# Nancy R Sottos

## List of Publications by Citations



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|---|---|---|---|
| 267 papers | 26,749 citations | 76 h-index | 160 g-index |
| 286 ext. papers | 29,523 ext. citations | 9.6 avg, IF | 7.14 L-index |

| # | Paper | IF | Citations |
|---|---|---|---|
| 267 | Autonomic healing of polymer composites. *Nature*, **2001**, 409, 794-7 | 50.4 | 3147 |
| 266 | Force-induced activation of covalent bonds in mechanoresponsive polymeric materials. *Nature*, **2009**, 459, 68-72 | 50.4 | 1211 |
| 265 | Self-healing materials with microvascular networks. *Nature Materials*, **2007**, 6, 581-5 | 27 | 1198 |
| 264 | Self-Healing Polymers and Composites. *Annual Review of Materials Research*, **2010**, 40, 179-211 | 12.8 | 990 |
| 263 | Mechanically-induced chemical changes in polymeric materials. *Chemical Reviews*, **2009**, 109, 5755-98 | 68.1 | 969 |
| 262 | Biasing reaction pathways with mechanical force. *Nature*, **2007**, 446, 423-7 | 50.4 | 611 |
| 261 | In situ poly(urea-formaldehyde) microencapsulation of dicyclopentadiene. *Journal of Microencapsulation*, **2003**, 20, 719-730 | 3.4 | 581 |
| 260 | Self-healing structural composite materials. *Composites Part A: Applied Science and Manufacturing*, **2003**, 34, 743-753 | 8.4 | 572 |
| 259 | Microcapsule induced toughening in a self-healing polymer composite. *Journal of Materials Science*, **2004**, 39, 1703-1710 | 4.3 | 522 |
| 258 | Fracture testing of a self-healing polymer composite. *Experimental Mechanics*, **2002**, 42, 372-379 | 2.6 | 511 |
| 257 | Triggered Release from Polymer Capsules. *Macromolecules*, **2011**, 44, 5539-5553 | 5.5 | 487 |
| 256 | Effects of chemical bonding on heat transport across interfaces. *Nature Materials*, **2012**, 11, 502-6 | 27 | 458 |
| 255 | Effect of microcapsule size on the performance of self-healing polymers. *Polymer*, **2007**, 48, 3520-3529 | 3.9 | 374 |
| 254 | Microencapsulation of Isocyanates for Self-Healing Polymers. *Macromolecules*, **2008**, 41, 9650-9655 | 5.5 | 358 |
| 253 | In situ poly(urea-formaldehyde) microencapsulation of dicyclopentadiene. *Journal of Microencapsulation*, **2003**, 20, 719-30 | 3.4 | 339 |
| 252 | Microcapsules filled with reactive solutions for self-healing materials. *Polymer*, **2009**, 50, 990-997 | 3.9 | 334 |
| 251 | Nanocapsules for self-healing materials. *Composites Science and Technology*, **2008**, 68, 978-986 | 8.6 | 332 |

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| 250 | Wax-Protected Catalyst Microspheres for Efficient Self-Healing Materials. *Advanced Materials*, **2005**, 17, 205-208 | 24 | 332 |
| 249 | Self-Healing Materials with Interpenetrating Microvascular Networks. *Advanced Materials*, **2009**, 21, 4143-4147 | 24 | 305 |
| 248 | Mechanophore-linked addition polymers. *Journal of the American Chemical Society*, **2007**, 129, 13808-9 | 16.4 | 296 |
| 247 | Biomimetic Self-Healing. *Angewandte Chemie - International Edition*, **2015**, 54, 10428-47 | 16.4 | 271 |
| 246 | Self-healing thermoset using encapsulated epoxy-amine healing chemistry. *Polymer*, **2012**, 53, 581-587 | 3.9 | 267 |
| 245 | Solvent-Promoted Self-Healing Epoxy Materials. *Macromolecules*, **2007**, 40, 8830-8832 | 5.5 | 245 |
| 244 | Autonomic restoration of electrical conductivity. *Advanced Materials*, **2012**, 24, 398-401 | 24 | 243 |
| 243 | Delivery of Two-Part Self-Healing Chemistry via Microvascular Networks. *Advanced Functional Materials*, **2009**, 19, 1399-1405 | 15.6 | 233 |
| 242 | Malleable and Recyclable Poly(urea-urethane) Thermosets bearing Hindered Urea Bonds. *Advanced Materials*, **2016**, 28, 7646-51 | 24 | 230 |
| 241 | Full Recovery of Fracture Toughness Using a Nontoxic Solvent-Based Self-Healing System. *Advanced Functional Materials*, **2008**, 18, 1898-1904 | 15.6 | 218 |
| 240 | Polymers with autonomous life-cycle control. *Nature*, **2016**, 540, 363-370 | 50.4 | 215 |
| 239 | Force-induced redistribution of a chemical equilibrium. *Journal of the American Chemical Society*, **2010**, 132, 16107-11 | 16.4 | 213 |
| 238 | Restoration of large damage volumes in polymers. *Science*, **2014**, 344, 620-3 | 33.3 | 198 |
| 237 | Retardation and repair of fatigue cracks in a microcapsule toughened epoxy composite Part I: Manual infiltration. *Composites Science and Technology*, **2005**, 65, 2466-2473 | 8.6 | 190 |
| 236 | Mechanical Properties of Microcapsules Used in a Self-Healing Polymer. *Experimental Mechanics*, **2006**, 46, 725-733 | 2.6 | 179 |
| 235 | Three-dimensional microvascular fiber-reinforced composites. *Advanced Materials*, **2011**, 23, 3654-8 | 24 | 178 |
| 234 | Catalyst Morphology and Dissolution Kinetics of Self-Healing Polymers. *Chemistry of Materials*, **2006**, 18, 1312-1317 | 9.6 | 176 |
| 233 | Robust, double-walled microcapsules for self-healing polymeric materials. *ACS Applied Materials & Interfaces*, **2010**, 2, 1195-9 | 9.5 | 173 |

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|---|---|---|---|
| 232 | Programmable microcapsules from self-immolative polymers. *Journal of the American Chemical Society*, **2010**, 132, 10266-8 | 16.4 | 172 |
| 231 | Embedded Shape-Memory Alloy Wires for Improved Performance of Self-Healing Polymers. *Advanced Functional Materials*, **2008**, 18, 2253-2260 | 15.6 | 172 |
| 230 | Continuous self-healing life cycle in vascularized structural composites. *Advanced Materials*, **2014**, 26, 4302-8 | 24 | 167 |
| 229 | Micro- and Nanoscale Deformation Measurement of Surface and Internal Planes via Digital Image Correlation. *Experimental Mechanics*, **2007**, 47, 51-62 | 2.6 | 166 |
| 228 | Proton-coupled mechanochemical transduction: a mechanogenerated acid. *Journal of the American Chemical Society*, **2012**, 134, 12446-9 | 16.4 | 163 |
| 227 | Rapid energy-efficient manufacturing of polymers and composites via frontal polymerization. *Nature*, **2018**, 557, 223-227 | 50.4 | 161 |
| 226 | Thermally stable autonomic healing in epoxy using a dual-microcapsule system. *Advanced Materials*, **2014**, 26, 282-7 | 24 | 156 |
| 225 | Performance of self-healing epoxy with microencapsulated healing agent and shape memory alloy wires. *Polymer*, **2009**, 50, 5533-5538 | 3.9 | 151 |
| 224 | Self-healing of internal damage in synthetic vascular materials. *Advanced Materials*, **2010**, 22, 5159-63 | 24 | 150 |
| 223 | Life extension of self-healing polymers with rapidly growing fatigue cracks. *Journal of the Royal Society Interface*, **2007**, 4, 395-403 | 4.1 | 147 |
| 222 | Shear activation of mechanophore-crosslinked polymers. *Journal of Materials Chemistry*, **2011**, 21, 8381 | | 141 |
| 221 | Microencapsulation of a Reactive Liquid-Phase Amine for Self-Healing Epoxy Composites. *Macromolecules*, **2010**, 43, 1855-1859 | 5.5 | 141 |
| 220 | Triggered transience of metastable poly(phthalaldehyde) for transient electronics. *Advanced Materials*, **2014**, 26, 7637-42 | 24 | 139 |
| 219 | Autonomic healing of low-velocity impact damage in fiber-reinforced composites. *Composites Part A: Applied Science and Manufacturing*, **2010**, 41, 360-368 | 8.4 | 137 |
| 218 | A self-healing conductive ink. *Advanced Materials*, **2012**, 24, 2578-81, 2509 | 24 | 135 |
| 217 | Masked cyanoacrylates unveiled by mechanical force. *Journal of the American Chemical Society*, **2010**, 132, 4558-9 | 16.4 | 134 |
| 216 | Autonomic Shutdown of Lithium-Ion Batteries Using Thermoresponsive Microspheres. *Advanced Energy Materials*, **2012**, 2, 583-590 | 21.8 | 130 |
| 215 | A new self-healing epoxy with tungsten (VI) chloride catalyst. *Journal of the Royal Society Interface*, **2008**, 5, 95-103 | 4.1 | 127 |

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| 214 | Effects of thickness on the piezoelectric and dielectric properties of lead zirconate titanate thin films. *Journal of Applied Physics*, **2000**, 87, 3941-3949 | 2.5 | 126 |
| 213 | Evaluation of Ruthenium Catalysts for Ring-Opening Metathesis Polymerization-Based Self-Healing Applications. *Chemistry of Materials*, **2008**, 20, 3288-3297 | 9.6 | 125 |
| 212 | Thermally triggered degradation of transient electronic devices. *Advanced Materials*, **2015**, 27, 3783-8 | 24 | 122 |
| 211 | Regioisomer-Specific Mechanochromism of Naphthopyran in Polymeric Materials. *Journal of the American Chemical Society*, **2016**, 138, 12328-31 | 16.4 | 117 |
| 210 | Environmental effects on mechanochemical activation of spiropyran in linear PMMA. *Journal of Materials Chemistry*, **2011**, 21, 8443 | | 115 |
| 209 | Restoration of Conductivity with TTF-TCNQ Charge-Transfer Salts. *Advanced Functional Materials*, **2010**, 20, 1721-1727 | 15.6 | 114 |
| 208 | Fatigue crack propagation in microcapsule-toughened epoxy. *Journal of Materials Science*, **2006**, 41, 6266-6273 | 4.5 | 112 |
| 207 | In Situ Measurements of Strains in Composite Battery Electrodes during Electrochemical Cycling. *Experimental Mechanics*, **2014**, 54, 971-985 | 2.6 | 111 |
| 206 | Exploiting Force Sensitive Spiropyrans as Molecular Level Probes. *Macromolecules*, **2013**, 46, 3746-3752 | 5.5 | 109 |
| 205 | Characterization of Microvascular-Based Self-healing Coatings. *Experimental Mechanics*, **2009**, 49, 707-717 | 2.6 | 108 |
| 204 | Fracture and fatigue response of a self-healing epoxy adhesive. *Polymer*, **2011**, 52, 1628-1634 | 3.9 | 96 |
| 203 | Self-healing kinetics and the stereoisomers of dicyclopentadiene. *Journal of the Royal Society Interface*, **2007**, 4, 389-93 | 4.1 | 96 |
| 202 | Bioinspired Materials for Self-Cleaning and Self-Healing. *MRS Bulletin*, **2008**, 33, 732-741 | 3.2 | 93 |
| 201 | A parametric study of laser induced thin film spallation. *Experimental Mechanics*, **2002**, 42, 74-83 | 2.6 | 91 |
| 200 | Role of Mechanophore Orientation in Mechanochemical Reactions.. *ACS Macro Letters*, **2012**, 1, 163-166 | 6.6 | 90 |
| 199 | A Robust Damage-Reporting Strategy for Polymeric Materials Enabled by Aggregation-Induced Emission. *ACS Central Science*, **2016**, 2, 598-603 | 16.8 | 87 |
| 198 | Electrochemical stiffness in lithium-ion batteries. *Nature Materials*, **2016**, 15, 1182-1187 | 27 | 85 |
| 197 | Torsion fatigue response of self-healing poly(dimethylsiloxane) elastomers. *Polymer*, **2008**, 49, 3136-3145 | 3.9 | 84 |

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| 196 | Stress effects in sol-gel derived ferroelectric thin films. *Journal of Applied Physics*, **2004**, 95, 629-634 | 2.5 | 82 |
| 195 | Self-healing of a high temperature cured epoxy using poly(dimethylsiloxane) chemistry. *Polymer*, **2010**, 51, 4063-4068 | 3.9 | 81 |
| 194 | Mechanophore-Functionalized Nanoparticles: Interfacial Force-Focusing Effect in Mechanophore-Linked Nanocomposites (Adv. Sci. 7/2020). *Advanced Science*, **2020**, 7, 2070037 | 13.6 | 78 |
| 193 | Characterizing the mechanochemically active domains in gem-dihalocyclopropanated polybutadiene under compression and tension. *Journal of Materials Chemistry*, **2011**, 21, 8454 | | 78 |
| 192 | Autonomous Indication of Mechanical Damage in Polymeric Coatings. *Advanced Materials*, **2016**, 28, 2189-94 | 24 | 76 |
| 191 | Fracture behavior of a self-healing, toughened epoxy adhesive. *International Journal of Adhesion and Adhesives*, **2013**, 44, 157-165 | 3.4 | 76 |
| 190 | Accelerated Self-Healing Via Ternary Interpenetrating Microvascular Networks. *Advanced Functional Materials*, **2011**, 21, 4320-4326 | 15.6 | 76 |
| 189 | Mechanical Reactivity of Two Different Spiropyran Mechanophores in Polydimethylsiloxane. *Macromolecules*, **2018**, 51, 9177-9183 | 5.5 | 75 |
| 188 | The Effect of Polymer Chain Alignment and Relaxation on Force-Induced Chemical Reactions in an Elastomer. *Advanced Functional Materials*, **2014**, 24, 1529-1537 | 15.6 | 72 |
| 187 | Cure-dependent Viscoelastic Poisson□ Ratio of Epoxy. *Experimental Mechanics*, **2007**, 47, 237-249 | 2.6 | 69 |
| 186 | Core-shell polymeric microcapsules with superior thermal and solvent stability. *ACS Applied Materials & Interfaces*, **2015**, 7, 10952-6 | 9.5 | 68 |
| 185 | Processing Effects for Integrated PZT: Residual Stress, Thickness, and Dielectric Properties. *Journal of the American Ceramic Society*, **2005**, 88, 2839-2847 | 3.8 | 68 |
| 184 | Microvascular based self-healing polymeric foam. *Polymer*, **2012**, 53, 4231-4240 | 3.9 | 66 |
| 183 | High-affinity DNA base analogs as supramolecular, nanoscale promoters of macroscopic adhesion. *Journal of the American Chemical Society*, **2013**, 135, 7288-95 | 16.4 | 66 |
| 182 | Fracture-induced activation in mechanophore-linked, rubber toughened PMMA. *Polymer*, **2014**, 55, 4164-4171 | 3.9 | 65 |
| 181 | Local displacements and load transfer in shape memory alloy composites. *Experimental Mechanics*, **1997**, 37, 78-86 | 2.6 | 65 |
| 180 | Silica-protected micron and sub-micron capsules and particles for self-healing at the microscale. *Macromolecular Rapid Communications*, **2011**, 32, 82-7 | 4.8 | 64 |
| 179 | Introduction: self-healing polymers and composites. *Journal of the Royal Society Interface*, **2007**, 4, 347-8 | 4.1 | 63 |

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| 178 | Pressurized vascular systems for self-healing materials. *Journal of the Royal Society Interface*, **2012**, 9, 1020-8 | 4.1 | 62 |
| 177 | Shockwave loading of mechanochemically active polymer coatings. *ACS Applied Materials & Interfaces*, **2014**, 6, 5350-5 | 9.5 | 61 |
| 176 | Simulation of fiber debonding with friction in a model composite pushout test. *International Journal of Solids and Structures*, **2001**, 38, 8547-8562 | 3.1 | 61 |
| 175 | Autonomic healing of carbon fiber/epoxy interfaces. *ACS Applied Materials & Interfaces*, **2014**, 6, 6033-9 | 9.5 | 58 |
| 174 | Polymer Microvascular Network Composites. *Journal of Composite Materials*, **2010**, 44, 2587-2603 | 2.7 | 58 |
| 173 | Autonomic Recovery of Fiber/Matrix Interfacial Bond Strength in a Model Composite. *Advanced Functional Materials*, **2010**, 20, 3547-3554 | 15.6 | 58 |
| 172 | Self-healing flexible laminates for resealing of puncture damage. *Smart Materials and Structures*, **2009**, 18, 085001 | 3.4 | 57 |
| 171 | Light-triggered thermal conductivity switching in azobenzene polymers. *Proceedings of the National Academy of Sciences of the United States of America*, **2019**, 116, 5973-5978 | 11.5 | 56 |
| 170 | Evaluation of peroxide initiators for radical polymerization-based self-healing applications. *Journal of Polymer Science Part A*, **2010**, 48, 2698-2708 | 2.5 | 55 |
| 169 | Fluorescent image correlation for nanoscale deformation measurements. *Small*, **2006**, 2, 631-5 | 11 | 55 |
| 168 | Time-Dependent Mechanochemical Response of SP-Cross-Linked PMMA. *Macromolecules*, **2013**, 46, 8917-8921 | 5.9 | 53 |
| 167 | A Self-sealing Fiber-reinforced Composite. *Journal of Composite Materials*, **2010**, 44, 2573-2585 | 2.7 | 53 |
| 166 | Tensile properties and damage evolution in vascular 3D woven glass/epoxy composites. *Composites Part A: Applied Science and Manufacturing*, **2014**, 59, 9-17 | 8.4 | 52 |
| 165 | Mechanisms and characterization of impact damage in 2D and 3D woven fiber-reinforced composites. *Composites Part A: Applied Science and Manufacturing*, **2017**, 101, 432-443 | 8.4 | 52 |
| 164 | Chemical treatment of poly(lactic acid) fibers to enhance the rate of thermal depolymerization. *ACS Applied Materials & Interfaces*, **2012**, 4, 503-9 | 9.5 | 51 |
| 163 | Multidimensional Vascularized Polymers using Degradable Sacrificial Templates. *Advanced Functional Materials*, **2015**, 25, 1043-1052 | 15.6 | 48 |
| 162 | Microencapsulation of gallium-indium (Ga-In) liquid metal for self-healing applications. *Journal of Microencapsulation*, **2014**, 31, 350-4 | 3.4 | 48 |
| 161 | Visual indication of mechanical damage using core-shell microcapsules. *ACS Applied Materials & Interfaces*, **2011**, 3, 4547-51 | 9.5 | 48 |

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| 160 | Alkyl Phosphite Inhibitors for Frontal Ring-Opening Metathesis Polymerization Greatly Increase Pot Life. *ACS Macro Letters*, **2017**, 6, 609-612 | 6.6 | 47 |
| 159 | Microfluidically Switched Frequency-Reconfigurable Slot Antennas. *IEEE Antennas and Wireless Propagation Letters*, **2013**, 12, 828-831 | 3.8 | 47 |
| 158 | Full recovery of fiber/matrix interfacial bond strength using a microencapsulated solvent-based healing system. *Composites Science and Technology*, **2013**, 79, 1-7 | 8.6 | 47 |
| 157 | Peripherally decorated binary microcapsules containing two liquids. *Journal of Materials Chemistry*, **2008**, 18, 5390 | | 45 |
| 156 | Characterization of core-shell microstructure and self-healing performance of electrospun fiber coatings. *Polymer*, **2016**, 107, 263-272 | 3.9 | 44 |
| 155 | Autonomic restoration of electrical conductivity using polymer-stabilized carbon nanotube and graphene microcapsules. *Applied Physics Letters*, **2012**, 101, 043106 | 3.4 | 44 |
| 154 | Tensile and mixed-mode strength of a thin film-substrate interface under laser induced pulse loading. *Journal of the Mechanics and Physics of Solids*, **2004**, 52, 999-1022 | 5 | 44 |
| 153 | Adhesion strength measurement of polymer dielectric interfaces using laser spallation technique. *Thin Solid Films*, **2008**, 516, 7627-7635 | 2.2 | 43 |
| 152 | Modeling mechanophore activation within a viscous rubbery network. *Journal of the Mechanics and Physics of Solids*, **2014**, 63, 141-153 | 5 | 42 |
| 151 | Self-healing thermoplastic-toughened epoxy. *Polymer*, **2015**, 74, 254-261 | 3.9 | 41 |
| 150 | Repeatable self-healing of an epoxy matrix using imidazole initiated polymerization. *Polymer*, **2015**, 67, 174-184 | 3.9 | 41 |
| 149 | Computational analysis of actively-cooled 3D woven microvascular composites using a stabilized interface-enriched generalized finite element method. *International Journal of Heat and Mass Transfer*, **2013**, 65, 153-164 | 4.9 | 41 |
| 148 | Laser-induced decompression shock development in fused silica. *Journal of Applied Physics*, **2003**, 93, 9529-9536 | 2.5 | 38 |
| 147 | Application of debond length measurements to examine the mechanics of fiber pushout. *Journal of the Mechanics and Physics of Solids*, **1998**, 46, 1675-1697 | 5 | 37 |
| 146 | Computational modeling and design of actively-cooled microvascular materials. *International Journal of Heat and Mass Transfer*, **2012**, 55, 5309-5321 | 4.9 | 36 |
| 145 | Self-sealing of mechanical damage in a fully cured structural composite. *Composites Science and Technology*, **2013**, 79, 15-20 | 8.6 | 36 |
| 144 | Structural health management technologies for inflatable/deployable structures: Integrating sensing and self-healing. *Acta Astronautica*, **2011**, 68, 883-903 | 2.9 | 36 |
| 143 | Effect of surface treatment on the hydrolytic stability of E-glass fiber bundle tensile strength. *Composites Science and Technology*, **2005**, 65, 129-136 | 8.6 | 36 |

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|---|---|---|---|
| 142 | Self-healing Polymers and Composites. *American Scientist*, **2011**, 99, 392 | 2.7 | 36 |
| 141 | Comparison of Compression-After-Impact and Flexure-After-Impact protocols for 2D and 3D woven fiber-reinforced composites. *Composites Part A: Applied Science and Manufacturing*, **2017**, 101, 471-479 | 8.4 | 35 |
| 140 | Thermally Induced Interfacial Microcracking in Polymer Matrix Composites. *Journal of Composite Materials*, **1993**, 27, 1030-1051 | 2.7 | 35 |
| 139 | Restoration of Impact Damage in Polymers via a Hybrid Microcapsule/Microvascular Self-Healing System. *Advanced Functional Materials*, **2018**, 28, 1704197 | 15.6 | 34 |
| 138 | Cyclic Poly(phthalaldehyde): Thermoforming a Bulk Transient Material. *ACS Macro Letters*, **2018**, 7, 47-52 | 6.6 | 33 |
| 137 | Adhesion promotion via noncovalent interactions in self-healing polymers. *ACS Applied Materials & Interfaces*, **2011**, 3, 3072-7 | 9.5 | 33 |
| 136 | Three-dimensional viscoelastic simulation of woven composite substrates for multilayer circuit boards. *Composites Science and Technology*, **2003**, 63, 1971-1983 | 8.6 | 32 |
| 135 | Silicon Composite Electrodes with Dynamic Ionic Bonding. *Advanced Energy Materials*, **2017**, 7, 1700045 | 21.8 | 31 |
| 134 | Spatially Selective and Density-Controlled Activation of Interfacial Mechanophores. *Journal of the American Chemical Society*, **2019**, 141, 4080-4085 | 16.4 | 31 |
| 133 | Reversible and Irreversible Deformation Mechanisms of Composite Graphite Electrodes in Lithium-Ion Batteries. *Journal of the Electrochemical Society*, **2016**, 163, A1965-A1974 | 3.9 | 31 |
| 132 | Microencapsulated Carbon Black Suspensions for Restoration of Electrical Conductivity. *Advanced Functional Materials*, **2014**, 24, 2947-2956 | 15.6 | 31 |
| 131 | The influence of interphase regions on local thermal displacements in composites. *Composites Science and Technology*, **1992**, 44, 319-332 | 8.6 | 31 |
| 130 | Fully Recyclable Metastable Polymers and Composites. *Chemistry of Materials*, **2019**, 31, 398-406 | 9.6 | 31 |
| 129 | Effect of Mechanical Stress on Spiropyran-Merocyanine Reaction Kinetics in a Thermoplastic Polymer. *ACS Macro Letters*, **2016**, 5, 1312-1316 | 6.6 | 30 |
| 128 | Interfacial adhesion of photodefinable polyimide films on passivated silicon. *Thin Solid Films*, **2014**, 552, 116-123 | 2.2 | 29 |
| 127 | Improving hydrostatic performance of 1-3 piezocomposites. *Journal of Applied Physics*, **1995**, 77, 4595-4603 | 2.5 | 29 |
| 126 | Fast, reversible mechanochromism of regioisomeric oxazine mechanophores: Developing in situ responsive force probes for polymeric materials. *CheM*, **2021**, 7, 1080-1091 | 16.2 | 28 |
| 125 | Enhanced autonomic shutdown of Li-ion batteries by polydopamine coated polyethylene microspheres. *Journal of Power Sources*, **2014**, 269, 735-739 | 8.9 | 27 |

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|---|---|---|---|
| 124 | Polymer mechanochemistry: Flex, release and repeat. *Nature Chemistry*, **2014**, 6, 381-3 | 17.6 | 27 |
| 123 | Sol–gel derived Pb(Zr,Ti)O3 thin films: Residual stress and electrical properties. *Journal of the European Ceramic Society*, **2005**, 25, 2247-2251 | 6 | 27 |
| 122 | Interfacial Mechanophore Activation Using Laser-Induced Stress Waves. *Journal of the American Chemical Society*, **2018**, 140, 5000-5003 | 16.4 | 26 |
| 121 | Structural reinforcement of microvascular networks using electrostatic layer-by-layer assembly with halloysite nanotubes. *Soft Matter*, **2014**, 10, 544-8 | 3.6 | 26 |
| 120 | Mixed-mode failure of thin films using laser-generated shear waves. *Experimental Mechanics*, **2003**, 43, 323-330 | 2.6 | 26 |
| 119 | Local Strain Concentrations in a Microvascular Network. *Experimental Mechanics*, **2010**, 50, 255-263 | 2.6 | 25 |
| 118 | Transformation of Embedded Shape Memory Alloy Ribbons. *Journal of Intelligent Material Systems and Structures*, **1998**, 9, 379-390 | 2.3 | 25 |
| 117 | Retention of mechanical performance of polymer matrix composites above the glass transition temperature by vascular cooling. *Composites Part A: Applied Science and Manufacturing*, **2015**, 78, 412-423 | 8.4 | 24 |
| 116 | Autonomic healing of PMMA via microencapsulated solvent. *Polymer*, **2015**, 69, 241-248 | 3.9 | 24 |
| 115 | Dynamic delamination of patterned thin films. *Applied Physics Letters*, **2008**, 93, 261902 | 3.4 | 24 |
| 114 | Robust sacrificial polymer templates for 3D interconnected microvasculature in fiber-reinforced composites. *Composites Part A: Applied Science and Manufacturing*, **2017**, 100, 361-370 | 8.4 | 23 |
| 113 | Mitigation of fatigue damage in self-healing vascular materials. *Polymer*, **2012**, 53, 5575-5581 | 3.9 | 23 |
| 112 | Creep and relaxation behavior of woven glass/epoxy substrates for multilayer circuit board applications. *Polymer Composites*, **1998**, 19, 567-578 | 3 | 23 |
| 111 | Autonomous Damage Detection in Multilayered Coatings via Integrated Aggregation-Induced Emission Luminogens. *ACS Applied Materials & Interfaces*, **2018**, 10, 40361-40365 | 9.5 | 23 |
| 110 | A comparison of calculated and measured debond lengths from fiber push-out tests. *Composites Science and Technology*, **1998**, 58, 1727-1739 | 8.6 | 22 |
| 109 | Viscoelastic response of woven composite substrates. *Composites Science and Technology*, **2005**, 65, 621-634 | 8.6 | 22 |
| 108 | Low-Ceiling-Temperature Polymer Microcapsules with Hydrophobic Payloads via Rapid Emulsion-Solvent Evaporation. *ACS Applied Materials & Interfaces*, **2017**, 9, 20115-20123 | 9.5 | 21 |
| 107 | Biomimetische Selbstheilung. *Angewandte Chemie*, **2015**, 127, 10572-10593 | 3.6 | 21 |

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|---|---|---|---|
| 106 | Hybrid spectral/finite element analysis of dynamic delamination of patterned thin films. *Engineering Fracture Mechanics*, **2008**, 75, 4217-4233 | 4.2 | 21 |
| 105 | Rapid Synthesis of Elastomers and Thermosets with Tunable Thermomechanical Properties. *ACS Macro Letters*, **2020**, 9, 819-824 | 6.6 | 21 |
| 104 | Frontal polymerization of unidirectional carbon-fiber-reinforced composites. *Composites Part A: Applied Science and Manufacturing*, **2020**, 130, 105689 | 8.4 | 21 |
| 103 | Strain Evolution in Lithium Manganese Oxide Electrodes. *Experimental Mechanics*, **2018**, 58, 561-571 | 2.6 | 20 |
| 102 | Digital Image Correlation for Improved Detection of Basal Cell Carcinoma. *Experimental Mechanics*, **2010**, 50, 813-824 | 2.6 | 20 |
| 101 | Self-Protecting Epoxy Coatings with Anticorrosion Microcapsules. *ACS Omega*, **2018**, 3, 14157-14164 | 3.9 | 20 |
| 100 | Molecular tailoring of interfacial failure. *Langmuir*, **2014**, 30, 11096-102 | 4 | 19 |
| 99 | A NURBS-based interface-enriched generalized finite element method for problems with complex discontinuous gradient fields. *International Journal for Numerical Methods in Engineering*, **2015**, 101, 950-964 | 2.4 | 19 |
| 98 | Electrochemical Stiffness Changes in Lithium Manganese Oxide Electrodes. *Advanced Energy Materials*, **2017**, 7, 1601778 | 21.8 | 18 |
| 97 | Self-healing of fatigue damage in cross-ply glass/epoxy laminates. *Composites Science and Technology*, **2019**, 175, 122-127 | 8.6 | 18 |
| 96 | Dynamic delamination of patterned thin films: a numerical study. *International Journal of Fracture*, **2010**, 162, 77-90 | 2.3 | 18 |
| 95 | Relationship Between Interphase Composition, Material Properties, and Residual Thermal Stresses in Composite Materials **1995**, 52, 101-113 | | 18 |
| 94 | Damage-Responsive Microcapsules for Amplified Photoacoustic Detection of Microcracks in Polymers. *Chemistry of Materials*, **2018**, 30, 2198-2202 | 9.6 | 17 |
| 93 | Active Cooling of a Microvascular Shape Memory Alloy-Polymer Matrix Composite Hybrid Material . *Advanced Engineering Materials*, **2016**, 18, 1145-1153 | 3.5 | 17 |
| 92 | Autonomic healing of acrylic bone cement. *Advanced Healthcare Materials*, **2015**, 4, 202-7 | 10.1 | 16 |
| 91 | Mixed-mode interfacial adhesive strength of a thin film on an anisotropic substrate. *Journal of the Mechanics and Physics of Solids*, **2009**, 57, 51-66 | 5 | 16 |
| 90 | Sunlight-Activated Self-Healing Polymer Coatings. *Advanced Engineering Materials*, **2020**, 22, 1901223 | 3.5 | 16 |
| 89 | Strain and stress mapping by mechanochemical activation of spiropyran in poly(methyl methacrylate). *Strain*, **2019**, 55, e12310 | 1.7 | 16 |

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|---|---|---|---|
| 88 | Manufacturing of unidirectional glass/epoxy prepreg with microencapsulated liquid healing agents. *Composites Science and Technology*, **2017**, 153, 190-197 | 8.6 | 15 |
| 87 | Core-Shell Microcapsules Containing Flame Retardant Tris(2-chloroethyl phosphate) for Lithium-Ion Battery Applications. *ACS Omega*, **2018**, 3, 1609-1613 | 3.9 | 15 |
| 86 | Repeated healing of delamination damage in vascular composites by pressurized delivery of reactive agents. *Composites Science and Technology*, **2017**, 151, 1-9 | 8.6 | 15 |
| 85 | Strategies for Volumetric Recovery of Large Scale Damage in Polymers. *Advanced Functional Materials*, **2016**, 26, 4561-4569 | 15.6 | 15 |
| 84 | A Robust Patterning Technique for Electron Microscopy-Based Digital Image Correlation at Sub-Micron Resolutions. *Experimental Mechanics*, **2019**, 59, 1063-1073 | 2.6 | 14 |
| 83 | Interfacial Force-Focusing Effect in Mechanophore-Linked Nanocomposites. *Advanced Science*, **2020**, 7, 1903464 | 13.6 | 14 |
| 82 | The effect of residual stresses and sample preparation on progressive debonding during the fiber push-out test. *Composites Science and Technology*, **1998**, 58, 1741-1751 | 8.6 | 14 |
| 81 | A NURBS-based generalized finite element scheme for 3D simulation of heterogeneous materials. *Journal of Computational Physics*, **2016**, 318, 373-390 | 4.1 | 14 |
| 80 | Survival of actively cooled microvascular polymer matrix composites under sustained thermomechanical loading. *Composites Part A: Applied Science and Manufacturing*, **2016**, 82, 170-179 | 8.4 | 14 |
| 79 | Manufacture of carbon-fiber prepreg with thermoplastic/epoxy resin blends and microencapsulated solvent healing agents. *Composites Part A: Applied Science and Manufacturing*, **2019**, 121, 365-375 | 8.4 | 13 |
| 78 | Shock Wave Energy Dissipation in Catalyst-Free Poly(dimethylsiloxane) Vitrimers. *Macromolecules*, **2020**, 53, 4741-4747 | 5.5 | 13 |
| 77 | Effect of microchannels on the crashworthiness of fiber-reinforced composites. *Composite Structures*, **2018**, 184, 428-436 | 5.3 | 13 |
| 76 | A hybrid experimental/numerical approach to characterize interfacial adhesion in multilayer low- thin film specimens. *Thin Solid Films*, **2010**, 519, 337-344 | 2.2 | 13 |
| 75 | Micro-interferometry for measurement of thermal displacements at fiber/matrix interfaces. *Experimental Mechanics*, **1991**, 31, 98-103 | 2.6 | 13 |
| 74 | Digital Texture Voxels for Stretchable Morphing Skin Applications. *Advanced Materials Technologies*, **2019**, 4, 1900260 | 6.8 | 12 |
| 73 | Triggered Transience of Plastic Materials by a Single Electron Transfer Mechanism. *ACS Central Science*, **2020**, 6, 266-273 | 16.8 | 12 |
| 72 | Tracking capsule activation and crack healing in a microcapsule-based self-healing polymer. *Scientific Reports*, **2019**, 9, 17773 | 4.9 | 12 |
| 71 | Self-healing of impact damage in fiber-reinforced composites. *Composites Part B: Engineering*, **2019**, 173, 106808 | 10 | 11 |

| | | | |
|---|---|---|---|
| 70 | Grand challenges in the design and manufacture of vascular self-healing. *Multifunctional Materials*, **2020**, 3, 013001 | 5.2 | 11 |
| 69 | Thermal strain measurement in sol-gel lead zirconate titanate thin films. *Journal of Applied Physics*, **2009**, 106, 123501 | 2.5 | 11 |
| 68 | Photothermal Initiation of Frontal Polymerization Using Carbon Nanoparticles. *ACS Applied Polymer Materials*, **2020**, 2, 4690-4696 | 4.3 | 11 |
| 67 | Autonomous Strategies for Improved Performance and Reliability of Li-Ion Batteries. *Advanced Energy Materials*, **2021**, 11, 2003139 | 21.8 | 11 |
| 66 | Direct Detection of Manganese Ions in Organic Electrolyte by UV-vis Spectroscopy. *Journal of the Electrochemical Society*, **2018**, 165, A345-A348 | 3.9 | 9 |
| 65 | Self-Healing Epoxies and Their Composites **2013**, 361-380 | | 9 |
| 64 | In situdisplacement measurements and numerical predictions of embedded SMA transformation. *Smart Materials and Structures*, **2000**, 9, 701-710 | 3.4 | 9 |
| 63 | The Effects of Interphase Properties on Interfacial Shear Strength in Polymer Matrix Composites **1994**, 45, 105-124 | | 9 |
| 62 | Cross-Linking Agents for Enhanced Performance of Thermosets Prepared via Frontal Ring-Opening Metathesis Polymerization. *Macromolecules*, **2020**, 53, 8360-8366 | 5.5 | 9 |
| 61 | Photoexcitation of Grubbs□Second-Generation Catalyst Initiates Frontal Ring-Opening Metathesis Polymerization. *ACS Macro Letters*, **2020**, 9, 1563-1568 | 6.6 | 9 |
| 60 | Rapid synchronized fabrication of vascularized thermosets and composites. *Nature Communications* , **2021**, 12, 2836 | 17.4 | 9 |
| 59 | Time Release of Encapsulated Additives for Enhanced Performance of Lithium-Ion Batteries. *ACS Applied Materials & Interfaces*, **2017**, 9, 40244-40251 | 9.5 | 8 |
| 58 | Effect of Polymerized Ionic Liquid Structure and Morphology on Shockwave Energy Dissipation. *ACS Macro Letters*, **2019**, 535-539 | 6.6 | 8 |
| 57 | Shock-Induced Ordering in a Nano-segregated Network-Forming Ionic Liquid. *Journal of the American Chemical Society*, **2015**, 137, 16000-3 | 16.4 | 8 |
| 56 | Self-Healing Polymers **2010**, | | 8 |
| 55 | A spectral scheme for the simulation of dynamic mode 3 delamination of thin films. *Engineering Fracture Mechanics*, **2005**, 72, 1866-1891 | 4.2 | 8 |
| 54 | Spontaneous Patterning during Frontal Polymerization. *ACS Central Science*, **2021**, 7, 603-612 | 16.8 | 8 |
| 53 | Survey of Catalysts for Frontal Ring-Opening Metathesis Polymerization. *Macromolecules*, **2021**, 54, 5117-5123 | 5.5 | 8 |

| | | | |
|---|---|---|---|
| 52 | Energy Absorption Behavior of Polyurea Under Laser-Induced Dynamic Mixed-Mode Loading. *Journal of Dynamic Behavior of Materials*, **2016**, 2, 379-390 | 1.8 | 8 |
| 51 | Controlling Expansion in Lithium Manganese Oxide Composite Electrodes via Surface Modification. *Journal of the Electrochemical Society*, **2019**, 166, A2357-A2362 | 3.9 | 7 |
| 50 | Interfacial adhesive properties between a rigid-rod pyromellitimide molecular layer and a covalent semiconductor via atomistic simulations. *ACS Applied Materials & Interfaces*, **2013**, 5, 4702-11 | 9.5 | 7 |
| 49 | Predictions of Static Displacements in 1-3 Piezocomposites. *Journal of Intelligent Material Systems and Structures*, **1995**, 6, 169-180 | 2.3 | 7 |
| 48 | Measurement of surface displacements in 1-3 and 1-1-3 piezocomposites. *Journal of Applied Physics* , **1996**, 79, 1707-1712 | 2.5 | 7 |
| 47 | In Situ Strain Measurement in Solid-State Li-Ion Battery Electrodes. *Journal of the Electrochemical Society*, **2021**, 168, 010516 | 3.9 | 7 |
| 46 | Enhanced Mixing of Microvascular Self-Healing Reagents Using Segmented Gas-Liquid Flow. *ACS Applied Materials & Interfaces*, **2018**, 10, 32659-32667 | 9.5 | 7 |
| 45 | Force-Modulated Equilibria of Mechanophore Metal Coordinate Bonds. *Chemistry of Materials*, **2020**, 32, 3869-3878 | 9.6 | 6 |
| 44 | The effect of interfacial properties on damage evolution in model composites. *Polymer Composites*, **2005**, 26, 241-246 | 3 | 6 |
| 43 | Residual Stress Development during Relamination of Woven Composite Circuit Boards. *Journal of Composite Materials*, **2001**, 35, 905-927 | 2.7 | 6 |
| 42 | Rapid Degradation of Poly(lactic acid) with Organometallic Catalysts. *ACS Applied Materials & Interfaces*, **2019**, 11, 46226-46232 | 9.5 | 6 |
| 41 | Processing-dependent mechanical properties of solvent cast cyclic polyphthalaldehyde. *Polymer*, **2019**, 162, 29-34 | 3.9 | 6 |
| 40 | A Microvascular System for the Autonomous Regeneration of Large Scale Damage in Polymeric Coatings . *Advanced Engineering Materials*, **2017**, 19, 1700319 | 3.5 | 5 |
| 39 | Electropolymerization of Microencapsulated 3-hexylthiophene for Lithium-Ion Battery Applications. *Journal of the Electrochemical Society*, **2015**, 162, A373-A377 | 3.9 | 5 |
| 38 | High temperature fiber pushout of pristine and transversely fatigued SiC/Ti-6-4. *Journal of Materials Science*, **1999**, 34, 3471-3478 | 4.3 | 5 |
| 37 | A design for optimizing the hydrostatic performance of 1□3 piezocomposites. *Ferroelectrics, Letters Section*, **1996**, 21, 41-46 | 0.5 | 5 |
| 36 | A parametric study of laser induced thin film spallation **2002**, 42, 74 | | 5 |
| 35 | Nanoscale mechanical tailoring of interfaces using self-assembled monolayers. *Mechanics of Materials*, **2016**, 98, 71-80 | 3.3 | 5 |

| | | | |
|---|---|---|---|
| 34 | Automatic Optical Crack Tracking for Double Cantilever Beam Specimens. *Experimental Techniques*, **2016**, 40, 937-945 | 1.4 | 5 |
| 33 | Fabrication of pH-responsive monodisperse microcapsules using interfacial tension of immiscible phases. *Soft Matter*, **2020**, 16, 5139-5147 | 3.6 | 5 |
| 32 | Cathode/Electrolyte Interface-Dependent Changes in Stress and Strain in Lithium Iron Phosphate Composite Cathodes. *Journal of the Electrochemical Society*, **2019**, 166, A2707-A2714 | 3.9 | 4 |
| 31 | Simultaneous Observation of Phase-Stepped Images for Photoelasticity Using Diffraction Gratings. *Experimental Mechanics*, **2013**, 53, 1343-1355 | 2.6 | 4 |
| 30 | Damage Detection: Autonomous Indication of Mechanical Damage in Polymeric Coatings (Adv. Mater. 11/2016). *Advanced Materials*, **2016**, 28, 2275-2275 | 24 | 4 |
| 29 | Crystal Structure, Thermal Properties, and Shock-Wave-Induced Nucleation of 1,2-Bis(phenylethynyl)benzene. *Crystal Growth and Design*, **2016**, 16, 6148-6151 | 3.5 | 4 |
| 28 | Recent Advances in Self-Healing Materials Systems247-260 | | 3 |
| 27 | Residual Stress Effects in Ferroelectric Thin Films. *Materials Research Society Symposia Proceedings*, **2003**, 784, 321 | | 3 |
| 26 | A Novel Technique for Mixed-mode Thin Film Adhesion Measurement. *Materials Research Society Symposia Proceedings*, **2002**, 750, 1 | | 3 |
| 25 | Transient Thermal Deformations of the Interphase in Polymer Composites **1995**, 53, 69-78 | | 3 |
| 24 | Rapid multiple-front polymerization of fiber-reinforced polymer composites. *Composites Part A: Applied Science and Manufacturing*, **2022**, 106931 | 8.4 | 3 |
| 23 | Regenerative Polymeric Coatings Enabled by Pressure Responsive Surface Valves . *Advanced Engineering Materials*, **2017**, 19, 1700308 | 3.5 | 2 |
| 22 | Localization of Spiropyran Activation. *Langmuir*, **2020**, 36, 5847-5854 | 4 | 2 |
| 21 | Biomimetics: Restoration of Impact Damage in Polymers via a Hybrid Microcapsule/Microvascular Self-Healing System (Adv. Funct. Mater. 2/2018). *Advanced Functional Materials*, **2018**, 28, 1870012 | 15.6 | 2 |
| 20 | Self-Healing Circuits: Autonomic Restoration of Electrical Conductivity (Adv. Mater. 3/2012). *Advanced Materials*, **2012**, 24, 397-397 | 24 | 2 |
| 19 | Anisotropic Foams Via Frontal Polymerization. *Advanced Materials*, **2021**, e2105821 | 24 | 2 |
| 18 | The Influence of the Fiber/Matrix Interface on Local Glass Transition Temperature. *Studies in Polymer Science*, **1992**, 11, 339-358 | | 2 |
| 17 | Single carbon fiber transverse electrical resistivity measurement via the van der Pauw method. *Journal of Applied Physics*, **2021**, 130, 115105 | 2.5 | 2 |

| | | | |
|---|---|---|---|
| 16 | Self-Regulative Direct Ink Writing of Frontally Polymerizing Thermoset Polymers. *Advanced Materials Technologies*,2200230 | 6.8 | 2 |
| 15 | Effects of interface roughness on cohesive strength of self-assembled monolayers. *Applied Surface Science*, **2017**, 397, 192-198 | 6.7 | 1 |
| 14 | A polarization reconfigurable microstrip patch antenna using liquid metal microfluidics. *Smart Materials and Structures*, **2020**, 29, 045032 | 3.4 | 1 |
| 13 | Hybrid Materials: Three-Dimensional Microvascular Fiber-Reinforced Composites (Adv. Mater. 32/2011). *Advanced Materials*, **2011**, 23, 3653-3653 | 24 | 1 |
| 12 | Dynamic surface displacement measurement in 1-3 and 1-1-3 piezocomposites. *Journal of Applied Physics*, **1998**, 84, 5725-5728 | 2.5 | 1 |
| 11 | Mixed-mode failure of thin films using laser-generated shear waves **2003**, 43, 323 | | 1 |
| 10 | Multi-scale model of effects of roughness on the cohesive strength of self-assembled monolayers. *International Journal of Fracture*, **2017**, 208, 131-143 | 2.3 | |
| 9 | Biopolymers: Multidimensional Vascularized Polymers using Degradable Sacrificial Templates (Adv. Funct. Mater. 7/2015). *Advanced Functional Materials*, **2015**, 25, 1042-1042 | 15.6 | |
| 8 | Transient Electronics: Thermally Triggered Degradation of Transient Electronic Devices (Adv. Mater. 25/2015). *Advanced Materials*, **2015**, 27, 3782-3782 | 24 | |
| 7 | Carbon Black: Microencapsulated Carbon Black Suspensions for Restoration of Electrical Conductivity (Adv. Funct. Mater. 20/2014). *Advanced Functional Materials*, **2014**, 24, 2922-2922 | 15.6 | |
| 6 | Letter from the technical editor. *Experimental Mechanics*, **2003**, 43, 371-371 | 2.6 | |
| 5 | Acid-Responsive Anticorrosion Microcapsules for Self-Protecting Coatings. *Macromolecular Chemistry and Physics*,2100382 | 2.6 | |
| 4 | Statistical Analysis of Failure in Polymer Matrix Composites1049-1056 | | |
| 3 | Mechanical Characterization of Synthetic Vascular Materials. *Conference Proceedings of the Society for Experimental Mechanics*, **2011**, 291-294 | 0.3 | |
| 2 | Autonomous Healing and Indication of Transverse Crack Damage in Carbon Fiber Composite Laminates. *Conference Proceedings of the Society for Experimental Mechanics*, **2021**, 1-3 | 0.3 | |
| 1 | Sacrificial Cyclic Poly(phthalaldehyde) Templates for Low-Temperature Vascularization of Polymer Matrices. *ACS Applied Polymer Materials*, **2022**, 4, 479-487 | 4.3 | |