Huili Grace Xing

List of Publications by Citations

299 papers	12,283 citations	57 h-index	103 g-index
336 ext. papers	14,253 ext. citations	4.3 avg, IF	6.39 L-index

#	Paper	IF	Citations
299	Broadband graphene terahertz modulators enabled by intraband transitions. *Nature Communications*, **2012**, 3, 780	17.4	715
298	Exciton dynamics in suspended monolayer and few-layer MoS□2D crystals. *ACS Nano*, **2013**, 7, 1072-80	16.7	581
297	Polarization-induced hole doping in wide-band-gap uniaxial semiconductor heterostructures. *Science*, **2010**, 327, 60-4	33.3	534
296	Thermal conductivity of monolayer molybdenum disulfide obtained from temperature-dependent Raman spectroscopy. *ACS Nano*, **2014**, 8, 986-93	16.7	526
295	Carrier statistics and quantum capacitance of graphene sheets and ribbons. *Applied Physics Letters*, **2007**, 91, 092109	3.4	460
294	Heavy doping effects in Mg-doped GaN. *Journal of Applied Physics*, **2000**, 87, 1832-1835	2.5	296
293	InAlN/AlN/GaN HEMTs With Regrown Ohmic Contacts and f_{T} of 370 GHz. *IEEE Electron Device Letters*, **2012**, 33, 988-990	4.4	252
292	High breakdown voltage AlGaN-GaN HEMTs achieved by multiple field plates. *IEEE Electron Device Letters*, **2004**, 25, 161-163	4.4	250
291	High-voltage field effect transistors with wide-bandgap □Ga2O3 nanomembranes. *Applied Physics Letters*, **2014**, 104, 203111	3.4	242
290	Esaki Diodes in van der Waals Heterojunctions with Broken-Gap Energy Band Alignment. *Nano Letters*, **2015**, 15, 5791-8	11.5	237
289	Intrinsic electron mobility limits in □Ga2O3. *Applied Physics Letters*, **2016**, 109, 212101	3.4	223
288	Transistors with chemically synthesized layered semiconductor WS2 exhibiting 105 room temperature modulation and ambipolar behavior. *Applied Physics Letters*, **2012**, 101, 013107	3.4	212
287	Extraordinary control of terahertz beam reflectance in graphene electro-absorption modulators. *Nano Letters*, **2012**, 12, 4518-22	11.5	187
286	Enhancement-Mode Ga2O3 Vertical Transistors With Breakdown Voltage >1 kV. *IEEE Electron Device Letters*, **2018**, 39, 869-872	4.4	166
285	Graphene Nanoribbon Tunnel Transistors. *IEEE Electron Device Letters*, **2008**, 29, 1344-1346	4.4	163
284	Unique prospects for graphene-based terahertz modulators. *Applied Physics Letters*, **2011**, 99, 113104	3.4	149
283	Realization of wide electron slabs by polarization bulk doping in graded III□V nitride semiconductor alloys. *Applied Physics Letters*, **2002**, 81, 4395-4397	3.4	136

282	Memory Effect and Redistribution of Mg into Sequentially Regrown GaN Layer by Metalorganic Chemical Vapor Deposition. *Japanese Journal of Applied Physics*, **2003**, 42, 50-53	1.4	135
281	Determination of graphene work function and graphene-insulator-semiconductor band alignment by internal photoemission spectroscopy. *Applied Physics Letters*, **2012**, 101, 022105	3.4	134
280	Presence and origin of interface charges at atomic-layer deposited Al2O3/III-nitride heterojunctions. *Applied Physics Letters*, **2011**, 99, 193504	3.4	132
279	. *IEEE Electron Device Letters*, **2015**, 36, 375-377	4.4	126
278	1.7-kV and 0.55- $text{m}Omega cdot text {cm}^{2}$ GaN p-n Diodes on Bulk GaN Substrates With Avalanche Capability. *IEEE Electron Device Letters*, **2016**, 37, 161-164	4.4	125
277	AlN/GaN Insulated-Gate HEMTs With 2.3 A/mm Output Current and 480 mS/mm Transconductance. *IEEE Electron Device Letters*, **2008**, 29, 661-664	4.4	122
276	Near unity ideality factor and Shockley-Read-Hall lifetime in GaN-on-GaN p-n diodes with avalanche breakdown. *Applied Physics Letters*, **2015**, 107, 243501	3.4	117
275	AlGaSb/InAs Tunnel Field-Effect Transistor With On-Current of 78 $muhbox{A}/muhbox{m}$ at 0.5 V. *IEEE Electron Device Letters*, **2012**, 33, 363-365	4.4	112
274	Gate-Recessed Enhancement-Mode InAlN/AlN/GaN HEMTs With 1.9-A/mm Drain Current Density and 800-mS/mm Transconductance. *IEEE Electron Device Letters*, **2010**, 31, 1383-1385	4.4	111
273	Polarization-induced Zener tunnel junctions in wide-band-gap heterostructures. *Physical Review Letters*, **2009**, 103, 026801	7.4	107
272	Comprehensive structural and optical characterization of MBE grown MoSe 2 on graphite, CaF 2 and graphene. *2D Materials*, **2015**, 2, 024007	5.9	104
271	Field-Plated Ga2O3 Trench Schottky Barrier Diodes With a BV2/ $R_{text{on,sp}}$ of up to 0.95 GW/cm2. *IEEE Electron Device Letters*, **2020**, 41, 107-110	4.4	97
270	Breakdown mechanism in 1 kA/cm2 and 960 V E-mode □Ga2O3 vertical transistors. *Applied Physics Letters*, **2018**, 113, 122103	3.4	91
269	. *IEEE Electron Device Letters*, **2012**, 33, 525-527	4.4	89
268	. *Proceedings of the IEEE*, **2013**, 101, 1705-1716	14.3	88
267	Polarization-sensitive nanowire photodetectors based on solution-synthesized CdSe quantum-wire solids. *Nano Letters*, **2007**, 7, 2999-3006	11.5	88
266	Two-Dimensional Heterojunction Interlayer Tunneling Field Effect Transistors (Thin-TFETs). *IEEE Journal of the Electron Devices Society*, **2015**, 3, 200-207	2.3	86
265	Efficient terahertz electro-absorption modulation employing graphene plasmonic structures. *Applied Physics Letters*, **2012**, 101, 261115	3.4	86

264	MBE-grown 232–270 nm deep-UV LEDs using monolayer thin binary GaN/AlN quantum heterostructures. *Applied Physics Letters*, **2017**, 110, 041108	3.4	85
263	Single particle transport in two-dimensional heterojunction interlayer tunneling field effect transistor. *Journal of Applied Physics*, **2014**, 115, 074508	2.5	85
262	Terahertz imaging employing graphene modulator arrays. *Optics Express*, **2013**, 21, 2324-30	3.3	85
261	Performance of AlGaSb/InAs TFETs With Gate Electric Field and Tunneling Direction Aligned. *IEEE Electron Device Letters*, **2012**, 33, 655-657	4.4	84
260	GaN/NbN epitaxial semiconductor/superconductor heterostructures. *Nature*, **2018**, 555, 183-189	50.4	83
259	A new class of electrically tunable metamaterial terahertz modulators. *Optics Express*, **2012**, 20, 28664-71	3.3	81
258	Studies of intrinsic hot phonon dynamics in suspended graphene by transient absorption microscopy. *Nano Letters*, **2011**, 11, 3184-9	11.5	79
257	Effect of Optical Phonon Scattering on the Performance of GaN Transistors. *IEEE Electron Device Letters*, **2012**, 33, 709-711	4.4	76
256	Zener tunneling in semiconducting nanotube and graphene nanoribbon p–n junctions. *Applied Physics Letters*, **2008**, 93, 112106	3.4	76
255	AlGaN/GaN polarization-doped field-effect transistor for microwave power applications. *Applied Physics Letters*, **2004**, 84, 1591-1593	3.4	74
254	Gate-recessed integrated E/D GaN HEMT technology with fT/fmax >300 GHz. *IEEE Electron Device Letters*, **2013**, 34, 741-743	4.4	70
253	Tunnel-injection quantum dot deep-ultraviolet light-emitting diodes with polarization-induced doping in III-nitride heterostructures. *Applied Physics Letters*, **2014**, 104, 021105	3.4	68
252	Polarization-engineering in group III-nitride heterostructures: New opportunities for device design. *Physica Status Solidi (A) Applications and Materials Science*, **2011**, 208, 1511-1516	1.6	66
251	Controllable growth of layered selenide and telluride heterostructures and superlattices using molecular beam epitaxy. *Journal of Materials Research*, **2016**, 31, 900-910	2.5	65
250	Graphene nanoribbon field-effect transistors on wafer-scale epitaxial graphene on SiC substrates a. *APL Materials*, **2015**, 3, 011101	5.7	63
249	Scanning Tunneling Microscopy and Spectroscopy of Air Exposure Effects on Molecular Beam Epitaxy Grown WSe2 Monolayers and Bilayers. *ACS Nano*, **2016**, 10, 4258-67	16.7	62
248	1230 V β-Ga2O3 trench Schottky barrier diodes with an ultra-low leakage current of . *Applied Physics Letters*, **2018**, 113, 202101	3.4	61
247	. *IEEE Transactions on Electron Devices*, **2001**, 48, 543-551	2.9	59

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245	Layered transition metal dichalcogenides: promising near-lattice-matched substrates for GaN growth. *Scientific Reports*, **2016**, 6, 23708	4.9	58
244	220-GHz Quaternary Barrier InAlGaN/AlN/GaN HEMTs. *IEEE Electron Device Letters*, **2011**, 32, 1215-1217	4.4	58
243	A polarization-induced 2D hole gas in undoped gallium nitride quantum wells. *Science*, **2019**, 365, 1454-1457	3.3	57
242	Direct measurement of Dirac point energy at the graphene/oxide interface. *Nano Letters*, **2013**, 13, 131-6	11.5	56
241	Tunnel-injection GaN quantum dot ultraviolet light-emitting diodes. *Applied Physics Letters*, **2013**, 102, 041103	3.4	56
240	Ultrascaled InAlN/GaN High Electron Mobility Transistors with Cutoff Frequency of 400 GHz. *Japanese Journal of Applied Physics*, **2013**, 52, 08JN14	1.4	55
239	N-polar III-nitride quantum well light-emitting diodes with polarization-induced doping. *Applied Physics Letters*, **2011**, 99, 171104	3.4	55
238	1.1-kV Vertical GaN p-n Diodes With p-GaN Regrown by Molecular Beam Epitaxy. *IEEE Electron Device Letters*, **2017**, 38, 1071-1074	4.4	50
237	Polarization-Induced GaN-on-Insulator E/D Mode p-Channel Heterostructure FETs. *IEEE Electron Device Letters*, **2013**, 34, 852-854	4.4	49
236	Atomic Layer Deposition of Al2O3 on WSe2 Functionalized by Titanyl Phthalocyanine. *ACS Nano*, **2016**, 10, 6888-96	16.7	48
235	Polarization effects on gate leakage in InAlN/AlN/GaN high-electron-mobility transistors. *Applied Physics Letters*, **2012**, 101, 253519	3.4	47
234	High Breakdown Voltage in RF AlN/GaN/AlN Quantum Well HEMTs. *IEEE Electron Device Letters*, **2019**, 40, 1293-1296	4.4	46
233	Transport properties of graphene nanoribbon transistors on chemical-vapor-deposition grown wafer-scale graphene. *Applied Physics Letters*, **2012**, 100, 203107	3.4	46
232	Green luminescence of InGaN nanowires grown on silicon substrates by molecular beam epitaxy. *Journal of Applied Physics*, **2011**, 109, 084336	2.5	46
231	Gate-Recessed E-mode p-Channel HFET With High On-Current Based on GaN/AlN 2D Hole Gas. *IEEE Electron Device Letters*, **2018**, 39, 1848-1851	4.4	46
230	Exceptional Terahertz Wave Modulation in Graphene Enhanced by Frequency Selective Surfaces. *ACS Photonics*, **2016**, 3, 315-323	6.3	45
229	High breakdown single-crystal GaN p-n diodes by molecular beam epitaxy. *Applied Physics Letters*, **2015**, 107, 232101	3.4	44

228	The new nitrides: layered, ferroelectric, magnetic, metallic and superconducting nitrides to boost the GaN photonics and electronics eco-system. *Japanese Journal of Applied Physics*, **2019**, 58, SC0801	1.4	43
227	Near-ideal reverse leakage current and practical maximum electric field in Ga2O3 Schottky barrier diodes. *Applied Physics Letters*, **2020**, 116, 192101	3.4	42
226	234 nm and 246 nm AlN-Delta-GaN quantum well deep ultraviolet light-emitting diodes. *Applied Physics Letters*, **2018**, 112, 011101	3.4	42
225	Deep-UV emission at 219 nm from ultrathin MBE GaN/AlN quantum heterostructures. *Applied Physics Letters*, **2017**, 111, 091104	3.4	42
224	Quaternary Barrier InAlGaN HEMTs With f_{T}/f_{max} of 230/300 GHz. *IEEE Electron Device Letters*, **2013**, 34, 378-380	4.4	42
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222	Quantum transport in graphene nanoribbons patterned by metal masks. *Applied Physics Letters*, **2010**, 96, 103109	3.4	41
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220	Carrier transport and confinement in polarization-induced three-dimensional electron slabs: Importance of alloy scattering in AlGaN. *Applied Physics Letters*, **2006**, 88, 042109	3.4	38
219	Prospects for Wide Bandgap and Ultrawide Bandgap CMOS Devices. *IEEE Transactions on Electron Devices*, **2020**, 67, 4010-4020	2.9	38
218	Physics and polarization characteristics of 298 nm AlN-delta-GaN quantum well ultraviolet light-emitting diodes. *Applied Physics Letters*, **2017**, 110, 071103	3.4	37
217	Fiber Reinforced Layered Dielectric Nanocomposite. *Advanced Functional Materials*, **2019**, 29, 1900056	15.6	36
216	Coded-Aperture Imaging Using Photo-Induced Reconfigurable Aperture Arrays for Mapping Terahertz Beams. *IEEE Transactions on Terahertz Science and Technology*, **2014**, 4, 321-327	3.4	36
215	Polarization-engineered removal of buffer leakage for GaN transistors. *Applied Physics Letters*, **2010**, 96, 042102	3.4	36
214	Very low sheet resistance and Shubnikov-de-Haas oscillations in two-dimensional electron gases at ultrathin binary AlN-GaN heterojunctions. *Applied Physics Letters*, **2008**, 92, 152112	3.4	36
213	Two-dimensional electron gases in strained quantum wells for AlN/GaN/AlN double heterostructure field-effect transistors on AlN. *Applied Physics Letters*, **2014**, 104, 193506	3.4	35
212	Crystal orientation dictated epitaxy of ultrawide-bandgap 5.4- to 8.6-eV (AlGa)O on m-plane sapphire. *Science Advances*, **2021**, 7,	14.3	35
211	Inductively-coupled-plasma reactive ion etching of single-crystal Ga2O3. *Japanese Journal of Applied Physics*, **2017**, 56, 030304	1.4	34

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209	New Tunneling Features in Polar III-Nitride Resonant Tunneling Diodes. *Physical Review X*, **2017**, 7,	9.1	34
208	Ultrathin Body GaN-on-Insulator Quantum Well FETs With Regrown Ohmic Contacts. *IEEE Electron Device Letters*, **2012**, 33, 661-663	4.4	34
207	Threshold Voltage Control in $hbox{Al}_{0.72} hbox{Ga}_{0.28}hbox{N/AlN/GaN}$ HEMTs by Work-Function Engineering. *IEEE Electron Device Letters*, **2010**, 31, 954-956	4.4	34
206	Very high voltage operation (>330 V) with high current gain of AlGaN/GaN HBTs. *IEEE Electron Device Letters*, **2003**, 24, 141-143	4.4	34
205	Comparative study of chemically synthesized and exfoliated multilayer MoS2 field-effect transistors. *Applied Physics Letters*, **2013**, 102, 043116	3.4	33
204	Electron mobility in graded AlGaN alloys. *Applied Physics Letters*, **2006**, 88, 042103	3.4	33
203	Development of GaN Vertical Trench-MOSFET With MBE Regrown Channel. *IEEE Transactions on Electron Devices*, **2018**, 65, 2558-2564	2.9	32
202	MBE growth of few-layer 2H-MoTe2 on 3D substrates. *Journal of Crystal Growth*, **2018**, 482, 61-69	1.6	30
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191	Activation of buried p-GaN in MOCVD-regrown vertical structures. *Applied Physics Letters*, **2018**, 113, 062105	3.4	25
190	Power Amplification at THz via Plasma Wave Excitation in RTD-Gated HEMTs. *IEEE Transactions on Terahertz Science and Technology*, **2013**, 3, 200-206	3.4	25
189	Room temperature weak ferromagnetism in Sn1□MnxSe2 2D films grown by molecular beam epitaxy. *APL Materials*, **2016**, 4, 032601	5.7	25
188	Sub-230 nm deep-UV emission from GaN quantum disks in AlN grown by a modified Stranski□Krastanov mode. *Japanese Journal of Applied Physics*, **2016**, 55, 05FF06	1.4	23
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186	2.44 kV Ga2O3 vertical trench Schottky barrier diodes with very low reverse leakage current **2018**,		23
185	Polarization-mediated remote surface roughness scattering in ultrathin barrier GaN high-electron mobility transistors. *Applied Physics Letters*, **2010**, 97, 222116	3.4	22
184	In-situ X-ray photoelectron spectroscopy of trimethyl aluminum and water half-cycle treatments on HF-treated and O3-oxidized GaN substrates. *Physica Status Solidi - Rapid Research Letters*, **2012**, 6, 22-24	2.5	20
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182	1.6 kV Vertical Ga2O3 FinFETs With Source-Connected Field Plates and Normally-off Operation **2019**,		19
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172	Molecular beam homoepitaxy on bulk AlN enabled by aluminum-assisted surface cleaning. *Applied Physics Letters*, **2020**, 116, 172106	3.4	17
171	Surface control and MBE growth diagram for homoepitaxy on single-crystal AlN substrates. *Applied Physics Letters*, **2020**, 116, 262102	3.4	17
170	Atomic Structure of Thin MoSe2 Films Grown by Molecular Beam Epitaxy. *Microscopy and Microanalysis*, **2014**, 20, 164-165	0.5	17
169	Selective Chemical Response of Transition Metal Dichalcogenides and Metal Dichalcogenides in Ambient Conditions. *ACS Applied Materials & Interfaces*, **2017**, 9, 29255-29264	9.5	17
168	Next generation electronics on the ultrawide-bandgap aluminum nitride platform. *Semiconductor Science and Technology*, **2021**, 36, 044001	1.8	17
167	GaN/AlN Schottky-gate p-channel HFETs with InGaN contacts and 100 mA/mm on-current **2019**,		17
166	Fully transparent field-effect transistor with high drain current and on-off ratio. *APL Materials*, **2020**, 8, 011110	5.7	16
165	**2015**,		16
164	Scalability of Atomic-Thin-Body (ATB) Transistors Based on Graphene Nanoribbons. *IEEE Electron Device Letters*, **2010**, 31, 531-533	4.4	16
163	Fabrication of top-gated epitaxial graphene nanoribbon FETs using hydrogen-silsesquioxane. *Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics*, **2012**, 30, 03D104	1.3	16
162	First RF Power Operation of AlN/GaN/AlN HEMTs With >3 A/mm and 3 W/mm at 10 GHz. *IEEE Journal of the Electron Devices Society*, **2021**, 9, 121-124	2.3	16
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160	A 570-630 GHz FREQUENCY DOMAIN TERAHERTZ SPECTROSCOPY SYSTEM BASED ON A BROADBAND QUASI-OPTICAL ZERO BIAS SCHOTTKY DIODE DETECTOR. *International Journal of High Speed Electronics and Systems*, **2011**, 20, 629-638	0.5	15
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158	Structural and piezoelectric properties of ultra-thin ScxAl1−xN films grown on GaN by molecular beam epitaxy. *Applied Physics Letters*, **2020**, 117, 112101	3.4	15
157	Wurtzite phonons and the mobility of a GaN/AlN 2D hole gas. *Applied Physics Letters*, **2019**, 114, 253501	3.4	14

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151	Thermionic emission or tunneling? The universal transition electric field for ideal Schottky reverse leakage current: A case study in □Ga2O3. *Applied Physics Letters*, **2020**, 117, 222104	3.4	14
150	Measurement of ultrafast dynamics of photoexcited carriers in □Ga2O3 by two-color optical pump-probe spectroscopy. *Applied Physics Letters*, **2018**, 113, 252102	3.4	14
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148	Formation of ohmic contacts to ultra-thin channel AlN/GaN HEMTs. *Physica Status Solidi C: Current Topics in Solid State Physics*, **2008**, 5, 2030-2032		13
147	Ultrashort hole capture time in Mg-doped GaN thin films. *Applied Physics Letters*, **2002**, 81, 3975-3977	3.4	13
146	Two-dimensional heterojunction interlayer tunnel FET (Thin-TFET): From theory to applications **2016**,		13
145	Single-crystal N-polar GaN p-n diodes by plasma-assisted molecular beam epitaxy. *Applied Physics Letters*, **2017**, 110, 253506	3.4	12
144	Realization of GaN PolarMOS using selective-area regrowth by MBE and its breakdown mechanisms. *Japanese Journal of Applied Physics*, **2019**, 58, SCCD15	1.4	12
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142	Top-down AlN/GaN enhancement- & depletion-mode nanoribbon HEMTs **2009**,		12
141	Enhanced injection efficiency and light output in bottom tunnel-junction light-emitting diodes. *Optics Express*, **2020**, 28, 4489-4500	3.3	12
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137	Anisotropic dielectric functions, band-to-band transitions, and critical points in □Ga2O3. *Applied Physics Letters*, **2021**, 118, 062103	3.4	12
136	Steep Sub-Boltzmann Switching in AlGaN/GaN Phase-FETs With ALD VO2. *IEEE Transactions on Electron Devices*, **2018**, 65, 945-949	2.9	11
135	Molecular Beam Epitaxy of Transition Metal Nitrides for Superconducting Device Applications. *Physica Status Solidi (A) Applications and Materials Science*, **2020**, 217, 1900675	1.6	11
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133	Dual optical marker Raman characterization of strained GaN-channels on AlN using AlN/GaN/AlN quantum wells and 15N isotopes. *Applied Physics Letters*, **2015**, 106, 041906	3.4	10
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126	Wafer-fused AlGaAs/GaAs/GaN heterojunction bipolar transistor. *Applied Physics Letters*, **2003**, 82, 820-822	3.4	9
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