

# Kwang Hong Lee

## List of Publications by Year in descending order

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80  
papers

1,344  
citations

304743

22  
h-index

377865

34  
g-index

81  
all docs

81  
docs citations

81  
times ranked

1297  
citing authors

#	ARTICLE	IF	CITATIONS
1	Low-threshold optically pumped lasing in highly strained germanium nanowires. Nature Communications, 2017, 8, 1845.	12.8	131
2	High-efficiency GeSn/Ge multiple-quantum-well photodetectors with photon-trapping microstructures operating at 2 Åµm. Optics Express, 2020, 28, 10280.	3.4	67
3	Germanium-on-silicon nitride waveguides for mid-infrared integrated photonics. Applied Physics Letters, 2016, 109, .	3.3	66
4	High-efficiency normal-incidence vertical p-i-n photodetectors on a germanium-on-insulator platform. Photonics Research, 2017, 5, 702.	7.0	52
5	Fabrication and characterization of germanium-on-insulator through epitaxy, bonding, and layer transfer. Journal of Applied Physics, 2014, 116, .	2.5	49
6	Monolithic Integration of InSb Photodetector on Silicon for Mid-Infrared Silicon Photonics. ACS Photonics, 2018, 5, 1512-1520.	6.6	49
7	Growth and characterization of germanium epitaxial film on silicon (001) with germane precursor in metal organic chemical vapour deposition (MOCVD) chamber. AIP Advances, 2013, 3, .	1.3	47
8	Reduction of threading dislocation density in Ge/Si using a heavily As-doped Ge seed layer. AIP Advances, 2016, 6, .	1.3	47
9	Defects reduction of Ge epitaxial film in a germanium-on-insulator wafer by annealing in oxygen ambient. APL Materials, 2015, 3, .	5.1	43
10	High Performance Flexible Visible-Blind Ultraviolet Photodetectors with Two-Dimensional Electron Gas Based on Unconventional Release Strategy. ACS Nano, 2021, 15, 8386-8396.	14.6	38
11	Dark current analysis of germanium-on-insulator vertical <i>p-i-n</i> photodetectors with varying threading dislocation density. Journal of Applied Physics, 2020, 127, .	2.5	35
12	A review of silicon-based wafer bonding processes, an approach to realize the monolithic integration of Si-CMOS and IIIâ€V-on-Si wafers. Journal of Semiconductors, 2021, 42, 023106.	3.7	34
13	Integration of GaAs, GaN, and Si-CMOS on a common 200 mm Si substrate through multilayer transfer process. Applied Physics Express, 2016, 9, 086501.	2.4	33
14	GeSn lateral p-i-n photodetector on insulating substrate. Optics Express, 2018, 26, 17312.	3.4	33
15	GeSn-on-insulator substrate formed by direct wafer bonding. Applied Physics Letters, 2016, 109, .	3.3	31
16	The role of AsH <sub>3</sub> partial pressure on anti-phase boundary in GaAs-on-Ge grown by MOCVD â€“ Application to a 200mm GaAs virtual substrate. Journal of Crystal Growth, 2015, 421, 58-65.	1.5	28
17	Integrating GeSn photodiode on a 200 mm Ge-on-insulator photonics platform with Ge CMOS devices for advanced OEIC operating at 2 Î¼m band. Optics Express, 2019, 27, 26924.	3.4	28
18	Comparative Studies of the Growth and Characterization of Germanium Epitaxial Film on Silicon (001) with 0Â° and 6Â° Offcut. Journal of Electronic Materials, 2013, 42, 1133-1139.	2.2	26

#	ARTICLE	IF	CITATIONS
19	Germanium-Tin (GeSn) P-Channel Fin Field-Effect Transistor Fabricated on a Novel GeSn-on-Insulator Substrate. IEEE Transactions on Electron Devices, 2018, 65, 3754-3761.	3.0	26
20	High-performance GeSn photodetector and fin field-effect transistor (FinFET) on an advanced GeSn-on-insulator platform. Optics Express, 2018, 26, 10305.	3.4	25
21	Fabrication and characterization of single junction GaAs solar cells on Si with As-doped Ge buffer. Solar Energy Materials and Solar Cells, 2017, 172, 140-144.	6.2	23
22	Spiral Waveguides on Germanium-on-Silicon Nitride Platform for Mid-IR Sensing Applications. IEEE Photonics Journal, 2018, 10, 1-7.	2.0	23
23	High speed and ultra-low dark current Ge vertical p-i-n photodetectors on an oxygen-annealed Ge-on-insulator platform with GeO <sub>x</sub> surface passivation. Optics Express, 2020, 28, 23978.	3.4	23
24	Resonant-cavity-enhanced responsivity in germanium-on-insulator photodetectors. Optics Express, 2020, 28, 23739.	3.4	22
25	Interferential lithography of 1D thin metallic sinusoidal gratings: Accurate control of the profile for azimuthal angular dependent plasmonic effects and applications. Microelectronic Engineering, 2009, 86, 573-576.	2.4	21
26	Integration of III-V materials and Si-CMOS through double layer transfer process. Japanese Journal of Applied Physics, 2015, 54, 030209.	1.5	21
27	Monolithic Integration of Si-CMOS and III-V-on-Si Through Direct Wafer Bonding Process. IEEE Journal of the Electron Devices Society, 2018, 6, 571-578.	2.1	19
28	Decoupling two-step anodization in anodic aluminum oxide. Journal of Applied Physics, 2009, 106, 104305.	2.5	18
29	Preventing phase separation in MOCVD-grown InAlAs compositionally graded buffer on silicon substrate using InGaAs interlayers. Journal of Crystal Growth, 2017, 478, 64-70.	1.5	18
30	The first GeSn FinFET on a novel GeSnOI substrate achieving lowest S of 79 mV/decade and record high G <sub>m</sub> , int of 807 $\frac{1}{4}S/1\frac{1}{4}m$ for GeSn P-FETs. , 2017, , .		18
31	Hetero-epitaxy of high quality germanium film on silicon substrate for optoelectronic integrated circuit applications. Journal of Materials Research, 2017, 32, 4025-4040.	2.6	15
32	Monolithic integration of III-V HEMT and Si-CMOS through TSV-less 3D wafer stacking. , 2015, , .		14
33	Heteroepitaxial growth of In <sub>0.30</sub> Ga <sub>0.70</sub> As high-electron mobility transistor on 200 mm silicon substrate using metamorphic graded buffer. AIP Advances, 2016, 6, 085106.	1.3	14
34	Suppression of interfacial voids formation during silane (SiH <sub>4</sub> )-based silicon oxide bonding with a thin silicon nitride capping layer. Journal of Applied Physics, 2018, 123, .	2.5	14
35	Impacts of doping on epitaxial germanium thin film quality and Si-Ge interdiffusion. Optical Materials Express, 2018, 8, 1117.	3.0	11
36	Low-power and high-detectivity Ge photodiodes by in-situ heavy As doping during Ge-on-Si seed layer growth. Optics Express, 2021, 29, 2940.	3.4	11

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37	Nanotip fabrication by Anodic Aluminum Oxide templating. <i>Electrochimica Acta</i> , 2011, 56, 2394-2398.	5.2	10
38	In <sub>0.49</sub> Ga <sub>0.51</sub> P/GaAs heterojunction bipolar transistors (HBTs) on 200 mm Si substrates: Effects of base thickness, base and sub-collector doping concentrations. <i>AIP Advances</i> , 2018, 8, 115132.	1.3	10
39	Sub-mA/cm <sup>2</sup> Dark Current Density, Buffer-Less Germanium (Ge) Photodiodes on a 200-mm Ge-on-Insulator Substrate. <i>IEEE Transactions on Electron Devices</i> , 2021, 68, 1730-1737.	3.0	10
40	Fabrication of periodic square arrays by angle-resolved nanosphere lithography. <i>Microelectronic Engineering</i> , 2010, 87, 1941-1944.	2.4	9
41	MOCVD growth of InGaP/GaAs heterojunction bipolar transistors on 200 mm Si wafers for heterogeneous integration with Si CMOS. <i>Semiconductor Science and Technology</i> , 2018, 33, 115011.	2.0	8
42	High-performance AlGaInP light-emitting diodes integrated on silicon through a superior quality germanium-on-insulator. <i>Photonics Research</i> , 2018, 6, 290.	7.0	8
43	Releasable AlGaIn/GaN 2D Electron Gas Heterostructure Membranes for Flexible Wide-Bandgap Electronics. <i>Advanced Electronic Materials</i> , 2022, 8, 2100652.	5.1	8
44	Thermal stability of germanium-tin (GeSn) fins. <i>Applied Physics Letters</i> , 2017, 111, 252103.	3.3	7
45	Gourd-shaped hole array germanium (Ge)-on-insulator photodiodes with improved responsivity and specific detectivity at 1,550 nm. <i>Optics Express</i> , 2021, 29, 16520.	3.4	7
46	Ge-on-insulator lateral p-i-n waveguide photodetectors for optical communication. <i>Optics Letters</i> , 2020, 45, 6683.	3.3	7
47	MOCVD Growth of High Quality InGaAs HEMT Layers on Large Scale Si Wafers for Heterogeneous Integration With Si CMOS. <i>IEEE Transactions on Semiconductor Manufacturing</i> , 2017, 30, 456-461.	1.7	6
48	Integration of InGaAs MOSFETs and GaAs/ AlGaAs lasers on Si Substrate for advanced opto-electronic integrated circuits (OEICs). <i>Optics Express</i> , 2017, 25, 31853.	3.4	6
49	Strain relaxation of germanium-tin (GeSn) fins. <i>AIP Advances</i> , 2018, 8, 025111.	1.3	6
50	PIC-integrable, uniformly tensile-strained Ge-on-insulator photodiodes enabled by recessed SiN <sub>x</sub> stressor. <i>Photonics Research</i> , 2021, 9, 1255.	7.0	6
51	Growth and Characterizations of GeSn Films with High Sn Composition by Chemical Vapor Deposition (CVD) Using Ge <sub>2</sub> H <sub>6</sub> and SnCl <sub>4</sub> for Mid-IR Applications. <i>ECS Transactions</i> , 2020, 98, 91-98.	0.5	6
52	Suspended germanium membranes photodetector with tunable biaxial tensile strain and location-determined wavelength-selective photoresponsivity. <i>Applied Physics Letters</i> , 2021, 119, .	3.3	6
53	Germanium-on-insulator virtual substrate for InGaP epitaxy. <i>Materials Science in Semiconductor Processing</i> , 2017, 58, 15-21.	4.0	5
54	Performance of AlGaInP LEDs on silicon substrates through low threading dislocation density (TDD) germanium buffer layer. <i>Semiconductor Science and Technology</i> , 2018, 33, 104004.	2.0	5

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55	Metal-Semiconductor-Metal Photodetectors on a GeSn-on-Insulator Platform for 2 $\mu\text{m}$ Applications. IEEE Photonics Journal, 2022, 14, 1-6.	2.0	5
56	Red InGaP light-emitting diodes epitaxially grown on engineered Ge-on-Si substrates. , 2016, , .		4
57	Extension of Germanium-on-insulator optical absorption edge using CMOS-compatible silicon nitride stressor. , 2017, , .		4
58	The Role of Polarization on 2D Plasmonic Crystals. Plasmonics, 2011, 6, 373-380.	3.4	3
59	Variation of Nanopore Diameter Along Porous Anodic Alumina Channels by Multi-Step Anodization. Journal of Nanoscience and Nanotechnology, 2011, 11, 1147-1153.	0.9	3
60	Epitaxy and characterization of GaInP/AlInP light-emitting diodes on As-doped Ge/Si substrates. Optics Express, 2016, 24, 23129.	3.4	3
61	Control wafer bow of InGaP on 200 mm Si by strain engineering. Semiconductor Science and Technology, 2017, 32, 125013.	2.0	3
62	Metal-semiconductor-metal photodetectors on a GeSn-on-insulator platform. , 2019, , .		3
63	Improved thin film quality and photoluminescence of N-doped epitaxial germanium-on-silicon using MOCVD. Optical Materials Express, 2020, 10, 1.	3.0	3
64	GeSn p-FinFETs with Sub-10 nm Fin Width Realized on a 200 mm GeSnOI Substrate: Lowest SS of 63 mV/decade, Highest $G_m$ of 900 $\mu\text{S}/\mu\text{m}$ , and High-Field $\mu_{\text{eff}}$ of 275 $\text{cm}^2/\text{Vs}$ . , 2018, , .		2
65	High-Frequency Characteristics of InGaP/GaAs Double Heterojunction Bipolar Transistor Epitaxially Grown on 200 mm Ge/Si Wafers. IEEE Journal of the Electron Devices Society, 2020, 8, 122-125.	2.1	2
66	CMOS-Compatible Ti/TiN/Al Refractory Ohmic Contact for GaAs Heterojunction Bipolar Transistors Grown on Ge/Si Substrate. IEEE Transactions on Electron Devices, 2021, 68, 6065-6068.	3.0	2
67	Curvature evolution of 200 mm diameter GaN-on-insulator wafer fabricated through metalorganic chemical vapor deposition and bonding. Japanese Journal of Applied Physics, 2018, 57, 051002.	1.5	1
68	Dark Current Analysis of Vertical p-i-n Photodetectors on a Germanium-on-Insulator Platform. , 2019, , .		1
69	Germanium Photodetectors with 60-nm Absorption Coverage Extension and $\sim 1/2$ — Quantum Efficiency Enhancement across L-Band. , 2019, , .		1
70	Modeling and fabrication of Ge-on-Si $\text{N}_4$ for low bend-loss waveguides. , 2016, , .		0
71	Epitaxy and wafer bonding of AlGaInP multiple-quantum wells and light-emitting diodes on 8 $\times$ 3 Si substrates. , 2016, , .		0
72	In $_{0.30}$ Ga $_{0.70}$ As QW MOSFETs with peak mobility exceeding 3000 $\text{cm}^2/\text{Vs}$ fabricated on Si substrates. , 2016, , .		0

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73	High quality Ge-OI, III-V-OI on 200 mm Si substrate. , 2016, , .		0
74	The integration of InGaP LEDs with CMOS on 200 mm silicon wafers. , 2017, , .		0
75	Germanium-on-insulator virtual substrate for InGaP epitaxy. Materials Science in Semiconductor Processing, 2017, 70, 17-23.	4.0	0
76	Germanium-on-silicon nitride: A promising platform for mid-IR sensing applications. , 2017, , .		0
77	Germanium Photodetector with Enhanced Photo-Response at the L-Band and Beyond for Integrated Photonic Applications. , 2018, , .		0
78	Investigation of Resonant-Cavity-Enhanced GeSn Photodetectors in Short-Wavelength Infrared Regime. , 2019, , .		0
79	High brightness and bonding yield of integrated Si-CMOS and GaN LED wafers. , 2019, , .		0
80	High-efficiency photo detection at 2 $\mu\text{m}$ realized by GeSn/Ge multiple-quantum-well photodetectors with photon-trapping microstructure. , 2020, , .		0