâ€memory recovery regions in polymers through mechanical programming. Journal of Applied Polymer Science, 2018, 135, 45909.	1.3	14
50	An Experimental Study on Strain Hardening of Amorphous Thermosets: Effect of Temperature, Strain Rate, and Network Density. Journal of Applied Mechanics, Transactions ASME, 2018, 85, .	1.1	14
51	Modeling Gel Swelling in Binary Solvents: A Thermodynamic Approach to Explaining Cosolvency and Cononsolvency Effects. International Journal of Applied Mechanics, 2019, 11, 1950050.	1.3	14
52	A new viscoâ€“elasto-plastic model via timeâ€“space fractional derivative. Mechanics of Time-Dependent Materials, 2018, 22, 129-141.	2.3	12
53	Tissue Engineering: Bioâ€Origami Hydrogel Scaffolds Composed of Photocrosslinked PEG Bilayers (Adv.) Tj ETQq1 1 0.784314 rgBT /Ov	3.9	11
54	Modeling shape-memory behavior of dielectric elastomers. Europhysics Letters, 2016, 114, 16002.	0.7	11

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55	Hysteresis in glass microsphere filled elastomers under cyclic loading. Polymer Testing, 2021, 95, 107081.	2.3	11
56	A fractional model for time-variant non-Newtonian flow. Thermal Science, 2017, 21, 61-68.	0.5	11
57	Effects of physical aging on thermomechanical behaviors of poly(ethylene terephthalate)-glycol (PETG). Polymer-Plastics Technology and Materials, 2020, 59, 835-846.	0.6	10
58	Thermo-mechanics of Amorphous Shape-memory Polymers. Procedia IUTAM, 2015, 12, 154-161.	1.2	9
59	Modeling the effect of physical aging on the stress response of amorphous polymers based on a two-temperature continuum theory. Mechanics of Materials, 2020, 143, 103335.	1.7	9
60	Generalized finite difference method for a class of multidimensional space-fractional diffusion equations. Computational Mechanics, 2021, 67, 17-32.	2.2	9
61	Glass Transition Behavior of Wet Polymers. Materials, 2021, 14, 730.	1.3	7
62	A Microstructural Damage Model toward Simulating the Mullins Effect in Double-Network Hydrogels. Acta Mechanica Solida Sinica, 2022, 35, 682-693.	1.0	7
63	Temperature memory effect and its stability revealed via differential scanning calorimetry in ethyleneâ€vinyl acetate within glass transition range. Journal of Polymer Science, Part B: Polymer Physics, 2016, 54, 1731-1737.	2.4	6
64	Modeling enthalpy relaxation using the Mittag-Leffler function. Journal of Non-Crystalline Solids, 2017, 465, 17-25.	1.5	6
65	Experimental characterization and finite element modeling the deformation behavior of rubbers with geometry defects. Polymer Testing, 2019, 80, 106111.	2.3	6
66	Physically-based interpretation of abnormal stress relaxation response in glassy polymers. Extreme Mechanics Letters, 2022, 52, 101667.	2.0	6
67	Glass transition in gels. Physical Review Materials, 2021, 5, .	0.9	5
68	Programming of Shape-Memory Polymers. , 2017, , 113-137.		3
69	Modeling the Damage and Self-healing Behaviors of Plasticized PVC Gels. Acta Mechanica Solida Sinica, 2021, 34, 466-476.	1.0	3
70	Effects of cold rolling on the tensile response of glassy polymers: Experiments and modeling. Mechanics of Materials, 2022, 165, 104138.	1.7	3
71	Modeling the rate-dependent ductile-brittle transition in amorphous polymers. Acta Mechanica Sinica/Lixue Xuebao, 2022, 38, .	1.5	3
72	Modeling shape-memory effects in amorphous polymers. Materials Today: Proceedings, 2019, 16, 1462-1468.	0.9	1

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73	Moisture-Responsive Shape Memory Polymers and Their Composites. , 2021, , .		0
74	Shapeâ€Memory Polymers: Mechanically Robust and UVâ€Curable Shapeâ€Memory Polymers for Digital Light Processing Based 4D Printing (Adv. Mater. 27/2021). Advanced Materials, 2021, 33, 2170210.	11.1	0
75	Influence of Mechanical Properties and Loading Conditions on the Recovery of Shape Memory Polymers. Conference Proceedings of the Society for Experimental Mechanics, 2011, , 113-118.	0.3	0