Don N Futaba

List of Publications by Citations

123 papers	12,823 citations	40 h-index	113 g-index
128 ext. papers	13,929 ext. citations	9.6 avg, IF	6.02 L-index

#	Paper	IF	Citations
123	A stretchable carbon nanotube strain sensor for human-motion detection. *Nature Nanotechnology*, **2011**, 6, 296-301	28.7	2393
122	Water-assisted highly efficient synthesis of impurity-free single-walled carbon nanotubes. *Science*, **2004**, 306, 1362-4	33.3	2233
121	Shape-engineerable and highly densely packed single-walled carbon nanotubes and their application as super-capacitor electrodes. *Nature Materials*, **2006**, 5, 987-94	27	1681
120	A black body absorber from vertically aligned single-walled carbon nanotubes. *Proceedings of the National Academy of Sciences of the United States of America*, **2009**, 106, 6044-7	11.5	534
119	Extracting the full potential of single-walled carbon nanotubes as durable supercapacitor electrodes operable at 4 V with high power and energy density. *Advanced Materials*, **2010**, 22, E235-41	24	528
118	One hundred fold increase in current carrying capacity in a carbon nanotube-copper composite. *Nature Communications*, **2013**, 4, 2202	17.4	338
117	Size-selective growth of double-walled carbon nanotube forests from engineered iron catalysts. *Nature Nanotechnology*, **2006**, 1, 131-6	28.7	309
116	Carbon nanotubes with temperature-invariant viscoelasticity from -196 degrees to 1000 degrees C. *Science*, **2010**, 330, 1364-8	33.3	280
115	Kinetics of water-assisted single-walled carbon nanotube synthesis revealed by a time-evolution analysis. *Physical Review Letters*, **2005**, 95, 056104	7.4	276
114	Carbon Nanotubes and Related Nanomaterials: Critical Advances and Challenges for Synthesis toward Mainstream Commercial Applications. *ACS Nano*, **2018**, 12, 11756-11784	16.7	239
113	High-power supercapacitor electrodes from single-walled carbon nanohorn/nanotube composite. *ACS Nano*, **2011**, 5, 811-9	16.7	231
112	Integrated three-dimensional microelectromechanical devices from processable carbon nanotube wafers. *Nature Nanotechnology*, **2008**, 3, 289-94	28.7	231
111	84% catalyst activity of water-assisted growth of single walled carbon nanotube forest characterization by a statistical and macroscopic approach. *Journal of Physical Chemistry B*, **2006**, 110, 8035-8	3.4	214
110	Highly Conductive Sheets from Millimeter-Long Single-Walled Carbon Nanotubes and Ionic Liquids: Application to Fast-Moving, Low-Voltage Electromechanical Actuators Operable in Air. *Advanced Materials*, **2009**, 21, 1582-1585	24	200
109	Revealing the secret of water-assisted carbon nanotube synthesis by microscopic observation of the interaction of water on the catalysts. *Nano Letters*, **2008**, 8, 4288-92	11.5	176
108	Synthesis of single- and double-walled carbon nanotube forests on conducting metal foils. *Journal of the American Chemical Society*, **2006**, 128, 13338-9	16.4	165
107	Exploring advantages of diverse carbon nanotube forests with tailored structures synthesized by supergrowth from engineered catalysts. *ACS Nano*, **2009**, 3, 108-14	16.7	134

106	Alignment control of carbon nanotube forest from random to nearly perfectly aligned by utilizing the crowding effect. *ACS Nano*, **2012**, 6, 5837-44	16.7	130
105	Compact and Light Supercapacitor Electrodes from a Surface-Only Solid by Opened Carbon Nanotubes with 2 200 m2 g−1 Surface Area. *Advanced Functional Materials*, **2010**, 20, 422-428	15.6	127
104	Improved and large area single-walled carbon nanotube forest growth by controlling the gas flow direction. *ACS Nano*, **2009**, 3, 4164-70	16.7	122
103	Carbon nanotube-copper exhibiting metal-like thermal conductivity and silicon-like thermal expansion for efficient cooling of electronics. *Nanoscale*, **2014**, 6, 2669-74	7.7	101
102	Role of subsurface diffusion and Ostwald ripening in catalyst formation for single-walled carbon nanotube forest growth. *Journal of the American Chemical Society*, **2012**, 134, 2148-53	16.4	101
101	Ion diffusion and electrochemical capacitance in aligned and packed single-walled carbon nanotubes. *Journal of the American Chemical Society*, **2010**, 132, 18017-9	16.4	101
100	Electrochemical doping of pure single-walled carbon nanotubes used as supercapacitor electrodes. *Carbon*, **2008**, 46, 1999-2001	10.4	97
99	General rules governing the highly efficient growth of carbon nanotubes. *Advanced Materials*, **2009**, 21, 4811-5	24	80
98	Length-dependent plasmon resonance in single-walled carbon nanotubes. *ACS Nano*, **2014**, 8, 9897-904	16.7	67
97	Existence and kinetics of graphitic carbonaceous impurities in carbon nanotube forests to assess the absolute purity. *Nano Letters*, **2009**, 9, 769-73	11.5	62
96	Controlling exfoliation in order to minimize damage during dispersion of long SWCNTs for advanced composites. *Scientific Reports*, **2014**, 4, 3907	4.9	57
95	Thermal Diffusivity of Single-Walled Carbon Nanotube Forest Measured by Laser Flash Method. *Japanese Journal of Applied Physics*, **2009**, 48, 05EC07	1.4	56
94	Nano-scale, planar and multi-tiered current pathways from a carbon nanotube-copper composite with high conductivity, ampacity and stability. *Nanoscale*, **2016**, 8, 3888-94	7.7	52
93	Diameter control of single-walled carbon nanotube forests from 1.3-3.0 nm by arc plasma deposition. *Scientific Reports*, **2014**, 4, 3804	4.9	52
92	Lithographically Integrated Microsupercapacitors for Compact, High Performance, and Designable Energy Circuits. *Advanced Energy Materials*, **2015**, 5, 1500741	21.8	50
91	Robust and Soft Elastomeric Electronics Tolerant to Our Daily Lives. *Nano Letters*, **2015**, 15, 5716-23	11.5	47
90	A sweet spot for highly efficient growth of vertically aligned single-walled carbon nanotube forests enabling their unique structures and properties. *Nanoscale*, **2016**, 8, 162-71	7.7	47
89	Interplay of wall number and diameter on the electrical conductivity of carbon nanotube thin films. *Carbon*, **2014**, 67, 318-325	10.4	47

88	A dispersion strategy: dendritic carbon nanotube network dispersion for advanced composites. *Chemical Science*, **2013**, 4, 727-733	9.4	45
87	Diameter and density control of single-walled carbon nanotube forests by modulating Ostwald ripening through decoupling the catalyst formation and growth processes. *Small*, **2013**, 9, 3584-92	11	45
86	Growth control of single-walled, double-walled, and triple-walled carbon nanotube forests by a priori electrical resistance measurement of catalyst films. *Carbon*, **2011**, 49, 4368-4375	10.4	44
85	Gas dwell time control for rapid and long lifetime growth of single-walled carbon nanotube forests. *Nano Letters*, **2011**, 11, 3617-23	11.5	43
84	Influence of matching solubility parameter of polymer matrix and CNT on electrical conductivity of CNT/rubber composite. *Scientific Reports*, **2014**, 4, 7232	4.9	42
83	Influence of lengths of millimeter-scale single-walled carbon nanotube on electrical and mechanical properties of buckypaper. *Nanoscale Research Letters*, **2013**, 8, 546	5	39
82	Water-Assisted Highly Efficient Synthesis of Single-Walled Carbon Nanotubes Forests from Colloidal Nanoparticle Catalysts *Journal of Physical Chemistry C*, **2007**, 111, 17961-17965	3.8	39
81	Diagnostics and growth control of single-walled carbon nanotube forests using a telecentric optical system for in situ height monitoring. *Applied Physics Letters*, **2008**, 93, 143115	3.4	37
80	Tailoring temperature invariant viscoelasticity of carbon nanotube material. *Nano Letters*, **2011**, 11, 3279-84	11.5	36
79	Carbon nanotubes with temperature-invariant creep and creep-recovery from -190 to 970 °C. *Advanced Materials*, **2011**, 23, 3686-91	24	35
78	A background level of oxygen-containing aromatics for synthetic control of carbon nanotube structure. *Journal of the American Chemical Society*, **2009**, 131, 15992-3	16.4	34
77	Macroscopic wall number analysis of single-walled, double-walled, and few-walled carbon nanotubes by X-ray diffraction. *Journal of the American Chemical Society*, **2011**, 133, 5716-9	16.4	32
76	Dual porosity single-walled carbon nanotube material. *Nano Letters*, **2009**, 9, 3302-7	11.5	32
75	Impact of cell-voltage on energy and power performance of supercapacitors with single-walled carbon nanotube electrodes. *Electrochemistry Communications*, **2010**, 12, 1678-1681	5.1	31
74	Absence of an ideal single-walled carbon nanotube forest structure for thermal and electrical conductivities. *ACS Nano*, **2013**, 7, 10218-24	16.7	30
73	The relationship between the growth rate and the lifetime in carbon nanotube synthesis. *Nanoscale* , **2015**, 7, 8873-8	7.7	29
72	Mechanics and actuation properties of bucky gel-based electroactive polymers. *Sensors and Actuators B: Chemical*, **2011**, 156, 949-953	8.5	29
71	Unexpectedly high yield carbon nanotube synthesis from low-activity carbon feedstocks at high concentrations. *ACS Nano*, **2013**, 7, 3150-7	16.7	27

70	Epoxy composite sheets with a large interfacial area from a high surface area-supplying single-walled carbon nanotube scaffold filler. *Carbon*, **2011**, 49, 5090-5098	10.4	27
69	Cross-linking super-growth carbon nanotubes to boost the performance of bucky gel actuators. *Carbon*, **2011**, 49, 2253-2257	10.4	26
68	Highly pure, millimeter-tall, sub-2-nanometer diameter single-walled carbon nanotube forests. *Carbon*, **2016**, 107, 433-439	10.4	23
67	Classification of Commercialized Carbon Nanotubes into Three General Categories as a Guide for Applications. *ACS Applied Nano Materials*, **2019**, 2, 4043-4047	5.6	23
66	Mechanical properties of beams from self-assembled closely packed and aligned single-walled carbon nanotubes. *Physical Review Letters*, **2009**, 102, 175505	7.4	21
65	Calculations of Scanning Tunneling Microscopic Images of Benzene on Pt(111) and Pd(111), and Thiophene on Pd(111). *Japanese Journal of Applied Physics*, **1999**, 38, 3809-3812	1.4	21
64	Outer-specific surface area as a gauge for absolute purity of single-walled carbon nanotube forests. *Carbon*, **2010**, 48, 4542-4546	10.4	20
63	Hierarchical three-dimensional layer-by-layer assembly of carbon nanotube wafers for integrated nanoelectronic devices. *Nano Letters*, **2012**, 12, 4540-5	11.5	19
62	A Fundamental Limitation of Small Diameter Single-Walled Carbon Nanotube Synthesis-A Scaling Rule of the Carbon Nanotube Yield with Catalyst Volume. *Materials*, **2013**, 6, 2633-2641	3.5	19
61	Predictions of scanning tunneling microscope images of furan and pyrrole on Pd(111). *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **1997**, 15, 1295-1298	2.9	19
60	Supercapacitors using Pure Single-walled Carbon Nanotubes. *Carbon Letters*, **2009**, 10, 90-93	2.3	18
59	Green, scalable, binderless fabrication of a single-walled carbon nanotube nonwoven fabric based on an ancient Japanese paper process. *ACS Applied Materials & Interfaces*, **2013**, 5, 12602-8	9.5	17
58	Catalysts for the growth of carbon nanotube forests and superaligned arrays. *MRS Bulletin*, **2017**, 42, 802-808	3.2	17
57	Torsion-sensing material from aligned carbon nanotubes wound onto a rod demonstrating wide dynamic range. *ACS Nano*, **2013**, 7, 3177-82	16.7	16
56	Mutual exclusivity in the synthesis of high crystallinity and high yield single-walled carbon nanotubes. *Journal of the American Chemical Society*, **2012**, 134, 9219-24	16.4	16
55	Carbon nanotube loop arrays for low-operational power, high uniformity field emission with long-term stability. *Carbon*, **2012**, 50, 2796-2803	10.4	16
54	Direct wall number control of carbon nanotube forests from engineered iron catalysts. *Journal of Nanoscience and Nanotechnology*, **2013**, 13, 2745-51	1.3	16
53	Efficiency of C60 incorporation in and release from single-wall carbon nanotubes depending on their diameters. *Carbon*, **2007**, 45, 722-726	10.4	16

52	Elucidating the effect of heating induced structural change on electrical and thermal property improvement of single wall carbon nanotube. *Carbon*, **2015**, 87, 239-245	10.4	14
51	A unique facility for surface microscopy. *Materials Science and Engineering B: Solid-State Materials for Advanced Technology*, **2002**, 96, 215-220	3.1	14
50	The infinite possible growth ambients that support single-wall carbon nanotube forest growth. *Scientific Reports*, **2013**, 3, 3334	4.9	13
49	Unexpected Efficient Synthesis of Millimeter-Scale Single-Wall Carbon Nanotube Forests Using a Sputtered MgO Catalyst Underlayer Enabled by a Simple Treatment Process. *Journal of the American Chemical Society*, **2016**, 138, 16608-16611	16.4	13
48	Low turn-on and uniform field emission from structurally engineered carbon nanotube arrays through growth on metal wire mesh substrates. *Materials Research Express*, **2017**, 4, 105041	1.7	12
47	Quantitative assessment of the effect of purity on the properties of single wall carbon nanotubes. *Nanoscale*, **2015**, 7, 5126-33	7.7	12
46	Calculations of scanning tunneling microscope images of xylene on Rh(111). *Surface Science*, **2000**, 448, L175-L178	1.8	12
45	Synthesis of sub-millimeter tall SWNT forests on a catalyst underlayer of MgO single crystal. *MRS Advances*, **2017**, 2, 1-8	0.7	10
44	Designing Neat and Composite Carbon Nanotube Materials by Porosimetric Characterization. *Nanoscale Research Letters*, **2017**, 12, 616	5	10
43	Controlling the structure of arborescent carbon nanotube networks for advanced rubber composites. *Composites Science and Technology*, **2018**, 163, 10-17	8.6	10
42	The Application of Gas Dwell Time Control for Rapid Single Wall Carbon Nanotube Forest Synthesis to Acetylene Feedstock. *Nanomaterials*, **2015**, 5, 1200-1210	5.4	10
41	A phenomenological model for selective growth of semiconducting single-walled carbon nanotubes based on catalyst deactivation. *Nanoscale*, **2016**, 8, 1015-23	7.7	9
40	The limitation of electrode shape on the operational speed of a carbon nanotube based micro-supercapacitor. *Sustainable Energy and Fuels*, **2017**, 1, 1282-1286	5.8	8
39	A general strategy for optimizing composite properties by evaluating the interfacial surface area of dispersed carbon nanotubes by fractal dimension. *Carbon*, **2019**, 154, 457-465	10.4	8
38	Field emission from laterally aligned carbon nanotube flower arrays for low turn-on field emission. *APL Materials*, **2013**, 1, 032101	5.7	8
37	Semiconductor nanochannels in metallic carbon nanotubes by thermomechanical chirality alteration.. *Science*, **2021**, 374, 1616-1620	33.3	8
36	Current treatment of bulk single walled carbon nanotubes to heal defects without structural change for increased electrical and thermal conductivities. *Nanoscale*, **2015**, 7, 8707-14	7.7	7
35	One millimeter per minute growth rates for single wall carbon nanotube forests enabled by porous metal substrates.. *RSC Advances*, **2018**, 8, 7810-7817	3.7	7

34	A New, General Strategy for Fabricating Highly Concentrated and Viscoplastic Suspensions Based on a Structural Approach To Modulate Interparticle Interaction. *Journal of the American Chemical Society*, **2018**, 140, 1098-1104	16.4	7
33	Experimental and theoretical STM imaging of xylene isomers on Pd(111). *Physical Review B*, **2002**, 65,	3.3	7
32	Through-Silicon-Via Interposers with Cu-Level Electrical Conductivity and Si-Level Thermal Expansion Based on Carbon Nanotube-Cu Composites for Microelectronic Packaging Applications. *ACS Applied Nano Materials*, **2021**, 4, 869-876	5.6	7
31	Benchmarking bucky gel actuators: Chemically modified commercial carbon nanotubes versus super-growth carbon nanotubes. *Physica Status Solidi (B): Basic Research*, **2010**, 247, 3055-3058	1.3	6
30	Scanning tunneling microscopy study of the molecular arrangement of meta- and para-xylene on Pd(111). *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2001**, 19, 1993-1995	2.9	6
29	Characteristic intra- and interunit interactions of Kr atoms adsorbed on the Si(111)77 surface. *Physical Review B*, **2003**, 68,	3.3	5
28	A mini-microplasma-based synthesis reactor for growing highly crystalline carbon nanotubes. *Carbon*, **2021**, 173, 448-453	10.4	4
27	Limitation in growth temperature for water-assisted single wall carbon nanotube forest synthesis. *MRS Advances*, **2018**, 3, 91-96	0.7	3
26	High Yield Single-Walled Carbon Nanotube Synthesis Through Multilayer Porous Mesh Substrates. *E-Journal of Surface Science and Nanotechnology*, **2018**, 16, 279-282	0.7	3
25	Preferential oxidation-induced etching of zigzag edges in nanographene. *Physical Chemistry Chemical Physics*, **2014**, 16, 21363-71	3.6	3
24	Breakdown of metallic single-wall carbon nanotube paths by NiO nanoparticle point etching for high performance thin film transistors. *Nanoscale*, **2015**, 7, 1280-4	7.7	3
23	Characteristic adsorption of Xe on a Si(111)(7×7) surface at low temperature. *Physical Review B*, **2002**, 65,	3.3	3
22	Interactive Force between Cyclodextrin Inclusion Complexes Studied by Atomic Force Microscopy. *Japanese Journal of Applied Physics*, **2001**, 40, 4419-4422	1.4	3
21	Improving the synthetic efficiency of single-wall carbon nanotube forests using a gas-analysis-designed mixed carbon feedstock. *Carbon*, **2020**, 170, 59-65	10.4	3
20	Scalability of the Heat and Current Treatment on SWCNTs to Improve their Crystallinity and Thermal and Electrical Conductivities. *Nanoscale Research Letters*, **2015**, 10, 220	5	2
19	Site-selective silicon adatom desorption using femtosecond laser pulse pairs and scanning tunneling microscopy. *Applied Physics Letters*, **2003**, 83, 2333-2335	3.4	2
18	Monolayer formation of 6-deoxy-6-thiol-β-cyclodextrin on a Au(111) surface studied by scanning tunneling microscopy. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2001**, 19, 1266-1269	2.9	2
17	Adsorption and Wetting Structures of Kr on Pt(111) at 8 K and 45 K Studied by Scanning Tunneling Microscopy. *Japanese Journal of Applied Physics*, **2001**, 40, 4399-4402	1.4	2

16	Role of Hydrogen in Catalyst Activation for Plasma-Based Synthesis of Carbon Nanotubes. *ACS Omega*, **2021**, 6, 18763-18769	3.9	2
15	A Hydrogen-Free Approach for Activating an Fe Catalyst Using Trace Amounts of Noble Metals and Confinement into Nanoparticles.. *Journal of Physical Chemistry Letters*, **2022**, 1879-1885	6.4	2
14	Quantitative Evidence for the Dependence of Highly Crystalline Single Wall Carbon Nanotube Synthesis on the Growth Method.. *Nanomaterials*, **2021**, 11,	5.4	2
13	The double-edged effects of annealing MgO underlayers on the efficient synthesis of single-wall carbon nanotube forests. *Nanoscale*, **2017**, 9, 17617-17622	7.7	1
12	Microsupercapacitors: Lithographically Integrated Microsupercapacitors for Compact, High Performance, and Designable Energy Circuits (Adv. Energy Mater. 18/2015). *Advanced Energy Materials*, **2015**, 5,	21.8	1
11	Crystalline and Electrical Property Improvement of Filtrated, Exfoliated Graphite Sheets by an In-Plane Current and Heating Treatment. *Nanoscale Research Letters*, **2020**, 15, 195	5	1
10	Influence of Carbon Nanotube Attributes on Carbon Nanotube/Cu Composite Electrical Performances. *Journal of Carbon Research*, **2021**, 7, 78	3.3	0
9	High Aspect Ratio Machining of Nanocarbon Materials by Reactive Ion Etching. *MRS Advances*, **2017**, 2, 9-14	0.7	
8	Additional obstacles in carbon nanotube growth by gas-flow directed chemical vapour deposition unveiled through improving growth density. *Nanoscale Advances*, **2019**, 1, 4076-4081	5.1	
7	Examining the structural contribution to the electrical character of single wall carbon nanotube forest by a height dependent study. *Carbon*, **2016**, 108, 106-111	10.4	
6	Sub-millimeter arbitrary arrangements of monolithically micro-scale electrical double layer capacitors. *Journal of Physics: Conference Series*, **2015**, 660, 012086	0.3	
5	??????????????????. *Electrochemistry*, **2007**, 75, 370-373	1.2	
4	Characteristic structures of the Si(111)-7⍰ surface step studied by scanning tunneling microscopy. *Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films*, **2001**, 19, 1549-1552	2.9	
3	Millimetre-scale growth of single-wall carbon nanotube forests using an aluminium nitride catalyst underlayer. *MRS Advances*, **2019**, 4, 177-183	0.7	
2	Modulation of carbon nanotube yield and type through the collective effects of initially deposited catalyst amount and MgO underlayer annealing temperature. *MRS Advances*, **2019**, 4, 139-146	0.7	
1	Multi-step chemical vapor synthesis reactor based on a microplasma for structure-controlled synthesis of single-walled carbon nanotubes. *Chemical Engineering Journal*, **2022**, 444, 136634	14.7	