# Zhigang Suo

## List of Publications by Citations



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|---|---|---|---|
| 312 papers | 34,913 citations | 100 h-index | 182 g-index |
| 324 ext. papers | 40,214 ext. citations | 7.5 avg, IF | 7.86 L-index |

| # | Paper | IF | Citations |
|---|---|---|---|
| 312 | Highly stretchable and tough hydrogels. *Nature*, **2012**, 489, 133-6 | 50.4 | 3109 |
| 311 | Stretchable, transparent, ionic conductors. *Science*, **2013**, 341, 984-7 | 33.3 | 1133 |
| 310 | Ionic skin. *Advanced Materials*, **2014**, 26, 7608-14 | 24 | 760 |
| 309 | Interface crack between two elastic layers. *International Journal of Fracture*, **1990**, 43, 1-18 | 2.3 | 704 |
| 308 | Hydrogel ionotronics. *Nature Reviews Materials*, **2018**, 3, 125-142 | 73.3 | 643 |
| 307 | Biomaterials. Electronic dura mater for long-term multimodal neural interfaces. *Science*, **2015**, 347, 159-63 | 33.3 | 640 |
| 306 | Theory of dielectric elastomers. *Acta Mechanica Solida Sinica*, **2010**, 23, 549-578 | 2 | 637 |
| 305 | A theory of coupled diffusion and large deformation in polymeric gels. *Journal of the Mechanics and Physics of Solids*, **2008**, 56, 1779-1793 | 5 | 626 |
| 304 | Foldable Printed Circuit Boards on Paper Substrates. *Advanced Functional Materials*, **2010**, 20, 28-35 | 15.6 | 553 |
| 303 | A transparent bending-insensitive pressure sensor. *Nature Nanotechnology*, **2016**, 11, 472-8 | 28.7 | 549 |
| 302 | . *Proceedings of the IEEE*, **2005**, 93, 1459-1467 | 14.3 | 498 |
| 301 | Macroporous nanowire nanoelectronic scaffolds for synthetic tissues. *Nature Materials*, **2012**, 11, 986-94 | 27 | 494 |
| 300 | Robotic tentacles with three-dimensional mobility based on flexible elastomers. *Advanced Materials*, **2013**, 25, 205-12 | 24 | 457 |
| 299 | Syringe-injectable electronics. *Nature Nanotechnology*, **2015**, 10, 629-636 | 28.7 | 416 |
| 298 | A nonlinear field theory of deformable dielectrics. *Journal of the Mechanics and Physics of Solids*, **2008**, 56, 467-486 | 5 | 403 |
| 297 | Strengthening alginate/polyacrylamide hydrogels using various multivalent cations. *ACS Applied Materials & Interfaces*, **2013**, 5, 10418-22 | 9.5 | 401 |
| 296 | Inhomogeneous swelling of a gel in equilibrium with a solvent and mechanical load. *International Journal of Solids and Structures*, **2009**, 46, 3282-3289 | 3.1 | 371 |

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| 295 | Method to analyze electromechanical stability of dielectric elastomers. *Applied Physics Letters*, **2007**, 91, 061921 | 3.4 | 348 |
| 294 | Sandwich test specimens for measuring interface crack toughness. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **1989**, 107, 135-143 | 5.3 | 338 |
| 293 | Harnessing snap-through instability in soft dielectrics to achieve giant voltage-triggered deformation. *Soft Matter*, **2012**, 8, 285-288 | 3.6 | 321 |
| 292 | Mechanisms of reversible stretchability of thin metal films on elastomeric substrates. *Applied Physics Letters*, **2006**, 88, 204103 | 3.4 | 319 |
| 291 | Highly stretchable and transparent nanomesh electrodes made by grain boundary lithography. *Nature Communications*, **2014**, 5, 3121 | 17.4 | 310 |
| 290 | Metal films on polymer substrates stretched beyond 50%. *Applied Physics Letters*, **2007**, 91, 221909 | 3.4 | 305 |
| 289 | Fracture of electrodes in lithium-ion batteries caused by fast charging. *Journal of Applied Physics*, **2010**, 108, 073517 | 2.5 | 297 |
| 288 | Hybrid Hydrogels with Extremely High Stiffness and Toughness.. *ACS Macro Letters*, **2014**, 3, 520-523 | 6.6 | 291 |
| 287 | Electromechanical hysteresis and coexistent states in dielectric elastomers. *Physical Review B*, **2007**, 76, | 3.3 | 291 |
| 286 | Ultrasound-triggered disruption and self-healing of reversibly cross-linked hydrogels for drug delivery and enhanced chemotherapy. *Proceedings of the National Academy of Sciences of the United States of America*, **2014**, 111, 9762-7 | 11.5 | 282 |
| 285 | 3D Printing of Transparent and Conductive Heterogeneous Hydrogel-Elastomer Systems. *Advanced Materials*, **2017**, 29, 1604827 | 24 | 280 |
| 284 | Lithium-assisted plastic deformation of silicon electrodes in lithium-ion batteries: a first-principles theoretical study. *Nano Letters*, **2011**, 11, 2962-7 | 11.5 | 276 |
| 283 | Highly Stretchable and Tough Hydrogels below Water Freezing Temperature. *Advanced Materials*, **2018**, 30, e1801541 | 24 | 267 |
| 282 | Theory of dielectric elastomers capable of giant deformation of actuation. *Physical Review Letters*, **2010**, 104, 178302 | 7.4 | 257 |
| 281 | Electronic skin: architecture and components. *Physica E: Low-Dimensional Systems and Nanostructures*, **2004**, 25, 326-334 | 3 | 256 |
| 280 | Hydrogel Adhesion: A Supramolecular Synergy of Chemistry, Topology, and Mechanics. *Advanced Functional Materials*, **2020**, 30, 1901693 | 15.6 | 255 |
| 279 | Dielectric Elastomer Generators: How Much Energy Can Be Converted?. *IEEE/ASME Transactions on Mechatronics*, **2011**, 16, 33-41 | 5.5 | 253 |
| 278 | Large Plastic Deformation in High-Capacity Lithium-Ion Batteries Caused by Charge and Discharge. *Journal of the American Ceramic Society*, **2011**, 94, s226-s235 | 3.8 | 248 |

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|---|---|---|---|
| 277 | Giant voltage-induced deformation in dielectric elastomers near the verge of snap-through instability. *Journal of the Mechanics and Physics of Solids*, **2013**, 61, 611-628 | 5 | 246 |
| 276 | A theory of constrained swelling of a pH-sensitive hydrogel. *Soft Matter*, **2010**, 6, 784 | 3.6 | 243 |
| 275 | Stiff, strong, and tough hydrogels with good chemical stability. *Journal of Materials Chemistry B*, **2014**, 2, 6708-6713 | 7.3 | 230 |
| 274 | Stress-relaxation behavior in gels with ionic and covalent crosslinks. *Journal of Applied Physics*, **2010**, 107, 63509 | 2.5 | 230 |
| 273 | Concurrent Reaction and Plasticity during Initial Lithiation of Crystalline Silicon in Lithium-Ion Batteries. *Journal of the Electrochemical Society*, **2012**, 159, A238-A243 | 3.9 | 229 |
| 272 | Maximal energy that can be converted by a dielectric elastomer generator. *Applied Physics Letters*, **2009**, 94, 262902 | 3.4 | 228 |
| 271 | High ductility of a metal film adherent on a polymer substrate. *Applied Physics Letters*, **2005**, 87, 161910 | 3.4 | 228 |
| 270 | Mechanisms of large actuation strain in dielectric elastomers. *Journal of Polymer Science, Part B: Polymer Physics*, **2011**, 49, 504-515 | 2.6 | 215 |
| 269 | Steady-state cracking in brittle substrates beneath adherent films. *International Journal of Solids and Structures*, **1989**, 25, 1337-1353 | 3.1 | 214 |
| 268 | Performance and biocompatibility of extremely tough alginate/polyacrylamide hydrogels. *Biomaterials*, **2013**, 34, 8042-8 | 15.6 | 213 |
| 267 | Electrical breakdown and ultrahigh electrical energy density in poly(vinylidene fluoride-hexafluoropropylene) copolymer. *Applied Physics Letters*, **2009**, 94, 162901 | 3.4 | 211 |
| 266 | Dielectric elastomer actuators under equal-biaxial forces, uniaxial forces, and uniaxial constraint of stiff fibers. *Soft Matter*, **2012**, 8, 6167 | 3.6 | 200 |
| 265 | Transparent hydrogel with enhanced water retention capacity by introducing highly hydratable salt. *Applied Physics Letters*, **2014**, 105, 151903 | 3.4 | 198 |
| 264 | Electrostriction in elastic dielectrics undergoing large deformation. *Journal of Applied Physics*, **2008**, 104, 123530 | 2.5 | 195 |
| 263 | Using indentation to characterize the poroelasticity of gels. *Applied Physics Letters*, **2010**, 96, 121904 | 3.4 | 193 |
| 262 | Highly stretchable and transparent ionogels as nonvolatile conductors for dielectric elastomer transducers. *ACS Applied Materials & Interfaces*, **2014**, 6, 7840-5 | 9.5 | 192 |
| 261 | Mechanics and chemical thermodynamics of phase transition in temperature-sensitive hydrogels. *Journal of the Mechanics and Physics of Solids*, **2011**, 59, 2259-2278 | 5 | 192 |
| 260 | Large deformation and electrochemistry of polyelectrolyte gels. *Journal of the Mechanics and Physics of Solids*, **2010**, 58, 558-577 | 5 | 192 |

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| 259 | Electroluminescence of Giant Stretchability. *Advanced Materials*, **2016**, 28, 4480-4 | 24 | 183 |
| 258 | Buckling of Elastomeric Beams Enables Actuation of Soft Machines. *Advanced Materials*, **2015**, 27, 6323-7 | 24 | 182 |
| 257 | The effect of film thickness on the failure strain of polymer-supported metal films. *Acta Materialia*, **2010**, 58, 1679-1687 | 8.4 | 178 |
| 256 | Formation of creases on the surfaces of elastomers and gels. *Applied Physics Letters*, **2009**, 95, 111901 | 3.4 | 177 |
| 255 | Kinetics of initial lithiation of crystalline silicon electrodes of lithium-ion batteries. *Nano Letters*, **2012**, 12, 5039-47 | 11.5 | 175 |
| 254 | Topological Adhesion of Wet Materials. *Advanced Materials*, **2018**, 30, e1800671 | 24 | 173 |
| 253 | A soft, bistable valve for autonomous control of soft actuators. *Science Robotics*, **2018**, 3, | 18.6 | 169 |
| 252 | Mechanics of stretchable electronics and soft machines. *MRS Bulletin*, **2012**, 37, 218-225 | 3.2 | 166 |
| 251 | Model of dissipative dielectric elastomers. *Journal of Applied Physics*, **2012**, 111, 034102 | 2.5 | 162 |
| 250 | Resonant behavior of a membrane of a dielectric elastomer. *International Journal of Solids and Structures*, **2010**, 47, 3254-3262 | 3.1 | 161 |
| 249 | Poroelastic swelling kinetics of thin hydrogel layers: comparison of theory and experiment. *Soft Matter*, **2010**, 6, 6004 | 3.6 | 157 |
| 248 | Buckling Pneumatic Linear Actuators Inspired by Muscle. *Advanced Materials Technologies*, **2016**, 1, 1600055 | 6.5 | 151 |
| 247 | Bioinspired Hydrogel Interferometer for Adaptive Coloration and Chemical Sensing. *Advanced Materials*, **2018**, 30, e1800468 | 24 | 149 |
| 246 | Ionic cable. *Extreme Mechanics Letters*, **2015**, 3, 59-65 | 3.9 | 148 |
| 245 | Reactive flow in silicon electrodes assisted by the insertion of lithium. *Nano Letters*, **2012**, 12, 4397-403 | 11.5 | 145 |
| 244 | Delamination Specimens for Orthotropic Materials. *Journal of Applied Mechanics, Transactions ASME*, **1990**, 57, 627-634 | 2.7 | 145 |
| 243 | Stretchable materials of high toughness and low hysteresis. *Proceedings of the National Academy of Sciences of the United States of America*, **2019**, 116, 5967-5972 | 11.5 | 142 |
| 242 | Compliant thin film patterns of stiff materials as platforms for stretchable electronics. *Journal of Materials Research*, **2005**, 20, 3274-3277 | 2.5 | 140 |

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| 241 | Maximizing the Energy Density of Dielectric Elastomer Generators Using Equi-Biaxial Loading. *Advanced Functional Materials*, **2013**, 23, 5056-5061 | 15.6 | 139 |
| 240 | Averting cracks caused by insertion reaction in lithium‐ion batteries. *Journal of Materials Research*, **2010**, 25, 1007-1010 | 2.5 | 138 |
| 239 | Giant, voltage-actuated deformation of a dielectric elastomer under dead load. *Applied Physics Letters*, **2012**, 100, 041911 | 3.4 | 137 |
| 238 | Bonding dissimilar polymer networks in various manufacturing processes. *Nature Communications*, **2018**, 9, 846 | 17.4 | 136 |
| 237 | Fatigue fracture of tough hydrogels. *Extreme Mechanics Letters*, **2017**, 15, 91-96 | 3.9 | 136 |
| 236 | Stretchable wavy metal interconnects. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2004**, 22, 1723-1725 | 2.9 | 133 |
| 235 | Measurements of the fracture energy of lithiated silicon electrodes of Li-ion batteries. *Nano Letters* , **2013**, 13, 5570-7 | 11.5 | 127 |
| 234 | Fracture and debonding in lithium-ion batteries with electrodes of hollow core‐shell nanostructures. *Journal of Power Sources*, **2012**, 218, 6-14 | 8.9 | 127 |
| 233 | Nonlinear oscillation of a dielectric elastomer balloon. *Polymer International*, **2010**, 59, 378-383 | 3.3 | 127 |
| 232 | Cracking of Laminates Subjected to Biaxial Tensile Stresses. *Journal of the American Ceramic Society* , **1996**, 79, 2127-2133 | 3.8 | 126 |
| 231 | Propagation of instability in dielectric elastomers. *International Journal of Solids and Structures*, **2008**, 45, 3739-3750 | 3.1 | 124 |
| 230 | NONEQUILIBRIUM THERMODYNAMICS OF DIELECTRIC ELASTOMERS. *International Journal of Applied Mechanics*, **2011**, 03, 203-217 | 2.4 | 120 |
| 229 | Mechanics of thin-film transistors and solar cells on flexible substrates. *Solar Energy*, **2006**, 80, 687-693 | 6.8 | 113 |
| 228 | The thickness and stretch dependence of the electrical breakdown strength of an acrylic dielectric elastomer. *Applied Physics Letters*, **2012**, 101, 122905 | 3.4 | 111 |
| 227 | Self-Healing, Adhesive, and Highly Stretchable Ionogel as a Strain Sensor for Extremely Large Deformation. *Small*, **2019**, 15, e1804651 | 11 | 110 |
| 226 | Photodetachable Adhesion. *Advanced Materials*, **2019**, 31, e1806948 | 24 | 110 |
| 225 | Complex interplay of nonlinear processes in dielectric elastomers. *Physical Review E*, **2012**, 85, 051801 | 2.4 | 109 |
| 224 | Epitaxial films stabilized by long-range forces. *Physical Review B*, **1998**, 58, 5116-5120 | 3.3 | 109 |

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| 223 | From macro- to microscale poroelastic characterization of polymeric hydrogels via indentation. *Soft Matter*, **2012**, 8, 3393 | 3.6 | 108 |
| 222 | Persistent step-flow growth of strained films on vicinal substrates. *Physical Review Letters*, **2005**, 95, 095501 | 7.4 | 108 |
| 221 | Viscoelasticity and poroelasticity in elastomeric gels. *Acta Mechanica Solida Sinica*, **2012**, 25, 441-458 | 2 | 106 |
| 220 | Flaw sensitivity of highly stretchable materials. *Extreme Mechanics Letters*, **2017**, 10, 50-57 | 3.9 | 105 |
| 219 | Natural rubber for sustainable high-power electrical energy generation. *RSC Advances*, **2014**, 4, 27905-27913 | 3.7 | 104 |
| 218 | New directions in mechanics. *Mechanics of Materials*, **2005**, 37, 231-259 | 3.3 | 104 |
| 217 | Fatigue of hydrogels. *European Journal of Mechanics, A/Solids*, **2019**, 74, 337-370 | 3.7 | 104 |
| 216 | Rational Design of Mechano-Responsive Optical Materials by Fine Tuning the Evolution of Strain-Dependent Wrinkling Patterns. *Advanced Optical Materials*, **2013**, 1, 381-388 | 8.1 | 103 |
| 215 | Method to analyze programmable deformation of dielectric elastomer layers. *Applied Physics Letters*, **2008**, 93, 251902 | 3.4 | 103 |
| 214 | Fatigue fracture of hydrogels. *Extreme Mechanics Letters*, **2017**, 10, 24-31 | 3.9 | 100 |
| 213 | Creasing instability of elastomer films. *Soft Matter*, **2012**, 8, 1301-1304 | 3.6 | 99 |
| 212 | Stiff subcircuit islands of diamondlike carbon for stretchable electronics. *Journal of Applied Physics*, **2006**, 100, 014913 | 2.5 | 99 |
| 211 | A finite element method for transient analysis of concurrent large deformation and mass transport in gels. *Journal of Applied Physics*, **2009**, 105, 093522 | 2.5 | 97 |
| 210 | Fatigue of double-network hydrogels. *Engineering Fracture Mechanics*, **2018**, 187, 74-93 | 4.2 | 96 |
| 209 | Dielectric elastomer actuators with elastomeric electrodes. *Applied Physics Letters*, **2012**, 101, 091907 | 3.4 | 95 |
| 208 | Method for measuring energy generation and efficiency of dielectric elastomer generators. *Applied Physics Letters*, **2011**, 99, 162904 | 3.4 | 91 |
| 207 | Spherical indentation testing of poroelastic relaxations in thin hydrogel layers. *Soft Matter*, **2012**, 8, 1492-1498 | 3.6 | 90 |
| 206 | Failure by simultaneous grain growth, strain localization, and interface debonding in metal films on polymer substrates. *Journal of Materials Research*, **2009**, 24, 379-385 | 2.5 | 90 |

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| 205 | Digital logic for soft devices. *Proceedings of the National Academy of Sciences of the United States of America*, **2019**, 116, 7750-7759 | 11.5 | 89 |
| 204 | Large deformation and electromechanical instability of a dielectric elastomer tube actuator. *Journal of Applied Physics*, **2010**, 108, 074113 | 2.5 | 89 |
| 203 | Long-distance propagation of forces in a cell. *Biochemical and Biophysical Research Communications*, **2005**, 328, 1133-8 | 3.4 | 87 |
| 202 | Ionoelastomer junctions between polymer networks of fixed anions and cations. *Science*, **2020**, 367, 773-776 | 3.3 | 86 |
| 201 | Wearable and Washable Conductors for Active Textiles. *ACS Applied Materials & Interfaces*, **2017**, 9, 25542-25552 | 9.5 | 84 |
| 200 | Fatigue Fracture of Self-Recovery Hydrogels. *ACS Macro Letters*, **2018**, 7, 312-317 | 6.6 | 79 |
| 199 | Elastomeric substrates with embedded stiff platforms for stretchable electronics. *Applied Physics Letters*, **2013**, 102, 131904 | 3.4 | 79 |
| 198 | Stretchable and transparent hydrogels as soft conductors for dielectric elastomer actuators. *Journal of Polymer Science, Part B: Polymer Physics*, **2014**, 52, 1055-1060 | 2.6 | 79 |
| 197 | Modeling and simulation of buckling of polymeric membrane thin film gel. *Computational Materials Science*, **2010**, 49, S60-S64 | 3.2 | 78 |
| 196 | Dielectric elastomer membranes undergoing inhomogeneous deformation. *Journal of Applied Physics*, **2009**, 106, 083522 | 2.5 | 78 |
| 195 | Stretchable and fatigue-resistant materials. *Materials Today*, **2020**, 34, 7-16 | 21.8 | 78 |
| 194 | Large, uni-directional actuation in dielectric elastomers achieved by fiber stiffening. *Applied Physics Letters*, **2012**, 100, 211901 | 3.4 | 77 |
| 193 | A dynamic finite element method for inhomogeneous deformation and electromechanical instability of dielectric elastomer transducers. *International Journal of Solids and Structures*, **2012**, 49, 2187-2194 | 3.1 | 75 |
| 192 | On designing dielectric elastomer actuators. *Journal of Applied Physics*, **2008**, 104, 093503 | 2.5 | 75 |
| 191 | Variation of stress with charging rate due to strain-rate sensitivity of silicon electrodes of Li-ion batteries. *Journal of Power Sources*, **2014**, 270, 569-575 | 8.9 | 74 |
| 190 | Adhesion between highly stretchable materials. *Soft Matter*, **2016**, 12, 1093-9 | 3.6 | 73 |
| 189 | Performance of dissipative dielectric elastomer generators. *Journal of Applied Physics*, **2012**, 111, 094107 | 2.5 | 73 |
| 188 | Temporal evolution and instability in a viscoelastic dielectric elastomer. *Journal of the Mechanics and Physics of Solids*, **2015**, 76, 47-64 | 5 | 72 |

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| 187 | Indentation of polydimethylsiloxane submerged in organic solvents. *Journal of Materials Research*, **2011**, 26, 785-795 | 2.5 | 72 |
| 186 | Fatigue-free, superstretchable, transparent, and biocompatible metal electrodes. *Proceedings of the National Academy of Sciences of the United States of America*, **2015**, 112, 12332-7 | 11.5 | 71 |
| 185 | Fiber-reinforced tough hydrogels. *Extreme Mechanics Letters*, **2014**, 1, 90-96 | 3.9 | 70 |
| 184 | Experimental determination of equations of state for ideal elastomeric gels. *Soft Matter*, **2012**, 8, 8121 | 3.6 | 69 |
| 183 | Exceptionally tough and notch-insensitive magnetic hydrogels. *Soft Matter*, **2015**, 11, 8253-61 | 3.6 | 68 |
| 182 | Printing Hydrogels and Elastomers in Arbitrary Sequence with Strong Adhesion. *Advanced Functional Materials*, **2019**, 29, 1901721 | 15.6 | 67 |
| 181 | Fatigue fracture of nearly elastic hydrogels. *Soft Matter*, **2018**, 14, 3563-3571 | 3.6 | 67 |
| 180 | Two types of transitions to wrinkles in dielectric elastomers. *Soft Matter*, **2012**, 8, 8840 | 3.6 | 67 |
| 179 | Cyclic plasticity and shakedown in high-capacity electrodes of lithium-ion batteries. *International Journal of Solids and Structures*, **2013**, 50, 1120-1129 | 3.1 | 66 |
| 178 | Electromechanical phase transition in dielectric elastomers. *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, **2012**, 468, 1014-1040 | 2.4 | 66 |
| 177 | Localization of folds and cracks in thin metal films coated on flexible elastomer foams. *Advanced Materials*, **2013**, 25, 3117-21 | 24 | 66 |
| 176 | Creases in soft tissues generated by growth. *Europhysics Letters*, **2011**, 95, 64002 | 1.6 | 66 |
| 175 | Sandwich-lithiation and longitudinal crack in amorphous silicon coated on carbon nanofibers. *ACS Nano*, **2012**, 6, 9158-67 | 16.7 | 65 |
| 174 | A soft ring oscillator. *Science Robotics*, **2019**, 4, | 18.6 | 64 |
| 173 | Polyacrylamide hydrogels. I. Network imperfection. *Journal of the Mechanics and Physics of Solids*, **2019**, 131, 43-55 | 5 | 64 |
| 172 | Hydrogel Paint. *Advanced Materials*, **2019**, 31, e1903062 | 24 | 64 |
| 171 | Hydrogel Interferometry for Ultrasensitive and Highly Selective Chemical Detection. *Advanced Materials*, **2018**, 30, e1804916 | 24 | 64 |
| 170 | Reactive flow in solids. *Journal of the Mechanics and Physics of Solids*, **2013**, 61, 61-77 | 5 | 63 |

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|---|---|---|---|
| 169 | Fracture, fatigue, and friction of polymers in which entanglements greatly outnumber cross-links. *Science*, **2021**, 374, 212-216 | 33.3 | 63 |
| 168 | Surface energy as a barrier to creasing of elastomer films: an elastic analogy to classical nucleation. *Physical Review Letters*, **2012**, 109, 038001 | 7.4 | 61 |
| 167 | A model of ideal elastomeric gels for polyelectrolyte gels. *Soft Matter*, **2014**, 10, 2582-90 | 3.6 | 60 |
| 166 | Delamination of stiff islands patterned on stretchable substrates. *International Journal of Materials Research*, **2007**, 98, 717-722 | 0.5 | 60 |
| 165 | Cyclic performance of viscoelastic dielectric elastomers with solid hydrogel electrodes. *Applied Physics Letters*, **2014**, 104, 062902 | 3.4 | 59 |
| 164 | Poroelasticity of a covalently crosslinked alginate hydrogel under compression. *Journal of Applied Physics*, **2010**, 108, 113514 | 2.5 | 57 |
| 163 | Osmotic collapse of a void in an elastomer: breathing, buckling and creasing. *Soft Matter*, **2010**, 6, 5770 | 3.6 | 57 |
| 162 | Extension limit, polarization saturation, and snap-through instability of dielectric elastomers. *International Journal of Smart and Nano Materials*, **2011**, 2, 59-67 | 3.6 | 57 |
| 161 | Tough photoluminescent hydrogels doped with lanthanide. *Macromolecular Rapid Communications*, **2015**, 36, 465-71 | 4.8 | 56 |
| 160 | Organic liquid-crystal devices based on ionic conductors. *Materials Horizons*, **2017**, 4, 1102-1109 | 14.4 | 56 |
| 159 | Rupture of a highly stretchable acrylic dielectric elastomer. *Journal of Applied Physics*, **2012**, 111, 104114 | 2.5 | 56 |
| 158 | Agile and Resilient Insect-Scale Robot. *Soft Robotics*, **2019**, 6, 133-141 | 9.2 | 56 |
| 157 | Design Molecular Topology for Wet-Dry Adhesion. *ACS Applied Materials & Interfaces*, **2019**, 11, 24802-24811 | 9.5 | 54 |
| 156 | Force generated by a swelling elastomer subject to constraint. *Journal of Applied Physics*, **2010**, 107, 103535 | 2.5 | 54 |
| 155 | MECHANICS AND THERMODYNAMICS OF BRITTLE INTERFACIAL FAILURE IN BIMATERIAL SYSTEMS **1990**, 269-294 | | 53 |
| 154 | Fire-Resistant Hydrogel-Fabric Laminates: A Simple Concept That May Save Lives. *ACS Applied Materials & Interfaces*, **2016**, 8, 2071-7 | 9.5 | 51 |
| 153 | Dielectric elastomers of interpenetrating networks. *Applied Physics Letters*, **2009**, 95, 232909 | 3.4 | 51 |
| 152 | Inhomogeneous and anisotropic equilibrium state of a swollen hydrogel containing a hard core. *Applied Physics Letters*, **2008**, 92, 051904 | 3.4 | 51 |

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| 151 | Functional hydrogel coatings. *National Science Review*, **2021**, 8, nwaa254 | 10.8 | 51 |
| 150 | Phase-transforming and switchable metamaterials. *Extreme Mechanics Letters*, **2016**, 6, 1-9 | 3.9 | 50 |
| 149 | Bursting drops in solid dielectrics caused by high voltages. *Nature Communications*, **2012**, 3, 1157 | 17.4 | 50 |
| 148 | Fracture Toughness and Fatigue Threshold of Tough Hydrogels. *ACS Macro Letters*, **2019**, 8, 17-23 | 6.6 | 50 |
| 147 | Equations of state for ideal elastomeric gels. *Europhysics Letters*, **2012**, 97, 34009 | 1.6 | 49 |
| 146 | Stick-On Large-Strain Sensors for Soft Robots. *Advanced Materials Interfaces*, **2019**, 6, 1900985 | 4.6 | 48 |
| 145 | Electromechanical instability in semicrystalline polymers. *Applied Physics Letters*, **2009**, 95, 031904 | 3.4 | 47 |
| 144 | Bifurcation Diagrams for the Formation of Wrinkles or Creases in Soft Bilayers. *Journal of Applied Mechanics, Transactions ASME*, **2015**, 82, | 2.7 | 45 |
| 143 | Inorganic islands on a highly stretchable polyimide substrate. *Journal of Materials Research*, **2009**, 24, 3338-3342 | 2.5 | 45 |
| 142 | Computational Model of Hydrostatically Coupled Dielectric Elastomer Actuators. *Journal of Applied Mechanics, Transactions ASME*, **2012**, 79, | 2.7 | 45 |
| 141 | Micromechanics of macroelectronics. *Particuology: Science and Technology of Particles*, **2005**, 3, 321-328 | | 44 |
| 140 | The role of substrate pre-stretch in post-wrinkling bifurcations. *Soft Matter*, **2014**, 10, 6520-9 | 3.6 | 43 |
| 139 | Indentation: A simple, nondestructive method for characterizing the mechanical and transport properties of pH-sensitive hydrogels. *Journal of Materials Research*, **2012**, 27, 152-160 | 2.5 | 43 |
| 138 | Nano-optomechanical actuator and pull-back instability. *ACS Nano*, **2013**, 7, 1676-81 | 16.7 | 42 |
| 137 | Nonlinear deformation analysis of a dielectric elastomer membrane–spring system. *Smart Materials and Structures*, **2010**, 19, 085017 | 3.4 | 42 |
| 136 | Force and stroke of a hydrogel actuator. *Soft Matter*, **2013**, 9, 8504 | 3.6 | 41 |
| 135 | Polyacrylamide hydrogels. II. elastic dissipater. *Journal of the Mechanics and Physics of Solids*, **2019**, 133, 103737 | 5 | 40 |
| 134 | Covalent Topological Adhesion. *ACS Macro Letters*, **2019**, 8, 754-758 | 6.6 | 40 |

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| 133 | Creases and wrinkles on the surface of a swollen gel. *Journal of Applied Physics*, **2013**, 114, 073507 | 2.5 | 40 |
| 132 | Snap-through Expansion of a Gas Bubble in an Elastomer **2011**, 87, 466-481 | | 40 |
| 131 | Morphological evolution of Si nanowires upon lithiation: a first-principles multiscale model. *Nano Letters*, **2013**, 13, 2011-5 | 11.5 | 39 |
| 130 | A finite element method for dielectric elastomer transducers. *Acta Mechanica Solida Sinica*, **2012**, 25, 459-466 | 2 | 37 |
| 129 | Channel cracks in a hermetic coating consisting of organic and inorganic layers. *Applied Physics Letters*, **2007**, 90, 111910 | 3.4 | 37 |
| 128 | High-performance electromechanical transduction using laterally-constrained dielectric elastomers part I: Actuation processes. *Journal of the Mechanics and Physics of Solids*, **2017**, 105, 81-94 | 5 | 36 |
| 127 | Fatigue-Resistant elastomers. *Journal of the Mechanics and Physics of Solids*, **2020**, 134, 103751 | 5 | 36 |
| 126 | REACTIVE FLOW IN LARGE-DEFORMATION ELECTRODES OF LITHIUM-ION BATTERIES. *International Journal of Applied Mechanics*, **2012**, 04, 1250023 | 2.4 | 35 |
| 125 | Instant, Tough, Noncovalent Adhesion. *ACS Applied Materials & Interfaces*, **2019**, 11, 40749-40757 | 9.5 | 34 |
| 124 | Neural interfaces by hydrogels. *Extreme Mechanics Letters*, **2019**, 30, 100510 | 3.9 | 34 |
| 123 | A Lesson from Plants: High-Speed Soft Robotic Actuators. *Advanced Science*, **2020**, 7, 1903391 | 13.6 | 32 |
| 122 | Controlled formation and disappearance of creases. *Materials Horizons*, **2014**, 1, 207-213 | 14.4 | 31 |
| 121 | Ionotronic Luminescent Fibers, Fabrics, and Other Configurations. *Advanced Materials*, **2020**, 32, e2005545 | 25 | 31 |
| 120 | Exact analysis of ligand-induced dimerization of monomeric receptors. *Analytical Chemistry*, **2008**, 80, 5550-5 | 7.8 | 30 |
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