

# Tae In Lee

## List of Publications by Year in descending order

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115  
papers

3,148  
citations

257101

24  
h-index

174990

52  
g-index

116  
all docs

116  
docs citations

116  
times ranked

5064  
citing authors

#	ARTICLE	IF	CITATIONS
1	A wearable thermoelectric generator fabricated on a glass fabric. Energy and Environmental Science, 2014, 7, 1959.	15.6	784
2	Synthesis of ultrathin polymer insulating layers by initiated chemical vapour deposition for low-power soft electronics. Nature Materials, 2015, 14, 628-635.	13.3	229
3	Self-Powered Wearable Electrocardiography Using a Wearable Thermoelectric Power Generator. ACS Energy Letters, 2018, 3, 501-507.	8.8	226
4	Flexible Resistive Switching Memory Device Based on Graphene Oxide. IEEE Electron Device Letters, 2010, 31, 1005-1007.	2.2	145
5	Analysis on switching mechanism of graphene oxide resistive memory device. Journal of Applied Physics, 2011, 110, .	1.1	103
6	Monolayer graphene growth on sputtered thin film platinum. Journal of Applied Physics, 2009, 106, .	1.1	89
7	Wide memory window in graphene oxide charge storage nodes. Applied Physics Letters, 2010, 96, .	1.5	87
8	Thin-Film Thermoelectric Module for Power Generator Applications Using a Screen-Printing Method. Journal of Electronic Materials, 2011, 40, 615-619.	1.0	55
9	Observation of Ultrafast Carrier Dynamics and Phonon Relaxation of Graphene from the Deep-Ultraviolet to the Visible Region. Journal of Physical Chemistry C, 2014, 118, 6454-6461.	1.5	47
10	Highly air-stable electrical performance of graphene field effect transistors by interface engineering with amorphous fluoropolymer. Applied Physics Letters, 2011, 98, .	1.5	45
11	Free-Standing Graphene Thermophone on a Polymer-Mesh Substrate. Small, 2016, 12, 185-189.	5.2	43
12	High-Aspect Ratio $\hat{I}^2$ -Ga <sub>2</sub> O <sub>3</sub> Nanorods via Hydrothermal Synthesis. Nanomaterials, 2018, 8, 594.	1.9	43
13	Direct Graphene Transfer and Its Application to Transfer Printing Using Mechanically Controlled, Large Area Graphene/Copper Freestanding Layer. Advanced Functional Materials, 2018, 28, 1707102.	7.8	40
14	Cubic-Structured $\text{HfO}_2$ With Optimized Doping of Lanthanum for Higher Dielectric Constant. IEEE Electron Device Letters, 2009, 30, 623-625.	2.2	39
15	Effective Schottky Barrier Height Lowering of Metal/n-Ge with a TiO <sub>2</sub> /GeO <sub>2</sub> Interlayer Stack. ACS Applied Materials & Interfaces, 2016, 8, 35419-35425.	4.0	37
16	Enhanced thermoelectric properties of screen-printed Bi <sub>0.5</sub> Sb <sub>1.5</sub> Te <sub>3</sub> and Bi <sub>2</sub> Te <sub>2.7</sub> Se <sub>0.3</sub> thick films using a post annealing process with mechanical pressure. Journal of Materials Chemistry C, 2017, 5, 8559-8565.	2.7	37
17	Comparative study of chemically synthesized and exfoliated multilayer MoS <sub>2</sub> field-effect transistors. Applied Physics Letters, 2013, 102, 043116.	1.5	35
18	Application of N-Doped Three-Dimensional Reduced Graphene Oxide Aerogel to Thin Film Loudspeaker. ACS Applied Materials & Interfaces, 2016, 8, 22295-22300.	4.0	33

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19	Thermal display glove for interacting with virtual reality. Scientific Reports, 2020, 10, 11403.	1.6	27
20	Electrical and photocurrent properties of a polycrystalline Sn-doped $\hat{I}^2$ -Ga <sub>2</sub> O <sub>3</sub> thin film. Materials Science in Semiconductor Processing, 2021, 121, 105430.	1.9	27
21	Performance Improvement in Charge-Trap Flash Memory Using Lanthanum-Based High- $\kappa$ Blocking Oxide. IEEE Transactions on Electron Devices, 2009, 56, 2746-2751.	1.6	26
22	Improvement of memory performance by high temperature annealing of the Al <sub>2</sub> O <sub>3</sub> blocking layer in a charge-trap type flash memory device. Applied Physics Letters, 2010, 96, .	1.5	26
23	Ultrathin ZrO <sub>2</sub> -Organic Hybrid Dielectric (EOT 3.2 nm) via Initiated Chemical Vapor Deposition for High-Performance Flexible Electronics. ACS Applied Materials & Interfaces, 2019, 11, 44513-44520.	4.0	26
24	UV-Curable Silver Electrode for Screen-Printed Thermoelectric Generator. Advanced Functional Materials, 2019, 29, 1901505.	7.8	25
25	Effect of ZrO <sub>2</sub> interfacial layer on forming ferroelectric Hf <sub>x</sub> Zr <sub>y</sub> O <sub>z</sub> on Si substrate. AIP Advances, 2019, 9, .	0.6	24
26	Surface Passivation of Germanium Using SF <sub>6</sub> ; Plasma to Reduce Source/Drain Contact Resistance in Germanium n-FET. IEEE Electron Device Letters, 2015, 36, 745-747.	2.2	23
27	Compliment Graphene Oxide Coating on Silk Fiber Surface via Electrostatic Force for Capacitive Humidity Sensor Applications. Sensors, 2017, 17, 407.	2.1	23
28	Method to Achieve the Morphotropic Phase Boundary in Hf <sub>x</sub> Zr <sub>1-x</sub> O <sub>2</sub> by Electric Field Cycling for DRAM Cell Capacitor Applications. IEEE Electron Device Letters, 2021, 42, 517-520.	2.2	23
29	Performance evaluation of GaN light-emitting diodes using transferred graphene as current spreading layer. Journal of Applied Physics, 2014, 115, 054503.	1.1	22
30	The Mechanism of Schottky Barrier Modulation of Tantalum Nitride/Ge Contacts. IEEE Electron Device Letters, 2015, 36, 997-1000.	2.2	21
31	Impact of Al doping on a hydrothermally synthesized $\hat{I}^2$ -Ga <sub>2</sub> O <sub>3</sub> nanostructure for photocatalysis applications. RSC Advances, 2021, 11, 7338-7346.	1.7	20
32	The Efficacy of Metal-Interfacial Layer-Semiconductor Source/Drain Structure on Sub-10-nm n-Type Ge FinFET Performances. IEEE Electron Device Letters, 2014, 35, 1185-1187.	2.2	19
33	The Impact of an Ultrathin Y <sub>2</sub> O <sub>3</sub> Layer on GeO <sub>2</sub> Passivation in Ge MOS Gate Stacks. IEEE Transactions on Electron Devices, 2017, 64, 3303-3307.	1.6	19
34	Ultrathin EOT (0.67 nm) High-k Dielectric on Ge MOSFET Using Y Doped ZrO <sub>2</sub> With Record-Low Leakage Current. IEEE Electron Device Letters, 2019, 40, 502-505.	2.2	19
35	High performance graphene field effect transistors on an aluminum nitride substrate with high surface phonon energy. Applied Physics Letters, 2014, 104, 193112.	1.5	18
36	Design Strategy for Transformative Electronic System toward Rapid, Bidirectional Stiffness Tuning using Graphene and Flexible Thermoelectric Device Interfaces. Advanced Materials, 2021, 33, e2007239.	11.1	18

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37	Design of Electrochemically Reduced Graphene Oxide/Titanium Disulfide Nanocomposite Sensor for Selective Determination of Ascorbic Acid. <i>ACS Applied Nano Materials</i> , 2021, 4, 10077-10089.	2.4	17
38	Aluminum-Doped Gadolinium Oxides as Blocking Layer for Improved Charge Retention in Charge-Trap-Type Nonvolatile Memory Devices. <i>IEEE Transactions on Electron Devices</i> , 2009, 56, 2739-2745.	1.6	16
39	Large-Area, Periodic, Hexagonal Wrinkles on Nanocrystalline Graphitic Film. <i>Advanced Functional Materials</i> , 2015, 25, 5492-5503.	7.8	16
40	Hybrid Integration of Graphene Analog and Silicon Complementary Metal-Oxide Semiconductor Digital Circuits. <i>ACS Nano</i> , 2016, 10, 7142-7146.	7.3	16
41	The Work Function Behavior of Aluminum-Doped Titanium Carbide Grown by Atomic Layer Deposition. <i>IEEE Transactions on Electron Devices</i> , 2016, 63, 1423-1427.	1.6	16
42	A wearable organic photovoltaic-thermoelectric (OPV-TE) hybrid generator to minimize the open-circuit voltage losses of OPV module. <i>Nano Energy</i> , 2022, 93, 106775.	8.2	16
43	High-Performance MIM Capacitors Using HfLaO-Based Dielectrics. <i>IEEE Electron Device Letters</i> , 2010, 31, 17-19.	2.2	15
44	Impedance Spectroscopy Analysis and Equivalent Circuit Modeling of Graphene Oxide Solutions. <i>Nanomaterials</i> , 2017, 7, 446.	1.9	15
45	Two-Dimensional Thermal Haptic Module Based on a Flexible Thermoelectric Device. <i>Soft Robotics</i> , 2020, 7, 736-742.	4.6	15
46	An 8-nm-thick Sn-doped polycrystalline $\text{In}_2\text{S}_3$ -Ga <sub>2</sub> O <sub>3</sub> MOSFET with a normally off-operation. <i>Applied Physics Letters</i> , 2021, 119, .	1.5	15
47	Random Dopant Fluctuation-Induced Threshold Voltage Variation-Immune Ge FinFET With Metal-Interlayer Semiconductor Source/Drain. <i>IEEE Transactions on Electron Devices</i> , 2016, 63, 4167-4172.	1.6	14
48	Fermi-Level Unpinning Technique with Excellent Thermal Stability for n-Type Germanium. <i>ACS Applied Materials &amp; Interfaces</i> , 2017, 9, 35988-35997.	4.0	14
49	A High-Performance Top-Gated Graphene Field-Effect Transistor with Excellent Flexibility Enabled by an iCVD Copolymer Gate Dielectric. <i>Small</i> , 2018, 14, 1703035.	5.2	14
50	Control of Carrier Concentration by Ag Doping in N-Type Bi <sub>2</sub> Te <sub>3</sub> Based Compounds. <i>Applied Sciences (Switzerland)</i> , 2018, 8, 735.	1.3	14
51	High-Performance Monolithic Photovoltaic-Thermoelectric Hybrid Power Generator Using an Exothermic Reactive Interlayer. <i>ACS Applied Energy Materials</i> , 2019, 2, 2381-2386.	2.5	14
52	Large Grain Ruthenium for Alternative Interconnects. <i>IEEE Electron Device Letters</i> , 2019, 40, 91-94.	2.2	14
53	Dye-Sensitized Solar Cell-Thermoelectric Hybrid Generator Utilizing Bipolar Conduction in a Unified Element. <i>ACS Applied Energy Materials</i> , 2020, 3, 4155-4161.	2.5	14
54	Doping suppression and mobility enhancement of graphene transistors fabricated using an adhesion promoting dry transfer process. <i>Applied Physics Letters</i> , 2013, 103, .	1.5	13

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55	Wrinkle-free graphene with spatially uniform electrical properties grown on hot-pressed copper. Nano Research, 2015, 8, 1075-1080.	5.8	13
56	Fluorine Effects Originating From the CVD-W Process on Charge-Trap Flash Memory Cells. IEEE Transactions on Electron Devices, 2019, 66, 378-382.	1.6	13
57	Low-Voltage High-Performance Pentacene Thin-Film Transistors With Ultrathin PVP/High- $\kappa$ HfLaO Hybrid Gate Dielectric. IEEE Electron Device Letters, 2010, , .	2.2	12
58	Improved Drain Current Saturation and Voltage Gain in Graphene-Silicon Field Effect Transistors. Scientific Reports, 2016, 6, 25392.	1.6	12
59	Very Low-Work-Function ALD-Erbium Carbide ( $\text{ErC}_2$ ) Metal Electrode on High- $\kappa$ Dielectrics. IEEE Transactions on Electron Devices, 2016, 63, 2858-2863.	1.6	12
60	Metal Carbides for Band-Edge Work Function Metal Gate CMOS Devices. IEEE Transactions on Electron Devices, 2008, 55, 2469-2474.	1.6	11
61	Crystallized HfLaO embedded tetragonal $\text{ZrO}_2$ for dynamic random access memory capacitor dielectrics. Applied Physics Letters, 2011, 98, 173505.	1.5	11
62	Graphene as anode electrode for colloidal quantum dots based light emitting diodes. Applied Physics Letters, 2013, 103, 043124.	1.5	11
63	Effect of Hydrogen Annealing on Contact Resistance Reduction of Metal-Interlayer-Germanium Source/Drain Structure. IEEE Electron Device Letters, 2016, , 1-1.	2.2	11
64	Material characteristics and equivalent circuit models of stacked graphene oxide for capacitive humidity sensors. AIP Advances, 2016, 6, 035203.	0.6	10
65	A quantitative strain analysis of a flexible single-crystalline silicon membrane. Applied Physics Letters, 2017, 110, 033105.	1.5	10
66	Realization of High-Performance Screen-Printed Flexible Thermoelectric Generator by Improving Contact Characteristics. Advanced Materials Interfaces, 2017, 4, 1700870.	1.9	10
67	Enhanced Photocatalytic Degradation of 2-Butanone Using Hybrid Nanostructures of Gallium Oxide and Reduced Graphene Oxide Under Ultraviolet-C Irradiation. Catalysts, 2019, 9, 449.	1.6	10
68	Enhanced Photocatalytic Activity of Electrospun $\text{ZnO}$ - $\text{Ga}_2\text{O}_3$ Nanofibers via In-Situ Si Doping Using Tetraethyl Orthosilicate. Catalysts, 2019, 9, 1005.	1.6	10
69	A Flexible Micro-Thermoelectric Generator Sticker with Trapezoidal-Shaped Legs for Large Temperature Gradient and High-Power Density. Advanced Materials Technologies, 2020, 5, 2000486.	3.0	10
70	Mechanical Stability Analysis via Neutral Mechanical Plane for High-Performance Flexible Si Nanomembrane FDSOI Device. Advanced Materials Interfaces, 2017, 4, 1700618.	1.9	9
71	Material Optimization for a High Power Thermoelectric Generator in Wearable Applications. Applied Sciences (Switzerland), 2017, 7, 1015.	1.3	9
72	Comparison of $\text{Ga}_2\text{O}_3$ and $\text{TiO}_2$ Nanostructures for Photocatalytic Degradation of Volatile Organic Compounds. Catalysts, 2020, 10, 545.	1.6	9

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73	Multi-Layer Metallization Structure Development for Highly Efficient Polycrystalline SnSe Thermoelectric Devices. Applied Sciences (Switzerland), 2017, 7, 1116.	1.3	8
74	H <sub>2</sub> High Pressure Annealed Y-Doped ZrO <sub>2</sub> Gate Dielectric With an EOT of 0.57 nm for Ge MOSFETs. IEEE Electron Device Letters, 2019, 40, 1350-1353.	2.2	8
75	Variable Rigidity Module with a Flexible Thermoelectric Device for Bidirectional Temperature Control. Soft Robotics, 2021, 8, 662-672.	4.6	8
76	Hf- and Ti-Based Organic/Inorganic Hybrid Dielectrics Synthesized via Chemical Vapor Phase for Advanced Gate Stack in Flexible Electronic Devices. Advanced Electronic Materials, 2021, 7, 2001197.	2.6	8
77	Simultaneous measurement of the Seebeck coefficient and thermal conductivity in the cross-sectional direction of thermoelectric thick film. Journal of Applied Physics, 2012, 112, 104511.	1.1	7
78	Reduction of charge trapping in HfO <sub>2</sub> film on a Ge substrate by trimethylaluminum pretreatment. Physica Status Solidi - Rapid Research Letters, 2012, 6, 439-441.	1.2	7
79	Origin of transient V <sub>t</sub> shift after erase and its impact on 2D/3D structure charge trap flash memory cell operations. , 2012, , .		7
80	Demonstration of Ge pMOSFETs with 6 &#x00C5; EOT using TaN/ZrO <sub>2</sub> /Zr-cap/n-Ge(100) gate stack fabricated by novel vacuum annealing and in-situ metal capping method. , 2014, , .		7
81	First Demonstration of Ultra-Thin SiGe-Channel Junctionless Accumulation-Mode (JAM) Bulk FinFETs on Si Substrate with PN Junction-Isolation Scheme. IEEE Journal of the Electron Devices Society, 2014, 2, 123-127.	1.2	7
82	Improved electromigration-resistance of Cu interconnects by graphene-based capping layer. , 2015, , .		7
83	Schottky barrier height modulation of metal-“interlayer”-semiconductor structure depending on contact surface orientation for multi-gate transistors. Applied Physics Letters, 2019, 114, 012102.	1.5	7
84	Large-Area, Conformal, and Uniform Synthesis of Hybrid Polymeric Film via Initiated Chemical Vapor Deposition. Macromolecular Materials and Engineering, 2021, 306, 2000608.	1.7	7
85	Highly Reliable Charge Trap-Type Organic Non-Volatile Memory Device Using Advanced Band-Engineered Organic-Inorganic Hybrid Dielectric Stacks. Advanced Functional Materials, 2021, 31, 2103291.	7.8	7
86	Reliability improvement of a flexible FD-SOI MOSFET via heat management. Applied Physics Letters, 2017, 110, 252101.	1.5	6
87	Copolymer-Based Flexible Resistive Random Access Memory Prepared by Initiated Chemical Vapor Deposition Process. Advanced Electronic Materials, 2021, 7, 2100375.	2.6	6
88	A Novel Split-Gate Ferroelectric FET for a Compact and Energy Efficient Neuron. IEEE Electron Device Letters, 2022, 43, 1375-1378.	2.2	6
89	Lanthanum-Oxide-Doped Nitride Charge-Trap Layer for a TANOS Memory Device. IEEE Transactions on Electron Devices, 2011, 58, 3314-3320.	1.6	5
90	Electrospun SnO <sub>2</sub> and its composite V <sub>2</sub> O <sub>5</sub> nanofibers for thermoelectric power generator. Journal of Sol-Gel Science and Technology, 2021, 98, 183-192.	1.1	5

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91	Non-volatile memory using graphene oxide for flexible electronics. , 2010, , .		4
92	Structural and compositional dependence of gadolinium-aluminum oxide for the application of charge-trap-type nonvolatile memory devices. Applied Physics Letters, 2010, 96, 052907.	1.5	3
93	Effect of Metal Nitride on Contact Resistivity of Metal- Interlayer- Ge Source/Drain in Sub- 10 nm ntype Ge FinFET. IEEE Electron Device Letters, 2016, , 1-1.	2.2	3
94	Vertically Formed Graphene Stripe for 3D Field-Effect Transistor Applications. Small, 2017, 13, 1602373.	5.2	3
95	Construction of a Multiway Carbon Nanotube Loudspeaker with Finely Tunable Resonance Frequencies. Advanced Materials Technologies, 2018, 3, 1700197.	3.0	3
96	Energy-Band-Engineered Unified-RAM (URAM) Cell on Buried $\text{Si}_{1-y}\text{C}_y$ Substrate for Multifunctioning Flash Memory and 1T-DRAM. IEEE Transactions on Electron Devices, 2009, 56, 641-647.	1.6	2
97	Dramatic improvement of high-k gate dielectric reliability by using mono-layer graphene gate electrode. , 2012, , .		2
98	Development of a Measurement Method for the Thermal Conductivity of a Thick Film Prepared by a Screen-Printing Technique. Journal of Electronic Materials, 2012, 41, 1170-1176.	1.0	2
99	Valley-engineered ultra-thin silicon for high-performance junctionless transistors. Scientific Reports, 2016, 6, 29354.	1.6	2
100	Investigation of Border Trap Characteristics in the AlON/GeO <sub>2</sub> /Ge Gate Stacks. IEEE Transactions on Electron Devices, 2017, 64, 3998-4001.	1.6	2
101	Fermi Level Depinning in Ti/GeO <sub>2</sub> /n-Ge via the Interfacial Reaction Between Ti and GeO <sub>2</sub> . IEEE Transactions on Electron Devices, 2017, 64, 4242-4245.	1.6	2
102	Conformal, Wafer-Scale and Controlled Nanoscale Doping of Semiconductors Via the iCVD Process. , 2018, , .		2
103	Performance Degradation of Flexible Si Nanomembrane Transistors With Al <sub>2</sub> O <sub>3</sub> and SiO <sub>2</sub> Dielectrics Under Mechanical Stress. IEEE Transactions on Electron Devices, 2018, 65, 3069-3072.	1.6	2
104	Minimally invasive medical catheter with highly flexible FDSOI-based integrated circuits. , 2019, , .		2
105	Non-volatile memory device using graphene oxide. , 2011, , .		1
106	First demonstration of a wrap-gated CNT-FET with vertically-suspended channels. , 2016, , .		1
107	Influence of Self-Heating Effect on Interface Trap Generation in Highly Flexible Single-Crystalline Si Nanomembrane Transistors. Journal of Nanoscience and Nanotechnology, 2019, 19, 6481-6486.	0.9	1
108	Transformative Electronics: Design Strategy for Transformative Electronic System toward Rapid, Bidirectional Stiffness Tuning using Graphene and Flexible Thermoelectric Device Interfaces (Adv.) Tj ETQq0 0 0 rgBTi/Overlock 10 Tf 00		

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109	Design of low cost, scalable, and high-performance TiS <sub>2</sub> thermoelectric materials via wet ball-milling process. Journal of Materials Science: Materials in Electronics, 0, , 1.	1.1	1
110	Performance enhancement of p-type organic thin-film transistors by surface modification of hybrid dielectrics. Organic Electronics, 2021, 96, 106250.	1.4	1
111	Channel Mobility Boosting in a Poly-Si Channel Using Ge Diffusion Engineering and Hydrogen Plasma Treatment. IEEE Electron Device Letters, 2022, 43, 342-345.	2.2	1
112	Organic/inorganic hybrid gate dielectric for high-performance and low-power organic thin-film transistors. , 2010, , .		0
113	Dependence of Graphene Properties on Dielectric Under-layers. , 2011, , .		0
114	Selective Pore-Sealing of Highly Porous Ultralow-k dielectrics for ULSI Interconnects by Cyclic Initiated Chemical Vapor Deposition Process. , 2018, , .		0
115	Mechanical and Electrical Reliability Analysis of Flexible Si Complementary Metal-Oxide-Semiconductor Integrated Circuit. Journal of Nanoscience and Nanotechnology, 2019, 19, 6473-6480.	0.9	0