Lay Kee Ang

List of Publications by Citations

181 papers	4,995 citations	39 h-index	61 g-index
251 ext. papers	6,369 ext. citations	5.1 avg, IF	6.28 L-index

#	Paper	IF	Citations
181	Multipactor discharge on metals and dielectrics: Historical review and recent theories. *Physics of Plasmas*, **1998**, 5, 2120-2126	2.1	236
180	New scaling of child-langmuir law in the quantum regime. *Physical Review Letters*, **2003**, 91, 208303	7.4	163
179	Optical Refractive Index Sensors with Plasmonic and Photonic Structures: Promising and Inconvenient Truth. *Advanced Optical Materials*, **2019**, 7, 1801433	8.1	156
178	Synergistic Effects of Plasmonics and Electron Trapping in Graphene Short-Wave Infrared Photodetectors with Ultrahigh Responsivity. *ACS Nano*, **2017**, 11, 430-437	16.7	153
177	Ultrashort-pulse child-langmuir law in the quantum and relativistic regimes. *Physical Review Letters*, **2007**, 98, 164802	7.4	136
176	Electrical transport and persistent photoconductivity in monolayer MoS phototransistors. *Nanotechnology*, **2017**, 28, 214002	3.4	133
175	Electron Thermionic Emission from Graphene and a Thermionic Energy Converter. *Physical Review Applied*, **2015**, 3,	4.3	120
174	Asymmetric Schottky Contacts in Bilayer MoS2 Field Effect Transistors. *Advanced Functional Materials*, **2018**, 28, 1800657	15.6	119
173	100 years of the physics of diodes. *Applied Physics Reviews*, **2017**, 4, 011304	17.3	104
172	Space-charge-limited flows in the quantum regimea). *Physics of Plasmas*, **2006**, 13, 056701	2.1	102
171	Power deposited on a dielectric by multipactor. *IEEE Transactions on Plasma Science*, **1998**, 26, 290-295	1.3	96
170	Pushing the limits of CMOS optical parametric amplifiers with USRN:SiN above the two-photon absorption edge. *Nature Communications*, **2017**, 8, 13878	17.4	92
169	Bifunctional porous iron phosphide/carbon nanostructure enabled high-performance sodium-ion battery and hydrogen evolution reaction. *Energy Storage Materials*, **2018**, 15, 98-107	19.4	80
168	Universal Scaling Laws in Schottky Heterostructures Based on Two-Dimensional Materials. *Physical Review Letters*, **2018**, 121, 056802	7.4	80
167	Effects of an external magnetic field, and of oblique radio-frequency electric fields on multipactor discharge on a dielectric. *Physics of Plasmas*, **2000**, 7, 750-757	2.1	79
166	Cubic-shaped WS2 nanopetals on a Prussian blue derived nitrogen-doped carbon nanoporous framework for high performance sodium-ion batteries. *Journal of Materials Chemistry A*, **2017**, 5, 10406-10415	12	77
165	Analysis of laser absorption on a rough metal surface. *Applied Physics Letters*, **1997**, 70, 696-698	3.4	74

164	Two-dimensional analytical Mott-Gurney law for a trap-filled solid. *Applied Physics Letters*, **2007**, 90, 153505	3.4	71
163	High Sensitivity Surface Plasmon Resonance Sensor Based on Two-Dimensional MXene and Transition Metal Dichalcogenide: A Theoretical Study. *Nanomaterials*, **2019**, 9,	5.4	65
162	Simple derivation of quantum scaling in Child-Langmuir law. *IEEE Transactions on Plasma Science*, **2004**, 32, 410-412	1.3	63
161	Valleytronics in merging Dirac cones: All-electric-controlled valley filter, valve, and universal reversible logic gate. *Physical Review B*, **2017**, 96,	3.3	62
160	Electro-optical graphene plasmonic logic gates. *Optics Letters*, **2014**, 39, 1629-32	3	59
159	Two-dimensional van der Waals electrical contact to monolayer MoSi2N4. *Applied Physics Letters*, **2021**, 118, 013106	3.4	54
158	Mid-infrared active graphene nanoribbon plasmonic waveguide devices. *Journal of the Optical Society of America B: Optical Physics*, **2013**, 30, 3111	1.7	48
157	Three-dimensional Child–Langmuir law for uniform hot electron emission. *Physics of Plasmas*, **2005**, 12, 053107	2.1	48
156	Thermionic Energy Conversion Based on Graphene van der Waals Heterostructures. *Scientific Reports*, **2017**, 7, 46211	4.9	46
155	Space-charge limited current in nanodiodes: Ballistic, collisional, and dynamical effects. *Journal of Applied Physics*, **2021**, 129, 100902	2.5	45
154	Enhanced stability of filament-type resistive switching by interface engineering. *Scientific Reports*, **2017**, 7, 43664	4.9	44
153	2D Black Phosphorus/SrTiO3 -Based Programmable Photoconductive Switch. *Advanced Materials*, **2016**, 28, 7768-73	24	44
152	Novel scaling laws for the Langmuir-Blodgett solutions in cylindrical and spherical diodes. *Physical Review Letters*, **2013**, 110, 265007	7.4	43
151	Theoretical modeling of electron emission from graphene. *MRS Bulletin*, **2017**, 42, 505-510	3.2	43
150	Reliable and flexible carbon-nanofiber-based all-plastic field emission devices. *Applied Physics Letters*, **2007**, 90, 143103	3.4	43
149	Surface instability of multipulse laser ablation on a metallic target. *Journal of Applied Physics*, **1998**, 83, 4466-4471	2.5	43
148	Over-barrier side-band electron emission from graphene with a time-oscillating potential. *Carbon*, **2013**, 61, 294-298	10.4	42
147	Current-Temperature Scaling for a Schottky Interface with Nonparabolic Energy Dispersion. *Physical Review Applied*, **2016**, 6,	4.3	42

146	Single-Crystal Pd and its Alloy Nanowires for Plasmon Propagation and Highly Sensitive Hydrogen Detection. *Advanced Optical Materials*, **2014**, 2, 189-196	8.1	40
145	Janus PtSSe and graphene heterostructure with tunable Schottky barrier. *Applied Physics Letters*, **2019**, 115, 241601	3.4	40
144	Multi-level information fusion to alleviate network congestion. *Information Fusion*, **2020**, 63, 248-255	16.7	39
143	Chiral Tunneling-Assisted Over-Barrier Electron Emission From Graphene. *IEEE Transactions on Electron Devices*, **2014**, 61, 1764-1770	2.9	39
142	Two-dimensional transition metal dichalcogenides mediated long range surface plasmon resonance biosensors. *Journal Physics D: Applied Physics*, **2019**, 52, 065101	3	38
141	Fractional Fowler□Nordheim Law for Field Emission From Rough Surface With Nonparabolic Energy Dispersion. *IEEE Transactions on Electron Devices*, **2018**, 65, 2089-2095	2.9	37
140	Multipactor discharge in a dielectric-loaded accelerating structure. *Physics of Plasmas*, **2007**, 14, 013105	2.1	36
139	Waveguide engineering of graphene□ nonlinearity. *Applied Physics Letters*, **2014**, 105, 111110	3.4	35
138	Ultracompact vanadium dioxide dual-mode plasmonic waveguide electroabsorption modulator. *Nanophotonics*, **2013**, 2, 13-19	6.3	35
137	Nonequilibrium model of ultrafast laser-induced electron photofield emission from a dc-biased metallic surface. *Physical Review B*, **2008**, 78,	3.3	35
136	Design Multifunctional Catalytic Interface: Toward Regulation of Polysulfide and Li S Redox Conversion in Li-S Batteries. *Small*, **2019**, 15, e1906132	11	35
135	Wavelength selective mode division multiplexing on a silicon chip. *Optics Express*, **2015**, 23, 8095-103	3.3	33
134	Child□Langmuir law in the Coulomb blockade regime. *Applied Physics Letters*, **2011**, 98, 051502	3.4	33
133	Nonlinear plasmonics of three-dimensional Dirac semimetals. *APL Photonics*, **2019**, 4, 034402	5.2	32
132	Ultrafast, broadband, and configurable midinfrared all-optical switching in nonlinear graphene plasmonic waveguides. *APL Photonics*, **2016**, 1, 046101	5.2	32
131	Concurrent Synthesis of High-Performance Monolayer Transition Metal Disulfides. *Advanced Functional Materials*, **2017**, 27, 1605896	15.6	31
130	Electron beam ablation of materials. *Journal of Applied Physics*, **1999**, 86, 7129-7138	2.5	31
129	Fractional-dimensional Child-Langmuir law for a rough cathode. *Physics of Plasmas*, **2016**, 23, 072118	2.1	31

128	All-optical control on a graphene-on-silicon waveguide modulator. *Scientific Reports*, **2017**, 7, 12748	4.9	29
127	Rhenium disulfide nanosheets/carbon composite as novel anodes for high-rate and long lifespan sodium-ion batteries. *Nano Energy*, **2019**, 61, 626-636	17.1	29
126	Tailoring NiO Nanostructured Arrays by Sulfate Anions for Sodium-Ion Batteries. *Small*, **2018**, 14, e1800898	13	29
125	Klein tunnelling model of low energy electron field emission from single-layer graphene sheet. *Applied Physics Letters*, **2011**, 99, 013112	3.4	29
124	Space charge limited current emission for a sharp tip. *Physics of Plasmas*, **2015**, 22, 052106	2.1	28
123	Generalized High-Energy Thermionic Electron Injection at Graphene Interface. *Physical Review Applied*, **2019**, 12,	4.3	28
122	Semiconductor-to-metal transition in bilayer MoSi2N4 and WSi2N4 with strain and electric field. *Applied Physics Letters*, **2021**, 118, 113102	3.4	27
121	A Compact Model for Undoped Silicon-Nanowire MOSFETs With Schottky-Barrier Source/Drain. *IEEE Transactions on Electron Devices*, **2009**, 56, 1100-1109	2.9	26
120	Nonlocal transistor based on pure crossed Andreev reflection in a EuO-graphene/superconductor hybrid structure. *Physical Review B*, **2016**, 93,	3.3	25
119	Experimental and theoretical analysis of argon plasma-enhanced quantum-well intermixing. *IEEE Journal of Quantum Electronics*, **2004**, 40, 166-174	2	25
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116	Ultrafast laser-induced electron emission from multiphoton to optical tunneling. *Physical Review B*, **2012**, 86,	3.3	24
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113	ZnSe Modified Zinc Metal Anodes: Toward Enhanced Zincophilicity and Ionic Diffusion. *Small*, **2021**, 17, e2101728	11	24
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110	Quantum model of space-charge-limited field emission in a nanogap. *Nanotechnology*, **2008**, 19, 235402	3.4	23
109	In situ epitaxial engineering of graphene and h-BN lateral heterostructure with a tunable morphology comprising h-BN domains. *NPG Asia Materials*, **2019**, 11,	10.3	22
108	Onset of space charge limited current for field emission from a single sharp tip. *Physics of Plasmas*, **2012**, 19, 033107	2.1	21
107	Field emission from a single carbon nanofiber at sub 100nm gap. *Applied Physics Letters*, **2008**, 93, 023133	3.4	21
106	Microstructural Engineering of Cathode Materials for Advanced Zinc-Ion Aqueous Batteries. *Advanced Science*, **2020**, 8, 2002722	13.6	21
105	Thickness Dependence of Space-Charge-Limited Current in Spatially Disordered Organic Semiconductors. *IEEE Transactions on Electron Devices*, **2018**, 65, 3421-3429	2.9	20
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103	Electron beam ablation versus laser ablation: plasma plume diagnostic studies. *Applied Surface Science*, **1998**, 127-129, 947-952	6.7	20
102	Time-dependent quantum tunneling and nonequilibrium heating model for the generalized Einstein photoelectric effect. *Physical Review B*, **2013**, 88,	3.3	19
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98	Adiabatic control of surface plasmon-polaritons in a 3-layers graphene curved configuration. *Carbon*, **2018**, 127, 187-192	10.4	18
97	Reducing Contact Resistance in Two-Dimensional-Material-Based Electrical Contacts by Roughness Engineering. *Physical Review Applied*, **2020**, 13,	4.3	17
96	Imaging nodal knots in momentum space through topolectrical circuits. *Nature Communications*, **2020**, 11, 4385	17.4	17
95	A modified Schottky model for graphene-semiconductor (3D/2D) contact: A combined theoretical and experimental study **2016**,		17
94	Highly Efficient Midinfrared On-Chip Electrical Generation of Graphene Plasmons by Inelastic Electron Tunneling Excitation. *Physical Review Applied*, **2015**, 3,	4.3	15
93	Two-dimensional model of space charge limited electron injection into a diode with Schottky contact. *Journal Physics D: Applied Physics*, **2009**, 42, 055504	3	15

92	Limiting current density in a crossed-field nanogap. *Physical Review E*, **2001**, 64, 017501	2.4	15
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87	From Self-Assembly Hierarchical h-BN Patterns to Centimeter-Scale Uniform Monolayer h-BN Film. *Advanced Materials Interfaces*, **2019**, 6, 1801493	4.6	14
86	Surface Exciton Polaritons: A Promising Mechanism for Refractive-Index Sensing. *Physical Review Applied*, **2019**, 12,	4.3	13
85	Electronic Scattering of Graphene Plasmons in the Terahertz Nonlinear Regime. *IEEE Journal of Selected Topics in Quantum Electronics*, **2017**, 23, 1-6	3.8	13
84	Transition radiation from graphene plasmons by a bunch beam in the terahertz regime. *Optics Express*, **2017**, 25, 20477-20485	3.3	13
83	Analysis of nonuniform field emission from a sharp tip emitter of Lorentzian or hyperboloid shape. *Journal of Applied Physics*, **2013**, 113, 144902	2.5	13
82	Efficient generation of extreme terahertz harmonics in three-dimensional Dirac semimetals. *Physical Review Research*, **2020**, 2,	3.9	13
81	Graphene-based thermionic-thermoradiative solar cells: Concept, efficiency limit, and optimum design. *Journal of Cleaner Production*, **2020**, 242, 118444	10.3	13
80	Plasmon-Enhanced Resonant Photoemission Using Atomically Thick Dielectric Coatings. *ACS Nano*, **2020**, 14, 8806-8815	16.7	12
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68	Interface engineering by atomically thin layer tungsten disulfide catalyst for high performance Li□ battery. *Materials Today Energy*, **2020**, 16, 100380	7	10
67	Cubic Spinel XIn2S4 (X = Fe, Co, Mn): A New Type of Anode Material for Superfast and Ultrastable Na-Ion Storage. *Advanced Energy Materials*,2102137	21.8	10
66	Three-terminal heterojunction bipolar transistor solar cells with non-ideal effects: Efficiency limit and parametric optimum selection. *Energy Conversion and Management*, **2019**, 188, 112-119	10.6	9
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63	Absolute instability in a traveling wave tube model. *Physics of Plasmas*, **1998**, 5, 4408-4410	2.1	9
62	Design of an InSb thermoradiative system for harvesting low-grade waste heat. *Optics Letters*, **2019** , 44, 3354-3357	3	9
61	Superior and tunable gas sensing properties of Janus PtSSe monolayer. *Nano Express*, **2020**, 1, 010042	2	8
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55	Generalized Scaling Law for Exciton Binding Energy in Two-Dimensional Materials. *Physical Review Applied*, **2020**, 13,	4.3	7
54	A new coupling mechanism between two graphene electron waveguides for ultrafast switching. *Semiconductor Science and Technology*, **2018**, 33, 035014	1.8	7
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50	Quantum Transport in Two-Dimensional WS with High-Efficiency Carrier Injection through Indium Alloy Contacts. *ACS Nano*, **2020**, 14, 13700-13708	16.7	7
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44	A rigorous surface-potential-based I-V model for undoped cylindrical nanowire MOSFETs **2007**,		6
43	Dynamics of electron beam ablation of silicon dioxide measured by dye laser resonance absorption photography. *Applied Physics Letters*, **1998**, 73, 2576-2578	3.4	6
42	Strongly anisotropic field emission from highly aligned carbon nanotube films. *Journal of Applied Physics*, **2021**, 129, 125103	2.5	6
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29	Complex photonic band diagrams for finite-size photonic crystals with arbitrary defects. *Journal of Applied Physics*, **2007**, 101, 053101	2.5	4
28	Plexcitonic strong coupling: unique features, applications, and challenges. *Journal Physics D: Applied Physics*, **2022**, 55, 203002	3	4
27	Particle simulation of plasmons. *Nanophotonics*, **2020**, 9, 3303-3313	6.3	4
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21	Transition from ultrafast laser photo-electron emission to space-charge-limited current in a 1D gap. *Journal Physics D: Applied Physics*, **2014**, 47, 125502	3	3

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14	Engineering the Nonlinearity and Dispersion of Graphene Hybrid Plasmonic Waveguides **2015**,		2
13	Super-Andreev reflection and longitudinal shift of pseudospin-1 fermions. *Physical Review B*, **2020**, 101,	3.3	2
12	Low temperature refrigeration by using thermal-field electron emission in a coaxial cylindrical diode. *Journal of Applied Physics*, **2008**, 104, 084506	2.5	2
11	SIMULATION OF HIGH CURRENT FIELD EMISSION FROM VERTICALLY WELL-ALIGNED METALLIC CARBON NANOTUBES. *International Journal of Nanoscience*, **2004**, 03, 677-684	0.6	2
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9	Maximal charge injection of a uniform separated electron pulse train in a drift space. *Physical Review Special Topics: Accelerators and Beams*, **2015**, 18,		2
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5	Deep learning-based design of broadband GHz complex and random metasurfaces. *APL Photonics*, **2021**, 6, 106101	5.2	1
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