Sukwon Choi

List of Publications by Year
in descending order

60 papers	1,630 citations	279487 23 h-index	301761 39 g-index
61 all docs	61 docs citations	61 times ranked	1363 citing authors

#	Article	IF	Citations
1	Î²-Gallium oxide power electronics. APL Materials, 2022, 10, .	2.2	184
2	Crystalline polymer nanofibers with ultra-high strength and thermal conductivity. Nature Communications, 2018, 9, 1664.	5.8	97
3	Device-Level Thermal Management of Gallium Oxide Field-Effect Transistors. IEEE Transactions on Components, Packaging and Manufacturing Technology, 2019, 9, 2352-2365.	1.4	88
4	Analysis of the residual stress distribution in AlGaN/GaN high electron mobility transistors. Journal of Applied Physics, 2013, 113, .	1.1	84
5	Thermometry of AlGaN/GaN HEMTs Using Multispectral Raman Features. IEEE Transactions on Electron Devices, 2013, 60, 1898-1904.	1.6	74
6	The Impact of Bias Conditions on Self-Heating in AlGaN/GaN HEMTs. IEEE Transactions on Electron Devices, 2013, 60, 159-162.	1.6	64
7	Nanoscale electro-thermal interactions in AlGaN/GaN high electron mobility transistors. Journal of Applied Physics, 2020, 127, .	1.1	60
8	The impact of mechanical stress on the degradation of AlGaN/GaN high electron mobility transistors. Journal of Applied Physics, 2013, 114, .	1.1	58
9	Electrical and structural dependence of operating temperature of AlGaN/GaN HEMTs. Microelectronics Reliability, 2013, 53, 872-877.	0.9	52
10	Thermal Conductivity of Aluminum Scandium Nitride for 5G Mobile Applications and Beyond. ACS Applied Materials & Interfaces, 2021, 13, 19031-19041.	4.0	51
11	Ga₂O₃-on-SiC Composite Wafer for Thermal Management of Ultrawide Bandgap Electronics. ACS Applied Materials & Interfaces, 2021, 13, 40817-40829.	4.0	49
12	Thermal characterization of gallium nitride p-i-n diodes. Applied Physics Letters, 2018, 112, .	1.5	42
13	Thermal characterization of gallium oxide Schottky barrier diodes. Review of Scientific Instruments, 2018, 89, 114903.	0.6	41
14	High-contrast and reversible polymer thermal regulator by structural phase transition. Science Advances, 2019, 5, eaax3777.	4.7	41
15	130ÂmAÂmm^{â^'1} Î²-Ga₂O₃ metal semiconductor field effect transistor with low-temperature metalorganic vapor phase epitaxy-regrown ohmic contacts. Applied Physics Express, 2021, 14, 076502.	1.1	39
16	Applications and Impacts of Nanoscale Thermal Transport in Electronics Packaging. Journal of Electronic Packaging, Transactions of the ASME, 2021, 143, .	1.2	38
17	Electro-thermal co-design of Î² -(AlxGa1-x)2O3/Ga2O3 modulation doped field effect transistors. Applied Physics Letters, 2020, 117, .	1.5	35
18	Multidimensional thermal analysis of an ultrawide bandgap AlGaN channel high electron mobility transistor. Applied Physics Letters, 2019, 115, .	1.5	30

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19	Polycrystalline diamond growth on Î²-Ga₂O₃ for thermal management. Applied Physics Express, 2021, 14, 055502.	1.1	29
20	A perspective on the electro-thermal co-design of ultra-wide bandgap lateral devices. Applied Physics Letters, 2021, 119, .	1.5	28
21	Thermal Design and Characterization of Heterogeneously Integrated InGaP/GaAs HBTs. IEEE Transactions on Components, Packaging and Manufacturing Technology, 2016, 6, 740-748.	1.4	27
22	Thermal Management and Characterization of High-Power Wide-Bandgap Semiconductor Electronic and Photonic Devices in Automotive Applications. Journal of Electronic Packaging, Transactions of the ASME, 2019, 141, .	1.2	27
23	Observation of negative differential resistance in mesoscopic graphene oxide devices. Scientific Reports, 2018, 8, 7144.	1.6	25
24	Thermal Conductivity of Î²-Phase Ga₂O₃ and (Al_xGa_{1â€“}_x)₂O₃ Heteroepitaxial Thin Films. ACS Applied Materials & Interfaces, 2021, 13, 38477-38490.	4.0	24
25	A System to Package Perspective on Transient Thermal Management of Electronics. Journal of Electronic Packaging, Transactions of the ASME, 2020, 142, .	1.2	24
26	MEMS-Based Nanomechanics: Influence of MEMS Design on Test Temperature. Experimental Mechanics, 2012, 52, 607-617.	1.1	22
27	Diamond-Incorporated Flip-Chip Integration for Thermal Management of GaN and Ultra-Wide Bandgap RF Power Amplifiers. IEEE Transactions on Components, Packaging and Manufacturing Technology, 2021, 11, 1177-1186.	1.4	22
28	Toward Robotic Inspection of Dry Storage Casks for Spent Nuclear Fuel. Journal of Pressure Vessel Technology, Transactions of the ASME, 2017, 139, .	0.4	19
29	2D Materials for Universal Thermal Imaging of Micro- and Nanodevices: An Application to Gallium Oxide Electronics. ACS Applied Electronic Materials, 2020, 2, 2945-2953.	2.0	19
30	High-power flexible AlGaN/GaN heterostructure field-effect transistors with suppression of negative differential conductance. Applied Physics Letters, 2017, 111, .	1.5	17
31	Thermal design of multi-fin Ga2O3 vertical transistors. Applied Physics Letters, 2021, 119, .	1.5	17
32	Evaluation of a â€œField Cageâ€•for Electric Field Control in GaN-Based HEMTs That Extends the Scalability of Breakdown Into the kV Regime. IEEE Transactions on Electron Devices, 2017, 64, 3740-3747.	1.6	15
33	Cumulative Impacts of Proton Irradiation on the Self-heating of AlGaN/GaN HEMTs. ACS Applied Electronic Materials, 2020, 2, 980-991.	2.0	15
34	Interdependence of Electronic and Thermal Transport in Al_xGa_{1â€“x}N Channel HEMTs. IEEE Electron Device Letters, 2020, 41, 461-464.	2.2	15
35	Guidelines for Reduced-Order Thermal Modeling of Multifinger GaN HEMTs. Journal of Electronic Packaging, Transactions of the ASME, 2020, 142, .	1.2	14
36	Device-Level Multidimensional Thermal Dynamics With Implications for Current and Future Wide Bandgap Electronics. Journal of Electronic Packaging, Transactions of the ASME, 2020, 142, .	1.2	14

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37	Electro-thermal reliability study of GaN high electron mobility transistors. , 2017, , .		13
38	Effect of Ge doping on growth stress and conductivity in AlxGa1-xN. Applied Physics Letters, 2019, 114, .	1.5	12
39	Thermally-Aware Layout Design of Î²-Gaâ„Oâ„ƒ Lateral MOSFETs. IEEE Transactions on Electron Devices, 2022, 69, 1251-1257.	1.6	11
40	Electro-Thermal Investigation of GaN Vertical Trench MOSFETs. IEEE Electron Device Letters, 2021, 42, 723-726.	2.2	10
41	Thermal performance of diamond field-effect transistors. Applied Physics Letters, 2021, 119, 143502.	1.5	10
42	The Doping Dependence of the Thermal Conductivity of Bulk Gallium Nitride Substrates. Journal of Electronic Packaging, Transactions of the ASME, 2020, 142, .	1.2	9
43	Local residual stress monitoring of aluminum nitride MEMS using UV micro-Raman spectroscopy. Journal of Micromechanics and Microengineering, 2016, 26, 025009.	1.5	8
44	Polarization modulation effect of BeO on AlGaN/GaN high-electron-mobility transistors. Applied Physics Letters, 2019, 115, .	1.5	8
45	Modulation of the two-dimensional electron gas channel in flexible AlGaN/GaN high-electron-mobility transistors by mechanical bending. Applied Physics Letters, 2020, 116, .	1.5	7
46	Integrated temperature mapping of lateral gallium nitride electronics. , 2017, , .		6
47	Residual stress analysis of aluminum nitride piezoelectric micromachined ultrasonic transducers using Raman spectroscopy. Journal of Applied Physics, 2021, 130, .	1.1	6
48	Improved Light Output Power of 16â€‰Ã—â€‰16 Pixelated Micro-LEDs for Headlights by Enhancing the Reflectivity and Coverage of the p -Electrode. Physica Status Solidi (A) Applications and Materials Science, 2018, 215, 1700571.	0.8	5
49	Local measurements of domain wall-induced self-heating in released PbZr0.52Ti0.48O3 films. Journal of Applied Physics, 2020, 128, .	1.1	5
50	Empirical modeling of a polymer electrolyte fuel cell based on water transport investigation and current interrupt measurement. International Journal of Automotive Technology, 2009, 10, 719-732.	0.7	4
51	Integrating boron arsenide into power devices. Nature Electronics, 2021, 4, 380-381.	13.1	3
52	Thermal conductivity of plasma-enhanced atomic layer deposited hafnium zirconium oxide dielectric thin films. Journal of the European Ceramic Society, 2021, 41, 3397-3403.	2.8	3
53	Thermal characterization of GaN vertical p-i-n diodes. , 2017, , .		2
54	Temperature and Stress Metrology of Ultra-Wide Bandgap Î²-Ga<inf>2</inf>O<inf>3</inf> Thin Films. , 2018, , .		2

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55	Enhancement of the Electrical and Thermal Performance of AlGaN/GaN HEMTs Using a Novel Resistive Field Plate Structure. , 2019, , .		2
56	AlGaN/GaN HEMT device physics and electrothermal modeling. , 2022, , 103-163.		2
57	Characterization of the Thermal Boundary Resistance of a Ga2O3/4H-SiC Composite Wafer. , 2020, , .		1
58	The effectiveness of heat extraction by the drain metal contact of Î²-Ga2O3 MOSFETs. , 2021, , .		1
59	Characterization of the Interdependence Between the Light Output and Self-Heating of Gallium Nitride Light-Emitting Diodes. Journal of Electronic Packaging, Transactions of the ASME, 2020, 142, .	1.2	0
60	InterPACK2020. Journal of Electronic Packaging, Transactions of the ASME, 2021, , .	1.2	0