Wen-Sheng Zhao

List of Publications by Year
in descending order

143 papers	1,882 citations	279798 23 h-index	330143 37 g-index
145 all docs	145 docs citations	145 times ranked	1184 citing authors

#	Article	IF	Citations
1	Signal Transmission Analysis of Multilayer Graphene Nano-Ribbon (MLGNR) Interconnects. IEEE Transactions on Electromagnetic Compatibility, 2012, 54, 126-132.	2.2	139
2	Reconfigurable Terahertz Leaky-Wave Antenna Using Graphene-Based High-Impedance Surface. IEEE Nanotechnology Magazine, 2015, 14, 62-69.	2.0	122
3	Comparative Study on Multilayer Graphene Nanoribbon (MLGNR) Interconnects. IEEE Transactions on Electromagnetic Compatibility, 2014, 56, 638-645.	2.2	108
4	Differential Microwave Microfluidic Sensor Based on Microstrip Complementary Split-Ring Resonator (MCSRR) Structure. IEEE Sensors Journal, 2020, 20, 5876-5884.	4.7	74
5	Electromagnetic Compatibility-Oriented Study on Through Silicon Single-Walled Carbon Nanotube Bundle Via (TS-SWCNTBV) Arrays. IEEE Transactions on Electromagnetic Compatibility, 2012, 54, 149-157.	2.2	51
6	Frequency- and Temperature-Dependent Modeling of Coaxial Through-Silicon Vias for 3-D ICs. IEEE Transactions on Electron Devices, 2011, 58, 3358-3368.	3.0	48
7	Ultrahigh-Sensitivity Microwave Microfluidic Sensors Based on Modified Complementary Electric-LC and Split-Ring Resonator Structures. IEEE Sensors Journal, 2021, 21, 18756-18763.	4.7	43
8	Tunable THz Multiband Frequency-Selective Surface Based on Hybrid Metalâ€“Graphene Structures. IEEE Nanotechnology Magazine, 2017, 16, 1132-1137.	2.0	41
9	Wideband Modeling and Characterization of Differential Through-Silicon Vias for 3-D ICs. IEEE Transactions on Electron Devices, 2016, 63, 1168-1175.	3.0	40
10	An Ultrahigh Sensitivity Microwave Sensor for Microfluidic Applications. IEEE Microwave and Wireless Components Letters, 2020, 30, 1201-1204.	3.2	38
11	Mini-review: Recent progress in the development of MoSe2 based chemical sensors and biosensors. Microelectronic Engineering, 2020, 225, 111279.	2.4	38
12	Analysis of Cu-Graphene Interconnects. IEEE Access, 2018, 6, 53499-53508.	4.2	36
13	The Gas Leak Detection Based on a Wireless Monitoring System. IEEE Transactions on Industrial Informatics, 2019, 15, 6240-6251.	11.3	35
14	Investigation of Copperâ€“Carbon Nanotube Composites as Global VLSI Interconnects. IEEE Nanotechnology Magazine, 2017, 16, 891-900.	2.0	31
15	Wideband Modeling of Graphene-Based Structures at Different Temperatures Using Hybrid FDTD Method. IEEE Nanotechnology Magazine, 2015, 14, 250-258.	2.0	30
16	Electrothermal Cosimulation of 3-D Carbon-Based Heterogeneous Interconnects. IEEE Transactions on Components, Packaging and Manufacturing Technology, 2016, 6, 518-526.	2.5	30
17	High-Frequency Analysis of Cu-Carbon Nanotube Composite Through-Silicon Vias. IEEE Nanotechnology Magazine, 2016, 15, 506-511.	2.0	30
18	Vertical Graphene Nanoribbon Interconnects at the End of the Roadmap. IEEE Transactions on Electron Devices, 2018, 65, 2632-2637.	3.0	29

#	Article	IF	Citations
19	Mini-Review: Modeling and Performance Analysis of Nanocarbon Interconnects. Applied Sciences (Switzerland), 2019, 9, 2174.	2.5	27
20	Electrical Modeling of On-Chip Cu-Graphene Heterogeneous Interconnects. IEEE Electron Device Letters, 2015, 36, 74-76.	3.9	26
21	A CSRR-Loaded Planar Sensor for Simultaneously Measuring Permittivity and Permeability. IEEE Microwave and Wireless Components Letters, 2020, 30, 219-221.	3.2	26
22	Impacts of diamond heat spreader on the thermo-mechanical characteristics of high-power AlGaN/GaN HEMTs. Diamond and Related Materials, 2015, 52, 25-31.	3.9	25
23	Electrical Modeling of Three-Dimensional Carbon-Based Heterogeneous Interconnects. IEEE Nanotechnology Magazine, 2014, 13, 488-495.	2.0	24
24	Transient Analysis of Through-Silicon Vias in Floating Silicon Substrate. IEEE Transactions on Electromagnetic Compatibility, 2017, 59, 207-216.	2.2	23
25	ELECTROTHERMAL EFFECTS IN HIGH DENSITY THROUGH SILICON VIA (TSV) ARRAYS. Progress in Electromagnetics Research, 2011, 115, 223-242.	4.4	22
26	A high-Q active substrate integrated waveguide based sensor for fully characterizing magneto-dielectric (MD) materials. Sensors and Actuators A: Physical, 2020, 301, 111778.	4.1	22
27	The WSN Monitoring System for Large Outdoor Advertising Boards Based on ZigBee and MEMS Sensor. IEEE Sensors Journal, 2018, 18, 1314-1323.	4.7	21
28	Modeling of Carbon Nanotube-Based Differential Through-Silicon Vias in 3-D ICs. IEEE Nanotechnology Magazine, 2020, 19, 492-499.	2.0	21
29	A NOVEL TUNABLE ANTENNA AT THZ FREQUENCIES USING GRAPHENE-BASED ARTIFICIAL MAGNETIC CONDUCTOR (AMC). Progress in Electromagnetics Research Letters, 2013, 41, 29-38.	0.7	20
30	Electrothermal modelling and characterisation of submicron throughâ€silicon carbon nanotube bundle vias for threeâ€dimensional ICs. Micro and Nano Letters, 2014, 9, 123-126.	1.3	20
31	Repeater insertion for carbon nanotube interconnects. Micro and Nano Letters, 2014, 9, 337-339.	1.3	20
32	Swarm Intelligence Algorithm-Based Optimal Design of Microwave Microfluidic Sensors. IEEE Transactions on Industrial Electronics, 2022, 69, 2077-2087.	7.9	20
33	Microwave Planar Sensors for Fully Characterizing Magneto-Dielectric Materials. IEEE Access, 2020, 8, 41985-41999.	4.2	19
34	A Temperature-Compensated Differential Microstrip Sensor for Microfluidic Applications. IEEE Sensors Journal, 2021, 21, 24075-24083.	4.7	19
35	Signal integrity analysis of graphene nano-ribbon (GNR) interconnects. , 2012, , .		18
36	Multimode and Wideband Printed Loop Antenna Based on Degraded Split-Ring Resonators. IEEE Access, 2017, 5, 15561-15570.	4.2	16

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37	Repeater Insertion to Reduce Delay and Power in Copper and Carbon Nanotube-Based Nanointerconnects. IEEE Access, 2019, 7, 13622-13633.	4.2	16
38	Investigation on thermo-mechanical responses in high power multi-finger AlGaN/GaN HEMTs. Microelectronics Reliability, 2014, 54, 575-581.	1.7	15
39	Electrothermal Characterization of Multilevel Cu-Graphene Heterogeneous Interconnects in the Presence of an Electrostatic Discharge (ESD). IEEE Nanotechnology Magazine, 2015, 14, 205-209.	2.0	15
40	High-Frequency Modeling of On-Chip Coupled Carbon Nanotube Interconnects for Millimeter-Wave Applications. IEEE Transactions on Components, Packaging and Manufacturing Technology, 2016, 6, 1226-1232.	2.5	14
41	Modeling and Characterization of Coaxial Through-Silicon Via With Electrically Floating Inner Silicon. IEEE Transactions on Components, Packaging and Manufacturing Technology, 2017, 7, 936-943.	2.5	14
42	Performance and stability analysis of monolayer singleâ€walled carbon nanotube interconnects. International Journal of Numerical Modelling: Electronic Networks, Devices and Fields, 2015, 28, 456-464.	1.9	13
43	Investigation of Carbon Nanotube-Based Through-Silicon Vias for PDN Applications. IEEE Transactions on Electromagnetic Compatibility, 2018, 60, 738-746.	2.2	13
44	Sensitivity optimization of differential microwave sensors for microfluidic applications. Sensors and Actuators A: Physical, 2021, 330, 112866.	4.1	13
45	Miniaturized microwave microfluidic sensor based on quarter-mode 2.5-D spoof plasmons. Sensors and Actuators A: Physical, 2022, 342, 113621.	4.1	13
46	Scaling Analysis of High Gain Monolayer MoS₂Photodetector for Its Performance Optimization. IEEE Transactions on Electron Devices, 2016, 63, 1608-1614.	3.0	12
47	Low loss and high permittivity composites based on poly(vinylidene) Tj ETQq1 1 0.784314 rgBT /Overlock 10 Tf 50 347 Td (fluoride-chlo 2017, 43, 1504-1508.	4.8	12
48	Modeling and Performance Analysis of Shielded Differential Annular Through-Silicon Via (SD-ATSV) for 3-D ICs. IEEE Access, 2018, 6, 33238-33250.	4.2	12
49	A Characterization of the Performance of Gas Sensor Based on Heater in Different Gas Flow Rate Environments. IEEE Transactions on Industrial Informatics, 2020, 16, 6281-6290.	11.3	12
50	Compact Folded SSPP Transmission Line and Its Applications in Low-Pass Filters. IEEE Photonics Technology Letters, 2022, 34, 591-594.	2.5	12
51	A Passive Equalizer Design for Shielded Differential Through-Silicon Vias in 3-D IC. IEEE Microwave and Wireless Components Letters, 2018, 28, 768-770.	3.2	11
52	Fully Coupled Electrothermal Simulation of Large RRAM Arrays in the â€œThermal-Houseâ€• IEEE Access, 2019, 7, 3897-3908.	4.2	11
53	Modeling of carbon nanotube (CNT) interconnects. , 2011, , .		10
54	Modeling and Characterization of Differential Multibit Carbon-Nanotube Through-Silicon Vias. IEEE Transactions on Components, Packaging and Manufacturing Technology, 2020, 10, 534-537.	2.5	10

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55	A valley and spin filter based on gapped graphene. Journal of Physics Condensed Matter, 2016, 28, 285302.	1.8	9
56	Repeater Insertion for Multi-Walled Carbon Nanotube Interconnects. Applied Sciences (Switzerland), 2018, 8, 236.	2.5	9
57	An Improved Algorithm for Drift Diffusion Transport and Its Application on Large Scale Parallel Simulation of Resistive Random Access Memory Arrays. IEEE Access, 2019, 7, 31273-31285.	4.2	9
58	Optimal Design of Planar Microwave Microfluidic Sensors Based on Deep Reinforcement Learning. IEEE Sensors Journal, 2021, 21, 27441-27449.	4.7	9
59	Electrothermal modeling of coaxial through silicon via (TSV) for three-dimensional ICs. , 2010, , .		8
60	Circuit modelling of multilayer graphene nanoribbon (MLGNR) interconnects. , 2012, , .		8
61	Modeling of TSV-based solenoid inductors for 3-D integration. , 2015, , .		8
62	Numerical Investigation of High-Voltage Partial Buried P/N-Layer SOI LDMOS. IEEE Transactions on Electron Devices, 2017, 64, 3725-3733.	3.0	8
63	Parallel Simulation of Fully Coupled Electrothermal Processes in Large-Scale Phase-Change Memory Arrays. IEEE Transactions on Electron Devices, 2019, 66, 5117-5125.	3.0	8
64	Transmission characteristics of a coaxial through-silicon via (C-TSV) interconnect. , 2011, , .		7
65	A Compact Passive Equalizer Design for Differential Channels in TSV-Based 3-D ICs. IEEE Access, 2018, 6, 75278-75292.	4.2	7
66	A Novel Finger-Controlled Passive RFID Tag Design for Humanâ€“Machine Interaction. Sensors, 2019, 19, 5125.	3.8	7
67	Methodological investigation into the noise influence on nanolasersâ€™ large signal modulation. Optics Express, 2021, 29, 5081.	3.4	7
68	Controllable Photoelectric Properties of Carbon Dots and Their Application in Organic Solar Cells. Chinese Journal of Polymer Science (English Edition), 2022, 40, 7-20.	3.8	7
69	A Split-Ring Resonator-Based Planar Microwave Sensor for Microfluidic Applications. , 2022, , .		7
70	Electrothermal modelling of through silicon via (TSV) interconnects. , 2010, , .		6
71	Terahertz frequency selective surface based on metalâ€graphene structure with independent frequency tuneability. IET Microwaves, Antennas and Propagation, 2019, 13, 911-916.	1.4	6
72	Optimal repeater insertion for horizontal and vertical graphene nanoribbon interconnects. International Journal of Numerical Modelling: Electronic Networks, Devices and Fields, 2020, 33, e2696.	1.9	6

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73	An AMC-Based Liquid Sensor Optimized by Particle-Ant Colony Optimization Algorithms. IEEE Sensors Journal, 2022, 22, 2083-2090.	4.7	6
74	Fabrication and high-frequency characterization of low-cost fan-in/out WLP technology with RDL for 2.5D/3D heterogeneous integration. Microelectronics Journal, 2022, 119, 105332.	2.0	6
75	High-Frequency Electrothermal Characterization of TSV-Based Power Delivery Network. IEEE Transactions on Components, Packaging and Manufacturing Technology, 2018, 8, 2171-2179.	2.5	5
76	Modelling and delay analysis of onâ€chip differential carbon nanotube interconnects. Micro and Nano Letters, 2019, 14, 505-510.	1.3	5
77	High-Q Active Microwave Sensor Based on Microstrip Complementary Split-Ring Resonator (MCSRR) Structure for Dielectric Characterization. Applied Computational Electromagnetics Society Journal, 2021, 36, 922-927.	0.4	5
78	Design of H-shaped planar displacement microwave sensors with wide dynamic range. Sensors and Actuators A: Physical, 2022, 333, 113311.	4.1	5
79	O<scp>nâ€chip</scp> miniaturized bandpass filter using gallium arsenide<scp>â€based</scp> integrated passive device technology. Microwave and Optical Technology Letters, 2022, 64, 688-693.	1.4	5
80	A Complementary Split-Ring Resonator (CSRR)-Based 2D Displacement Sensor. Symmetry, 2022, 14, 1116.	2.2	5
81	Recent Progress in Physics-Based Modeling of Electromigration in Integrated Circuit Interconnects. Micromachines, 2022, 13, 883.	2.9	5
82	Modeling of a pair of annular through silicon vias (TSV). , 2011, , .		4
83	Anchor Loss Variation in MEMS Wine-Glass Mode Disk Resonators Due to Fluctuating Fabrication Process. IEEE Sensors Journal, 2016, 16, 6846-6856.	4.7	4
84	Near-Field Radiated From Carbon Nanotube and Graphene-Based Nanointerconnects. IEEE Transactions on Electromagnetic Compatibility, 2017, 59, 646-653.	2.2	4
85	Numerical investigation on L-shaped vertical field plate in high-voltage LDMOS. Results in Physics, 2019, 15, 102547.	4.1	4
86	Optimal repeater insertion for nanoâ€interconnects in currentâ€mode signalling scheme. Micro and Nano Letters, 2020, 15, 308-312.	1.3	4
87	RFIDâ€based bidirectional wireless rollover sensor for intelligent wheelchair. Microwave and Optical Technology Letters, 2021, 63, 504-509.	1.4	4
88	A Hybrid Streamline Upwind Finite Volume-Finite Element Method for Semiconductor Continuity Equations. IEEE Transactions on Electron Devices, 2021, 68, 5421-5429.	3.0	4
89	Modeling and characterization of carbon-based heterogeneous interconnects for 3-D ICs. , 2013, , .		3
90	THERMO-MECHANICAL ANALYSIS OF AN IMPROVED THERMAL THROUGH SILICON VIA (TTSV) STRUCTURE. Progress in Electromagnetics Research M, 2013, 30, 51-66.	0.9	3

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91	Circuit modeling of Cu/CNT composite through-silicon vias (TSV). , 2015, , .		3
92	Vibration-Induced Errors in MEMS Tuning Fork Gyroscopes with Imbalance. Sensors, 2018, 18, 1755.	3.8	3
93	Novel electromagnetic bandgap structure for wideband suppression of simultaneous switching noise. Electronics Letters, 2019, 55, 1243-1245.	1.0	3
94	A Repeater Optimization Methodology for Global Multi-Walled Carbon Nanotube Interconnects. , 2019, , .		3
95	Fully coupled electrothermal simulation of resistive random access memory (RRAM) array. Science China Information Sciences, 2020, 63, 1.	4.3	3
96	Electrical modeling of carbon nanotubeâ€based shielded throughâ€silicon vias for threeâ€dimensional integrated circuits. International Journal of Numerical Modelling: Electronic Networks, Devices and Fields, 2021, 34, e2842.	1.9	3
97	Coulomb impurity on a Dice lattice: Atomic collapse and bound states. Physical Review B, 2022, 105, .	3.2	3
98	Platform-Tolerant Nested-Slot RFID Tag Antenna Based on Jigsaw-Shaped Metasurface. IEEE Antennas and Wireless Propagation Letters, 2022, 21, 943-947.	4.0	3
99	Sensitivity analysis of through-silicon via (TSV) interconnects for 3-D ICs. , 2011, , .		2
100	Electrothermal modelling of novel through-silicon carbon nanotube bundle vias (TS-CNTBV). , 2012, , .		2
101	Conduction Mode Analysis and Impedance Extraction of Shielded Pair Transmission Lines. IEEE Microwave and Wireless Components Letters, 2016, 26, 654-656.	3.2	2
102	Electrical modeling of on-chip copper-carbon nanotube composite interconnects. , 2016, , .		2
103	Multiphysics characterization of polymerâ€filled throughâ€silicon vias (<scp>PFâ€TSVs</scp>) for threeâ€dimensional integration. International Journal of Numerical Modelling: Electronic Networks, Devices and Fields, 2018, 31, e2348.	1.9	2
104	An Ultracompact Butterworth Low-Pass Filter Based on Vertical Spiral TSV Inductor. , 2019, , .		2
105	Spatial Selected Spin Filtering Effect in Z-Shaped MoS₂ Nanoribbon. IEEE Access, 2021, 9, 106784-106789.	4.2	2
106	A Proposal of Vertical MOSFET and Electrothermal Analysis for Monolithic 3-D ICs. Electronics (Switzerland), 2021, 10, 2241.	3.1	2
107	On the applicability of twoâ€bit carbon nanotube throughâ€silicon via for power distribution networks in 3â€D integrated circuits. IET Circuits, Devices and Systems, 2021, 15, 20-26.	1.4	2
108	An Improved Differential CSRR-Based Sensor for Characterizing the Magneto-Dielectric Materials. , 2020, , .		2

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109	Carbon Nanotube Through-Silicon Via: Modeling, Design and Applications. , 2020, , .		2
110	An active microfluidic sensor based on slow-wave substrate integrated waveguide for measuring complex permittivity of liquids. Sensors and Actuators A: Physical, 2022, 344, 113699.	4.1	2
111	Electrical characterization of through-silicon vias (TSV) with different physical configurations. , 2012, , .		1
112	Electrothermal characteristics of carbon-based through-silicon via (TSV) channel. , 2015, , .		1
113	Frequency- and beam-reconfigurable THz Fabry-Perot antenna based on hybrid Cu-graphene HIS. , 2015, , .		1
114	Highâ€frequency modeling of Cuâ€graphene heterogeneous interconnects. International Journal of Numerical Modelling: Electronic Networks, Devices and Fields, 2016, 29, 157-165.	1.9	1
115	Quantum pumping of layer pseudospin current in biased bilayer graphene. Journal Physics D: Applied Physics, 2017, 50, 205101.	2.8	1
116	A comparative study on electrothermal characteristics of nanoscale multiple gate MOSFETs. Microelectronics Reliability, 2017, 78, 362-369.	1.7	1
117	Electrothermal Modeling of Carbon Nanotube-Based TSVs. , 2017, , 247-281.		1
118	Electrothermal co-simulation of a two-chip power delivery network in frequency domain. , 2017, , .		1
119	<scp>Highâ€precision dielectric sensor system based on balanced CSRRâ€SIW resonators</scp>. International Journal of RF and Microwave Computer-Aided Engineering, 2021, 31, e22696.	1.2	1
120	Circuit Modeling of Shielded Differential Carbon Nanotube Bundle Filled Through-Silicon Vias. , 2020, , .		1
121	An ultrahighâ€sensitivity microwave angular displacement sensor with a wide dynamic range. Microwave and Optical Technology Letters, 0, , .	1.4	1
122	Miniaturized Microwave Microfluidic Sensor Based on Spoof Localized Surface Plasmons. , 2022, , .		1
123	Suppressing temperature rise in AlGaN/GaN HEMT with graphene layers. , 2011, , .		0
124	Thermal modeling, analysis, and management of high-power GaN transistors. , 2013, , .		0
125	Electrical modeling of multi-walled carbon nanotube (MWCNT)-based capacitors for high-density RF integration. , 2013, , .		0
126	Towards 3-D carbon-based heterogeneous interconnects. , 2015, , .		0

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127	Frequency-thermal characterization of on-chip single-walled carbon nanotube interconnects. , 2015, , .		0
128	A systematic test approach for through-silicon via (TSV) process. , 2015, , .		0
129	Modeling and characterization of Cu-graphene heterogeneous interconnects. , 2015, , .		0
130	Modelling of multilayer graphene (MLG)-based structures at different temperatures. , 2015, , .		0
131	Stability analysis of coupled copper-carbon nanotube (Cu-CNT) composite interconnects. , 2017, , .		0
132	The impact of current return path on the signal propagation in the through-silicon via array. , 2017, , .		0
133	Modeling of crosstalk effects in carbon nanotube based differential through-silicon via array. , 2017, , .		0
134	A Design of tunable high-impedance surface (HIS) based on hybrid metal-graphene structure. , 2017, , .		0
135	Modeling of power distribution network based on multi-walled carbon nanotube TSVs for 3-D ICs. , 2017, , .		0
136	Potential Applicability of Single-Walled Carbon Nanotube Through-Silicon Vias for Differential Signal Transmission. , 2019, , .		0
137	Modelling of crosstalk in differential through silicon vias for threeâ€dimensional integrated circuits. IET Microwaves, Antennas and Propagation, 2019, 13, 1529-1535.	1.4	0
138	A Passive Equalizer Design for On-Interposer Differential Interconnects in 2.5D/3D ICs. , 2019, , .		0
139	Electrical modeling and design. , 2020, , 13-57.		0
140	Broadband Tâ€bar fed slot antenna array with stable horizontally polarized omnidirectional radiation. International Journal of RF and Microwave Computer-Aided Engineering, 2020, 30, e22427.	1.2	0
141	Multiphysics Analysis and Optimal Design of Compressible Micro-Interconnect for 2.5D/3D Heterogeneous Integration. Electronics (Switzerland), 2021, 10, 2240.	3.1	0
142	A Substrate Integrated Waveguide Based Sensor for Fully Charactering Magnetodielectric Materials. , 2020, , .		0
143	Design for Ultrahigh-Density Vertical Phase Change Memory: Proposal and Numerical Investigation. Electronics (Switzerland), 2022, 11, 1822.	3.1	0