Ray H Baughman

List of Publications by Citations

280 papers	38,356 citations	81 h-index	194 g-index
302 ext. papers	41,958 ext. citations	12 avg, IF	7.4 L-index

#	Paper	IF	Citations
280	Carbon nanotubes--the route toward applications. *Science*, **2002**, 297, 787-92	33.3	8570
279	Carbon nanotubes: present and future commercial applications. *Science*, **2013**, 339, 535-9	33.3	3946
278	Strong, transparent, multifunctional, carbon nanotube sheets. *Science*, **2005**, 309, 1215-9	33.3	1437
277	Multifunctional carbon nanotube yarns by downsizing an ancient technology. *Science*, **2004**, 306, 1358-61	33.3	1421
276	Super-tough carbon-nanotube fibres. *Nature*, **2003**, 423, 703	50.4	1256
275	Carbon structures with three-dimensional periodicity at optical wavelengths. *Science*, **1998**, 282, 897-901	33.3	891
274	Artificial muscles from fishing line and sewing thread. *Science*, **2014**, 343, 868-72	33.3	724
273	Polymer artificial muscles. *Materials Today*, **2007**, 10, 30-38	21.8	662
272	Direct electron transfer of glucose oxidase on carbon nanotubes. *Nanotechnology*, **2002**, 13, 559-564	3.4	524
271	Negative Poisson's ratios as a common feature of cubic metals. *Nature*, **1998**, 392, 362-365	50.4	516
270	Electrically, chemically, and photonically powered torsional and tensile actuation of hybrid carbon nanotube yarn muscles. *Science*, **2012**, 338, 928-32	33.3	462
269	Giant-stroke, superelastic carbon nanotube aerogel muscles. *Science*, **2009**, 323, 1575-8	33.3	458
268	Controlled assembly of carbon nanotubes by designed amphiphilic Peptide helices. *Journal of the American Chemical Society*, **2003**, 125, 1770-7	16.4	439
267	Ultrafast charge and discharge biscrolled yarn supercapacitors for textiles and microdevices. *Nature Communications*, **2013**, 4, 1970	17.4	429
266	Torsional carbon nanotube artificial muscles. *Science*, **2011**, 334, 494-7	33.3	407
265	Three-dimensionally bonded spongy graphene material with super compressive elasticity and near-zero Poisson's ratio. *Nature Communications*, **2015**, 6, 6141	17.4	389
264	Superior rechargeability and efficiency of lithium-oxygen batteries: hierarchical air electrode architecture combined with a soluble catalyst. *Angewandte Chemie - International Edition*, **2014**, 53, 3926-31	16.4	360

263	Elastomeric conductive composites based on carbon nanotube forests. *Advanced Materials*, **2010**, 22, 2663-7	24	328
262	Harvesting waste thermal energy using a carbon-nanotube-based thermo-electrochemical cell. *Nano Letters*, **2010**, 10, 838-46	11.5	323
261	Synergistic toughening of composite fibres by self-alignment of reduced graphene oxide and carbon nanotubes. *Nature Communications*, **2012**, 3, 650	17.4	322
260	Flexible supercapacitor made of carbon nanotube yarn with internal pores. *Advanced Materials*, **2014**, 26, 2059-65	24	303
259	Biscrolling nanotube sheets and functional guests into yarns. *Science*, **2011**, 331, 51-5	33.3	292
258	Enhanced power and rechargeability of a Li-O2 battery based on a hierarchical-fibril CNT electrode. *Advanced Materials*, **2013**, 25, 1348-52	24	282
257	Structure and Dynamics of Carbon Nanoscrolls. *Nano Letters*, **2004**, 4, 881-884	11.5	271
256	Preparation and characterization of individual peptide-wrapped single-walled carbon nanotubes. *Journal of the American Chemical Society*, **2004**, 126, 7222-7	16.4	254
255	V2O5 nanofibre sheet actuators. *Nature Materials*, **2003**, 2, 316-9	27	230
254	Improving the mechanical properties of single-walled carbon nanotube sheets by intercalation of polymeric adhesives. *Applied Physics Letters*, **2003**, 82, 1682-1684	3.4	227
253	Electro-optic behavior of liquid-crystal-filled silica opal photonic crystals: effect of liquid-crystal alignment. *Physical Review Letters*, **2001**, 86, 4052-5	7.4	219
252	Electrochemical studies of single-wall carbon nanotubes in aqueous solutions. *Journal of Electroanalytical Chemistry*, **2000**, 488, 92-98	4.1	218
251	Harvesting electrical energy from carbon nanotube yarn twist. *Science*, **2017**, 357, 773-778	33.3	214
250	Sign Change of Poisson Ts Ratio for Carbon Nanotube Sheets. *Science*, **2008**, 320, 504-7	33.3	208
249	Materials science. Playing nature Ts game with artificial muscles. *Science*, **2005**, 308, 63-5	33.3	208
248	Continuous carbon nanotube composite fibers: properties, potential applications, and problems. *Journal of Materials Chemistry*, **2004**, 14, 1		203
247	Crystalline networks with unusual predicted mechanical and thermal properties. *Nature*, **1993**, 365, 735-737	38.4	190
246	Stretchable, weavable coiled carbon nanotube/MnO2/polymer fiber solid-state supercapacitors. *Scientific Reports*, **2015**, 5, 9387	4.9	189

245	Thermal conductivity of multi-walled carbon nanotube sheets: radiation losses and quenching of phonon modes. *Nanotechnology*, **2010**, 21, 035709	3.4	175
244	New twist on artificial muscles. *Proceedings of the National Academy of Sciences of the United States of America*, **2016**, 113, 11709-11716	11.5	173
243	High-efficiency electrochemical thermal energy harvester using carbon nanotube aerogel sheet electrodes. *Nature Communications*, **2016**, 7, 10600	17.4	172
242	Twistable and Stretchable Sandwich Structured Fiber for Wearable Sensors and Supercapacitors. *Nano Letters*, **2016**, 16, 7677-7684	11.5	166
241	Importance of aromatic content for peptide/single-walled carbon nanotube interactions. *Journal of the American Chemical Society*, **2005**, 127, 12323-8	16.4	165
240	Electromechanical Actuators Based on Graphene and Graphene/Fe3O4 Hybrid Paper. *Advanced Functional Materials*, **2011**, 21, 3778-3784	15.6	159
239	Thermal transport in MWCNT sheets and yarns. *Carbon*, **2007**, 45, 2880-2888	10.4	153
238	Elastomeric and Dynamic MnO2/CNT Core-Sheath Structure Coiled Yarn Supercapacitor. *Advanced Energy Materials*, **2016**, 6, 1502119	21.8	148
237	Resonance Raman study of the thermochromic phase transition of a polydiacetylene. *Journal of the American Chemical Society*, **1976**, 98, 481-487	16.4	147
236	Knitted Carbon-Nanotube-Sheath/Spandex-Core Elastomeric Yarns for Artificial Muscles and Strain Sensing. *ACS Nano*, **2016**, 10, 9129-9135	16.7	147
235	Electrical Power From Nanotube and Graphene Electrochemical Thermal Energy Harvesters. *Advanced Functional Materials*, **2012**, 22, 477-489	15.6	141
234	Woven-Yarn Thermoelectric Textiles. *Advanced Materials*, **2016**, 28, 5038-44	24	138
233	Robust cell migration and neuronal growth on pristine carbon nanotube sheets and yarns. *Journal of Biomaterials Science, Polymer Edition*, **2007**, 18, 1245-61	3.5	138
232	Diameter-selective solubilization of single-walled carbon nanotubes by reversible cyclic peptides. *Journal of the American Chemical Society*, **2005**, 127, 9512-7	16.4	137
231	A new catalyst-embedded hierarchical air electrode for high-performance Li-O2 batteries. *Energy and Environmental Science*, **2013**, 6, 3570	35.4	134
230	Electrochemical Characterization of Single-Walled Carbon Nanotube Electrodes. *Journal of the Electrochemical Society*, **2000**, 147, 4580	3.9	134
229	Super-tough MXene-functionalized graphene sheets. *Nature Communications*, **2020**, 11, 2077	17.4	132
228	Carbon nanotube - reduced graphene oxide composites for thermal energy harvesting applications. *Advanced Materials*, **2013**, 25, 6602-6	24	130

227	Electromechanical actuator with controllable motion, fast response rate, and high-frequency resonance based on graphene and polydiacetylene. *ACS Nano*, **2012**, 6, 4508-19	16.7	125
226	Carbon nanotube/graphene nanocomposite as efficient counter electrodes in dye-sensitized solar cells. *Nanotechnology*, **2012**, 23, 085201	3.4	125
225	Sheath-run artificial muscles. *Science*, **2019**, 365, 150-155	33.3	120
224	Moisture Sensitive Smart Yarns and Textiles from Self-Balanced Silk Fiber Muscles. *Advanced Functional Materials*, **2019**, 29, 1808241	15.6	119
223	High-power biofuel cell textiles from woven biscrolled carbon nanotube yarns. *Nature Communications*, **2014**, 5, 3928	17.4	117
222	High-Performance Biscrolled MXene/Carbon Nanotube Yarn Supercapacitors. *Small*, **2018**, 14, e1802225	11	114
221	Transparent carbon nanotube sheets as 3-D charge collectors in organic solar cells. *Solar Energy Materials and Solar Cells*, **2007**, 91, 416-419	6.4	113
220	Fuel-powered artificial muscles. *Science*, **2006**, 311, 1580-3	33.3	113
219	Improvement of system capacitance via weavable superelastic biscrolled yarn supercapacitors. *Nature Communications*, **2016**, 7, 13811	17.4	111
218	Multifunctional carbon nanotube yarns and transparent sheets: Fabrication, properties, and applications. *Physica B: Condensed Matter*, **2007**, 394, 339-343	2.8	109
217	High Power Density Electrochemical Thermocells for Inexpensively Harvesting Low-Grade Thermal Energy. *Advanced Materials*, **2017**, 29, 1605652	24	108
216	Electrochemical actuation of carbon nanotube yarns. *Smart Materials and Structures*, **2007**, 16, S243-S249	3.4	108
215	Electron field emission from transparent multiwalled carbon nanotube sheets for inverted field emission displays. *Carbon*, **2010**, 48, 41-46	10.4	107
214	Downsized Sheath-Core Conducting Fibers for Weavable Superelastic Wires, Biosensors, Supercapacitors, and Strain Sensors. *Advanced Materials*, **2016**, 28, 4998-5007	24	107
213	Underwater sound generation using carbon nanotube projectors. *Nano Letters*, **2010**, 10, 2374-80	11.5	106
212	Structural model for dry-drawing of sheets and yarns from carbon nanotube forests. *ACS Nano*, **2011**, 5, 985-93	16.7	105
211	Hybrid carbon nanotube yarn artificial muscle inspired by spider dragline silk. *Nature Communications*, **2014**, 5, 3322	17.4	102
210	Pool Boiling Experiments on Multiwalled Carbon Nanotube (MWCNT) Forests. *Journal of Heat Transfer*, **2006**, 128, 1335-1342	1.8	101

209	A laser Raman study of the stress dependence of vibrational frequencies of a monocrystalline polydiacetylene. *Journal of Chemical Physics*, **1977**, 66, 2731-2736	3.9	100
208	Spinnable carbon nanotube forests grown on thin, flexible metallic substrates. *Carbon*, **2010**, 48, 3621-3627	6.2	99
207	Auxetic materials: avoiding the shrink. *Nature*, **2003**, 425, 667	50.4	97
206	Highly Conductive Carbon Nanotube-Graphene Hybrid Yarn. *Advanced Functional Materials*, **2014**, 24, 5859-5865	15.6	95
205	Chemistry. Dangerously seeking linear carbon. *Science*, **2006**, 312, 1009-110	33.3	94
204	Ordered Mesoporous Nickel Sphere Arrays for Highly Efficient Electrocatalytic Water Oxidation. *ACS Catalysis*, **2016**, 6, 1446-1450	13.1	89
203	Optical, electrical, and electromechanical properties of hybrid graphene/carbon nanotube films. *Advanced Materials*, **2015**, 27, 3053-9	24	88
202	Variations of the Geometries and Band Gaps of Single-Walled Carbon Nanotubes and the Effect of Charge Injection. *Journal of Physical Chemistry B*, **2003**, 107, 6924-6931	3.4	84
201	Dimensional changes as a function of charge injection in single-walled carbon nanotubes. *Journal of the American Chemical Society*, **2002**, 124, 15076-80	16.4	82
200	Stretchable Triboelectric Fiber for Self-powered Kinematic Sensing Textile. *Scientific Reports*, **2016**, 6, 35153	4.9	82
199	Microscopically Buckled and Macroscopically Coiled Fibers for Ultra-Stretchable Supercapacitors. *Advanced Energy Materials*, **2017**, 7, 1602021	21.8	81
198	A reel-wound carbon nanotube polarizer for terahertz frequencies. *Nano Letters*, **2011**, 11, 4227-31	11.5	81
197	Laser-like emission in opal photonic crystals. *Optics Communications*, **1999**, 162, 241-246	2	81
196	Superior Rechargeability and Efficiency of Lithium□Oxygen Batteries: Hierarchical Air Electrode Architecture Combined with a Soluble Catalyst. *Angewandte Chemie*, **2014**, 126, 4007-4012	3.6	80
195	Electrochemical Properties of Single-Wall Carbon Nanotube Electrodes. *Journal of the Electrochemical Society*, **2003**, 150, E409	3.9	79
194	Electrochemical quartz crystal microbalance studies of single-wall carbon nanotubes in aqueous and non-aqueous solutions. *Electrochimica Acta*, **2000**, 46, 509-517	6.7	78
193	Sequentially bridged graphene sheets with high strength, toughness, and electrical conductivity. *Proceedings of the National Academy of Sciences of the United States of America*, **2018**, 115, 5359-5364	11.5	77
192	All-solid-state carbon nanotube torsional and tensile artificial muscles. *Nano Letters*, **2014**, 14, 2664-9	11.5	77

191	Multiwalled carbon nanotube sheets as transparent electrodes in high brightness organic light-emitting diodes. *Applied Physics Letters*, **2008**, 93, 183506	3.4	75
190	Compact and low-cost humanoid hand powered by nylon artificial muscles. *Bioinspiration and Biomimetics*, **2017**, 12, 026004	2.6	74
189	Tunable, Fast, Robust Hydrogel Actuators Based on Evaporation-Programmed Heterogeneous Structures. *Chemistry of Materials*, **2017**, 29, 9793-9801	9.6	73
188	Strong, Twist-Stable Carbon Nanotube Yarns and Muscles by Tension Annealing at Extreme Temperatures. *Advanced Materials*, **2016**, 28, 6598-605	24	72
187	Hybrid nanomembranes for high power and high energy density supercapacitors and their yarn application. *ACS Nano*, **2012**, 6, 327-34	16.7	72
186	Electro-reflectance spectra of one-dimensional excitons in polydiacetylene crystals. *Chemical Physics*, **1984**, 88, 437-442	2.3	70
185	Electrochemically Powered, Energy-Conserving Carbon Nanotube Artificial Muscles. *Advanced Materials*, **2017**, 29, 1700870	24	69
184	A Bi-Sheath Fiber Sensor for Giant Tensile and Torsional Displacements. *Advanced Functional Materials*, **2017**, 27, 1702134	15.6	68
183	Fibers of reduced graphene oxide nanoribbons. *Nanotechnology*, **2012**, 23, 235601	3.4	68
182	Niobium Nanowire Yarns and their Application as Artificial Muscles. *Advanced Functional Materials*, **2013**, 23, 4311-4316	15.6	67
181	Molecular, Supramolecular, and Macromolecular Motors and Artificial Muscles. *MRS Bulletin*, **2009**, 34, 671-681	3.2	67
180	Torsional refrigeration by twisted, coiled, and supercoiled fibers. *Science*, **2019**, 366, 216-221	33.3	65
179	Highly conducting charge-transfer complexes of a processible polymer: poly(p-phenylene sulphide). *Journal of the Chemical Society Chemical Communications*, **1980**, 348		65
178	Efficient, Absorption-Powered Artificial Muscles Based on Carbon Nanotube Hybrid Yarns. *Small*, **2015**, 11, 3113-8	11	64
177	Oriented graphene nanoribbon yarn and sheet from aligned multi-walled carbon nanotube sheets. *Advanced Materials*, **2012**, 24, 5695-701	24	64
176	The Optical Properties of Porous Opal Crystals Infiltrated with Organic Molecules. *Japanese Journal of Applied Physics*, **1997**, 36, L714-L717	1.4	64
175	Amphiphilic helical peptide enhances the uptake of single-walled carbon nanotubes by living cells. *Experimental Biology and Medicine*, **2007**, 232, 1236-44	3.7	64
174	Flexible, stretchable and weavable piezoelectric fiber. *Advanced Engineering Materials*, **2015**, 17, 1270-1275	3.5	63

173	Intelligently Actuating Liquid Crystal Elastomer-Carbon Nanotube Composites. *Advanced Functional Materials*, **2019**, 29, 1905063	15.6	62
172	Temperature-independent capacitance of carbon-based supercapacitor from −100 to 60 °C. *Energy Storage Materials*, **2019**, 22, 323-329	19.4	61
171	Ranking the affinity of aromatic residues for carbon nanotubes by using designed surfactant peptides. *Journal of Peptide Science*, **2008**, 14, 139-51	2.1	61
170	Fullereneynes: a new family of porous fullerenes. *Chemical Physics Letters*, **1993**, 204, 8-14	2.5	61
169	Artificial muscles based on polypyrrole/carbon nanotube laminates. *Advanced Materials*, **2011**, 23, 2966-70	24	60
168	Towards ionic liquid-based thermoelectrochemical cells for the harvesting of thermal energy. *Electrochimica Acta*, **2013**, 113, 87-93	6.7	58
167	Template synthesis of ordered arrays of mesoporous titania spheres. *Chemical Communications*, **2010**, 46, 1872-4	5.8	58
166	Enhanced rate performance of flexible and stretchable linear supercapacitors based on polyaniline@Au@carbon nanotube with ultrafast axial electron transport. *Journal of Power Sources*, **2017**, 340, 302-308	8.9	55
165	Electrical stimulation of myoblast proliferation and differentiation on aligned nanostructured conductive polymer platforms. *Advanced Healthcare Materials*, **2012**, 1, 801-8	10.1	55
164	Actuators of individual carbon nanotubes. *Current Applied Physics*, **2002**, 2, 311-314	2.6	55
163	Strong, Conductive, Foldable Graphene Sheets by Sequential Ionic and Bridging. *Advanced Materials*, **2018**, 30, e1802733	24	53
162	Biomolecule based fiber supercapacitor for implantable device. *Nano Energy*, **2018**, 47, 385-392	17.1	52
161	Preparation and electrochemical characterization of porous SWNTPPy nanocomposite sheets for supercapacitor applications. *Synthetic Metals*, **2008**, 158, 638-641	3.6	51
160	Arbitrarily Shaped Fiber Assemblies from Spun Carbon Nanotube Gel Fibers. *Advanced Functional Materials*, **2007**, 17, 2918-2924	15.6	50
159	Peptide cross-linking modulated stability and assembly of peptide-wrapped single-walled carbon nanotubes. *Journal of Materials Chemistry*, **2005**, 15, 1734		50
158	Materials science. Muscles made from metal. *Science*, **2003**, 300, 268-9	33.3	50
157	Preparation and characterization of hybrid conducting polymer-carbon nanotube yarn. *Nanoscale*, **2012**, 4, 940-5	7.7	49
156	Bulk FePt-based nanocomposite magnets with enhanced exchange coupling. *Journal of Applied Physics*, **2007**, 102, 023908	2.5	48

155	Increased actuation rate of electromechanical carbon nanotube actuators using potential pulses with resistance compensation. *Smart Materials and Structures*, **2003**, 12, 549-555	3.4	48
154	Bio-inspired, Moisture-Powered Hybrid Carbon Nanotube Yarn Muscles. *Scientific Reports*, **2016**, 6, 23016	4.9	47
153	Au-doped polyacrylonitrile-polyaniline core-shell electrospun nanofibers having high field-effect mobilities. *Small*, **2011**, 7, 597-600	11	46
152	Structure and process-dependent properties of solid-state spun carbon nanotube yarns. *Journal of Physics Condensed Matter*, **2010**, 22, 334221	1.8	46
151	Fractionation of SWNT/nucleic acid complexes by agarose gel electrophoresis. *Nanotechnology*, **2006**, 17, 4263-9	3.4	46
150	Carbon Nanotube Yarn-Based Glucose Sensing Artificial Muscle. *Small*, **2016**, 12, 2085-91	11	45
149	Increasing the efficiency of thermoacoustic carbon nanotube sound projectors. *Nanotechnology*, **2013**, 24, 235501	3.4	44
148	Harvesting temperature fluctuations as electrical energy using torsional and tensile polymer muscles. *Energy and Environmental Science*, **2015**, 8, 3336-3344	35.4	43
147	Carbon Nanotube Electroactive Polymer Materials: Opportunities and Challenges. *MRS Bulletin*, **2008**, 33, 215-224	3.2	43
146	NMR, Calorimetric, and Diffraction Study of Molecular Motion in Crystalline Carboranes. *Journal of Chemical Physics*, **1970**, 53, 3781-3789	3.9	43
145	High-strength scalable graphene sheets by freezing stretch-induced alignment. *Nature Materials*, **2021**, 20, 624-631	27	42
144	Directional growth of polypyrrole and polythiophene wires. *Applied Physics Letters*, **2009**, 94, 033104	3.4	41
143	Metal sphere photonic crystals by nanomolding. *Journal of the American Chemical Society*, **2001**, 123, 763-4	16.4	41
142	Biothermal sensing of a torsional artificial muscle. *Nanoscale*, **2016**, 8, 3248-53	7.7	40
141	iGrab: hand orthosis powered by twisted and coiled polymer muscles. *Smart Materials and Structures*, **2017**, 26, 105048	3.4	39
140	Alternative nanostructures for thermophones. *ACS Nano*, **2015**, 9, 4743-56	16.7	38
139	Three-dimensionally ordered macro-/mesoporous Ni as a highly efficient electrocatalyst for the hydrogen evolution reaction. *Journal of Materials Chemistry A*, **2015**, 3, 11367-11375	13	37
138	Electrodeposition of □MnO/□MnO on Carbon Nanotube for Yarn Supercapacitor. *Scientific Reports* , **2019**, 9, 11271	4.9	36

137	Load transfer between cross-linked walls of a carbon nanotube. *Physical Review B*, **2010**, 81,	3.3	36
136	Photoinduced Optical Transparency in Dye-Sensitized Solar Cells Containing Graphene Nanoribbons. *Journal of Physical Chemistry C*, **2011**, 115, 25125-25131	3.8	35
135	General Synthesis of 3D Ordered Macro-/Mesoporous Materials by Templating Mesoporous Silica Confined in Opals. *Chemistry of Materials*, **2018**, 30, 1617-1624	9.6	34
134	Polar-Electrode-Bridged Electroluminescent Displays: 2D Sensors Remotely Communicating Optically. *Advanced Materials*, **2017**, 29, 1703552	24	34
133	Unipolar stroke, electroosmotic pump carbon nanotube yarn muscles. *Science*, **2021**, 371, 494-498	33.3	34
132	Catalytic Twist-Spun Yarns of Nitrogen-Doped Carbon Nanotubes. *Advanced Functional Materials*, **2012**, 22, 1069-1075	15.6	33
131	Regulation of morphogenesis and neural differentiation of human mesenchymal stem cells using carbon nanotube sheets. *Integrative Biology (United Kingdom)*, **2012**, 4, 587-94	3.7	33
130	Carbon Nanotube/Platinum (Pt) Sheet as an Improved Cathode for Microbial Fuel Cells. *Energy & Fuels*, **2010**, 24, 5897-5902	4.1	33
129	Additive Functionalization and Embroidery for Manufacturing Wearable and Washable Textile Supercapacitors. *Advanced Functional Materials*, **2020**, 30, 1910541	15.6	32
128	Weavable asymmetric carbon nanotube yarn supercapacitor for electronic textiles.. *RSC Advances*, **2018**, 8, 13112-13120	3.7	32
127	Simple and strong: twisted silver painted nylon artificial muscle actuated by Joule heating **2014**,		32
126	Hydrogen-fuel-powered bell segments of biomimetic jellyfish. *Smart Materials and Structures*, **2012**, 21, 045013	3.4	30
125	Mirage effect from thermally modulated transparent carbon nanotube sheets. *Nanotechnology*, **2011**, 22, 435704	3.4	27
124	Electrochemical graphene/carbon nanotube yarn artificial muscles. *Sensors and Actuators B: Chemical*, **2019**, 286, 237-242	8.5	26
123	Highly loaded MXene/carbon nanotube yarn electrodes for improved asymmetric supercapacitor performance. *MRS Communications*, **2019**, 9, 114-121	2.7	26
122	Probe Sensor Using Nanostructured Multi-Walled Carbon Nanotube Yarn for Selective and Sensitive Detection of Dopamine. *Sensors*, **2017**, 17,	3.8	26
121	Thermal management of thermoacoustic sound projectors using a free-standing carbon nanotube aerogel sheet as a heat source. *Nanotechnology*, **2014**, 25, 405704	3.4	25
120	Carbon Nanotube Yarn Actuators: An Electrochemical Impedance Model. *Journal of the Electrochemical Society*, **2009**, 156, K97	3.9	25

119	Electrochemically Tuned Properties for Electrolyte-Free Carbon Nanotube Sheets. *Advanced Functional Materials*, **2009**, 19, 2266-2272	15.6	25
118	Aligned, isotropic and patterned carbon nanotube substrates that control the growth and alignment of Chinese hamster ovary cells. *Nanotechnology*, **2011**, 22, 205102	3.4	25
117	. *IEEE/ASME Transactions on Mechatronics*, **2011**, 16, 90-97	5.5	24
116	Nylon-muscle-actuated robotic finger **2015**,		23
115	Biscrolled Carbon Nanotube Yarn Structured Silver-Zinc Battery. *Scientific Reports*, **2018**, 8, 11150	4.9	23
114	Large-Stroke Electrochemical Carbon Nanotube/Graphene Hybrid Yarn Muscles. *Small*, **2018**, 14, e1801883	8.3	23
113	Ag/MnO Composite Sheath-Core Structured Yarn Supercapacitors. *Scientific Reports*, **2018**, 8, 13309	4.9	23
112	Enhancing the strength, toughness, and electrical conductivity of twist-spun carbon nanotube yarns by bridging. *Carbon*, **2019**, 150, 268-274	10.4	22
111	Stretchable Fiber Biofuel Cell by Rewrapping Multiwalled Carbon Nanotube Sheets. *Nano Letters*, **2018**, 18, 5272-5278	11.5	22
110	Primary liver cells cultured on carbon nanotube substrates for liver tissue engineering and drug discovery applications. *ACS Applied Materials & Interfaces*, **2014**, 6, 10373-80	9.5	22
109	Carbon nanotubes elastomer actuator driven electrothermally by low-voltage. *Nanoscale Advances*, **2019**, 1, 965-968	5.1	21
108	Torsional behaviors of polymer-infiltrated carbon nanotube yarn muscles studied with atomic force microscopy. *Nanoscale*, **2015**, 7, 2489-96	7.7	21
107	Free-standing nanocomposites with high conductivity and extensibility. *Nanotechnology*, **2013**, 24, 165401	3.4	21
106	Carbon Nanotube Yarns as High Load Actuators and Sensors. *Advances in Science and Technology*, **2008**, 61, 65-74	0.1	21
105	Superconductivity in Pb inverse opal. *Physica C: Superconductivity and Its Applications*, **2007**, 453, 15-23	1.3	21
104	Dimensional change as a function of charge injection in graphite intercalation compounds: A density functional theory study. *Physical Review B*, **2003**, 68,	3.3	21
103	Optical characteristics of SiO2 photonic band-gap crystal with ferroelectric perovskite oxide. *Applied Physics Letters*, **2002**, 81, 4440-4442	3.4	21
102	Wearable Energy Generating and Storing Textile Based on Carbon Nanotube Yarns. *Advanced Functional Materials*, **2020**, 30, 2000411	15.6	21

101	Stability of carbon nanotube yarn biofuel cell in human body fluid. *Journal of Power Sources*, **2015**, 286, 103-108	8.9	20
100	Bio-inspired Hybrid Carbon Nanotube Muscles. *Scientific Reports*, **2016**, 6, 26687	4.9	20
99	Highly stretchable hybrid nanomembrane supercapacitors. *RSC Advances*, **2016**, 6, 24756-24759	3.7	20
98	Nanotube network transistors from peptide-wrapped single-walled carbon nanotubes. *Small*, **2005**, 1, 820-3	11	20
97	Terahertz surface plasmon polaritons on freestanding multi-walled carbon nanotube aerogel sheets. *Optical Materials Express*, **2012**, 2, 782	2.6	19
96	Dimensional changes as a function of charge injection for trans-polyacetylene: A density functional theory study. *Journal of Chemical Physics*, **2002**, 117, 7691-7697	3.9	19
95	Enhancing the Work Capacity of Electrochemical Artificial Muscles by Coiling Plies of Twist-Released Carbon Nanotube Yarns. *ACS Applied Materials & Interfaces*, **2019**, 11, 13533-13537	9.5	18
94	Flexible, ultralight, porous superconducting yarns containing shell-core magnesium diboride-carbon nanotube nanofibers. *Advanced Materials*, **2014**, 26, 7510-5	24	17
93	Silver Nanowires on Carbon Nanotube Aerogel Sheets for Flexible, Transparent Electrodes. *ACS Applied Materials & Interfaces*, **2019**, 11, 32235-32243	9.5	16
92	Reconstructed Ribbon Edges in Thermally Reduced Graphene Nanoribbons. *Journal of Physical Chemistry C*, **2012**, 116, 24006-24015	3.8	16
91	Photon drag effect in carbon nanotube yarns. *Applied Physics Letters*, **2009**, 94, 231112	3.4	16
90	Three-dimensionally periodic conductive nanostructures: network versus cermet topologies for metallic PBG. *Synthetic Metals*, **2001**, 116, 419-426	3.6	16
89	Electrical Properties of a Periodic Porous Carbon Replica of Opal. *Japanese Journal of Applied Physics*, **1999**, 38, 4926-4929	1.4	16
88	Diacetylene monomers and polymers with chiral substituents: structure, solid-state polymerization, and properties. *Journal of the American Chemical Society*, **1982**, 104, 509-516	16.4	16
87	Enhancement of electromagnetic interference shielding effectiveness with alignment of spinnable multiwalled carbon nanotubes. *Carbon*, **2019**, 142, 528-534	10.4	16
86	Humidity- and Water-Responsive Torsional and Contractile Lotus Fiber Yarn Artificial Muscles. *ACS Applied Materials & Interfaces*, **2021**, 13, 6642-6649	9.5	16
85	Highly effective sulfated zirconia nanocatalysts grown out of colloidal silica at high temperature. *Chemistry - A European Journal*, **2004**, 10, 4750-4	4.8	15
84	Topochemical strategies and experimental results for the rational synthesis of carbon nanotubes of one specified type. *Synthetic Metals*, **2004**, 141, 87-92	3.6	15

83	A deformable robot with tensegrity structure using nylon artificial muscle **2016**,		15
82	Self-Powered Coiled Carbon-Nanotube Yarn Sensor for Gastric Electronics. *ACS Sensors*, **2019**, 4, 2893-2899	9.2	14
81	Thermal actuation of graphene oxide nanoribbon mats. *Chemical Physics Letters*, **2011**, 505, 31-36	2.5	14
80	CVD synthesis of carbon-based metallic photonic crystals. *Scripta Materialia*, **1999**, 12, 1089-1095		14
79	Retrospective: Richard E. Smalley (1943-2005). *Science*, **2005**, 310, 1916	33.3	13
78	Mediator-free carbon nanotube yarn biofuel cell. *RSC Advances*, **2016**, 6, 48346-48350	3.7	13
77	Thermoacoustic sound projector: exceeding the fundamental efficiency of carbon nanotubes. *Nanotechnology*, **2018**, 29, 325704	3.4	13
76	Brazing techniques for the fabrication of biocompatible carbon-based electronic devices. *Carbon*, **2016**, 107, 180-189	10.4	12
75	Temperature-Responsive Tensile Actuator Based on Multi-walled Carbon Nanotube Yarn. *Nano-Micro Letters*, **2016**, 8, 254-259	19.5	12
74	Orthogonal pattern of spinnable multiwall carbon nanotubes for electromagnetic interference shielding effectiveness. *Carbon*, **2019**, 152, 33-39	10.4	11
73	Electrochemical properties of aligned nanotube arrays: basis of new electromechanical actuators **2000**,		11
72	The Power of Fiber Twist. *Accounts of Chemical Research*, **2021**, 54, 2624-2636	24.3	11
71	Controllable Preparation of Ordered and Hierarchically Buckled Structures for Inflatable Tumor Ablation, Volumetric Strain Sensor, and Communication via Inflatable Antenna. *ACS Applied Materials & Interfaces*, **2019**, 11, 10862-10873	9.5	10
70	Advancements toward a high-power, carbon nanotube, thin-film loudspeaker. *Noise Control Engineering Journal*, **2014**, 62, 360-367	0.6	10
69	Conductive functional biscrolled polymer and carbon nanotube yarns. *RSC Advances*, **2013**, 3, 24028	3.7	10
68	Weak-acceptor-polyacrylonitrile/donor-polyaniline core–shell nanofibers: A novel 1D polymeric heterojunction with high photoconductive properties. *Organic Electronics*, **2012**, 13, 2319-2325	3.5	10
67	Thermal properties of carbon inverse opal photonic crystals. *Journal of Luminescence*, **2007**, 125, 11-17	3.8	10
66	Predicted Confinement-Enhanced Stability and Extraordinary Mechanical Properties for Carbon Nanotube Wrapped Chains of Linear Carbon. *ACS Nano*, **2020**,	16.7	10

65	The Solid State Synthesis and Properties of Photoconducting, Metallic, and Superconducting Polymer Crystals **1977**, 205-233		10
64	Programmable and Thermally Hardening Composite Yarn Actuators with a Wide Range of Operating Temperature. *Advanced Materials Technologies*, **2020**, 5, 2000329	6.8	9
63	Harvesting electrical energy from torsional thermal actuation driven by natural convection. *Scientific Reports*, **2018**, 8, 8712	4.9	9
62	Bioinspired Multifunctional Ceramic Platelet-Reinforced Piezoelectric Polymer Composite . *Advanced Engineering Materials*, **2017**, 19, 1600570	3.5	9
61	A tough nanofiber hydrogel incorporating ferritin. *Applied Physics Letters*, **2008**, 93, 163902	3.4	9
60	Self-Powered, Electrochemical Carbon Nanotube Pressure Sensors for Wave Monitoring. *Advanced Functional Materials*, **2020**, 30, 2004564	15.6	9
59	Magnetic torsional actuation of carbon nanotube yarn artificial muscle.. *RSC Advances*, **2018**, 8, 17421-17425	3.7	9
58	The Interfacial Shear Strength of Carbon Nanotube Sheet Modified Carbon Fiber Composites. *Conference Proceedings of the Society for Experimental Mechanics*, **2021**, 25-32	0.3	9
57	A multiscale model to study the enhancement in the compressive strength of multi-walled CNT sheet overwrapped carbon fiber composites. *Composite Structures*, **2019**, 219, 170-178	5.3	8
56	High performance electrochemical and electrothermal artificial muscles from twist-spun carbon nanotube yarn. *Nano Convergence*, **2015**, 2,	9.2	8
55	Thermoacoustic excitation of sonar projector plates by free-standing carbon nanotube sheets. *Journal Physics D: Applied Physics*, **2014**, 47, 355302	3	8
54	Carbon-nanotube-modified electrodes for the direct bioelectrochemistry of pseudoazurin. *Nanobiotechnology*, **2005**, 1, 083-092		8
53	Asymmetric crystal topography of diacetylene and polydiacetylene macroscopic single crystals. *Journal of Applied Physics*, **1981**, 52, 7129-7135	2.5	8
52	Electrical energy harvesting from ferritin biscrolled carbon nanotube yarn. *Biosensors and Bioelectronics*, **2020**, 164, 112318	11.8	8
51	Using ultra-thin interlaminar carbon nanotube sheets to enhance the mechanical and electrical properties of carbon fiber reinforced polymer composites. *Composites Part B: Engineering*, **2021**, 216, 108842	10	8
50	Architectured materials: Straining to expand entanglements. *Nature Materials*, **2016**, 15, 7-8	27	7
49	Protic ionic liquid-based thermoelectrochemical cells for the harvesting of waste heat.. *Materials Research Society Symposia Proceedings*, **2013**, 1575, 1		7
48	Bidirectional Core Sandwich Structure of Reduced Graphene Oxide and Spinnable Multiwalled Carbon Nanotubes for Electromagnetic Interference Shielding Effectiveness. *ACS Applied Materials & Interfaces*, **2020**, 12, 46883-46891	9.5	7

47	Nanotube aerogel sheet flutter for actuation, power generation, and infrasound detection. *Scientific Reports*, **2014**, 4, 6105	4.9	6
46	ELECTROPHORETIC FRACTIONATION OF CARBON NANOTUBE DISPERSIONS ON AGAROSE GELS. *International Journal of Nanoscience*, **2007**, 06, 1-7	0.6	6
45	Conducting polymer, carbon nanotube, and hybrid actuator materials **2001**, 4329, 199		6
44	The Structure of the Morpholine Iodophenylacetylene Complex. *Journal of Organic Chemistry*, **1964**, 29, 964-965	4.2	6
43	Tensile fatigue behavior of single carbon nanotube yarns. *Journal of Materials Science*, **2018**, 53, 11426-11432	4.5	6
42	Design of a 3D printed lightweight orthotic device based on twisted and coiled polymer muscle: iGrab hand orthosis **2017**,		5
41	Conducting Fibers: Downsized Sheath-Core Conducting Fibers for Weavable Superelastic Wires, Biosensors, Supercapacitors, and Strain Sensors (Adv. Mater. 25/2016). *Advanced Materials*, **2016**, 28, 4946	24	5
40	Amyloidogenic peptide/single-walled carbon nanotube composites based on tau-protein-related peptides derived from AcPHF6: preparation and dispersive properties. *Journal of Physical Chemistry B*, **2013**, 117, 7593-604	3.4	5
39	Two-Ply Carbon Nanotube Fiber-Typed Enzymatic Biofuel Cell Implanted in Mice. *IEEE Transactions on Nanobioscience*, **2020**, 19, 333-338	3.4	4
38	Automated quantification of neurite outgrowth orientation distributions on patterned surfaces. *Journal of Neural Engineering*, **2014**, 11, 046006	5	4
37	Carbon nanotube foils for electron stripping in tandem accelerators. *Nuclear Instruments & Methods in Physics Research B*, **2007**, 261, 44-48	1.2	4
36	Inverse gold photonic crystals and conjugated polymer coated opals for functional materials. *Physica B: Condensed Matter*, **2003**, 338, 165-170	2.8	4
35	Electrochemically driven actuators from conducting polymers, hydrogels, and carbon nanotubes **2001**,		4
34	Chapter 13:Bio-inspired Polymer Artificial Muscles. *RSC Polymer Chemistry Series*, **2016**, 429-459	1.3	4
33	Three-dimensional carbon nanotube networks from beta zeolite templates: Thermal stability and mechanical properties. *Computational Materials Science*, **2020**, 182, 109781	3.2	3
32	Carbon nanotube yarns: sensors, actuators, and current carriers **2008**,		3
31	Graphyne nanotubes: New Families of Carbon Nanotubes. *Materials Research Society Symposia Proceedings*, **2002**, 739, 561		3
30	Fabrication, morphology, and actuation from novel single-wall carbon nanotube/Nafion composites **2002**,		3

29	Structure, properties, and thermodynamics of poly(carbon dichalcogenides). *Macromolecules*, **1988**, 21, 1832-1838	5.5	3
28	Tensile actuators of carbon nanotube coiled yarn based on polydiacetylene–Pluronic copolymers as temperature indicators. *Smart Materials and Structures*, **2016**, 25, 075021	3.4	3
27	Self-Powered Carbon Nanotube Yarn for Acceleration Sensor Application. *IEEE Transactions on Industrial Electronics*, **2021**, 68, 2676-2683	8.9	3
26	Bounds on the in-plane Poisson's ratios and the in-plane linear and area compressibilities for sheet crystals. *Journal of the Mechanics and Physics of Solids*, **2021**, 152, 104409	5	3
25	More powerful twistron carbon nanotube yarn mechanical energy harvesters.. *Advanced Materials*, **2022**, e2201826	24	3
24	Modeling the Compressive Buckling Strain as a Function of the Nanocomposite Interphase Thickness in a Carbon Nanotube Sheet Wrapped Carbon Fiber Composite. *Journal of Applied Mechanics, Transactions ASME*, **2019**, 86,	2.7	2
23	Subwoofer and nanotube butterfly acoustic flame extinction. *Journal Physics D: Applied Physics*, **2017**, 50, 29LT01	3	2
22	Sample modulated Raman spectroscopy and frequency modulated visible light--resonance Raman spectrum of a polydiacetylene fiber. *Review of Scientific Instruments*, **1978**, 49, 1725	1.7	2
21	Carbon Nanotube Actuators: Synthesis, Properties, and Performance261-295		2
20	Fast Large-Stroke Sheath-Driven Electrothermal Artificial Muscles with High Power Densities. *Advanced Functional Materials*,2200591	15.6	2
19	Ultraviolet-induced irreversible tensile actuation of diacetylene/nylon microfibers. *Smart Materials and Structures*, **2016**, 25, 075031	3.4	1
18	Retrospective. Alan G. MacDiarmid (1927-2007). *Science*, **2007**, 315, 1678	33.3	1
17	Pneumatic Actuator Response from Carbon Nanotube Sheets. *Materials Research Society Symposia Proceedings*, **2001**, 706, 1		1
16	Simulation of surface asperities on a carbon fiber using molecular dynamics and fourier series decomposition to predict interfacial shear strength in polymer matrix composites. *Composite Interfaces*,1-24	2.3	1
15	Improved thermoacoustic sound projectors by vibration mode modification. *Journal of Sound and Vibration*, **2022**, 524, 116753	3.9	1
14	Artificial Muscle: Carbon Nanotube Yarn-Based Glucose Sensing Artificial Muscle (Small 15/2016). *Small*, **2016**, 12, 2100-2100	11	1
13	The strongest and toughest predicted materials: Linear atomic chains without a Peierls instability. *Matter*, **2022**, 5, 1192-1203	12.7	1
12	Preparation, analysis, and x-ray diffraction identification of barbiturate silver salts. *Analytical Biochemistry*, **1962**, 3, 150-7	3.1	0

11	Shaping nanomaterials by short electrical pulses. *Nanotechnology*, **2020**, 31, 365302	3.4	0
10	Electrothermally Driven Carbon-Based Materials as EAPs: Fundamentals and Device Configurations **2016**, 455-470		
9	Electrochemically Driven Carbon-Based Materials as EAPs: Fundamentals and Device Configurations **2016**, 439-454		
8	Electrothermally Driven Carbon-Based Materials as EAPs: Fundamentals and Device Configurations **2016**, 1-16		
7	Carbon Nanotube Yarn Actuators: An Electrochemical Impedance Model. *ECS Transactions*, **2008**, 13, 13-27	1	
6	Optical Fiber Switch Based on Carbon Nanotube Actuation. *Materials Research Society Symposia Proceedings*, **2003**, 772, 1021		
5	AFM Measurements of Long, Isolated Single-Walled Carbon Nanotubes Wrapped with Peptide. *Microscopy and Microanalysis*, **2004**, 10, 138-139	0.5	
4	Hydrogen Storage in Carbon Nanoscrolls: A Molecular Dynamics Study. *Materials Research Society Symposia Proceedings*, **2005**, 885, 1		
3	Electrodeposition of Three-Dimensionally Periodic Metal Meshes and Spheres. *Materials Research Society Symposia Proceedings*, **2000**, 636, 9161		
2	Electrochemically Driven Carbon-Based Materials as EAPs: Fundamentals and Device Configurations **2016**, 1-16		
1	Understanding the low frequency response of carbon nanotube thermoacoustic projectors. *Journal of Sound and Vibration*, **2021**, 498, 115940	3.9	