David Arto Laleyan

List of Publications by Year in Descending Order

45 papers	1,178 citations	18 h-index	33 g-index
50 ext. papers	1,455 ext. citations	6.8 avg, IF	4.86 L-index

#	Paper	IF	Citations
45	Quaternary alloy ScAlGaN: A promising strategy to improve the quality of ScAlN. *Applied Physics Letters*, **2022**, 120, 012104	3.4	5
44	High-Order Sezawa Mode Alscn/Gan/Sapphire Surface Acoustic Wave Resonators **2022**,		2
43	Scalable Synthesis of Monolayer Hexagonal Boron Nitride on Graphene with Giant Bandgap Renormalization.. *Advanced Materials*, **2022**, e2201387	24	5
42	Demonstration of green and UV wavelength high Q aluminum nitride on sapphire microring resonators integrated with microheaters. *Applied Physics Letters*, **2021**, 118, 211103	3.4	1
41	Fully epitaxial ferroelectric ScAlN grown by molecular beam epitaxy. *Applied Physics Letters*, **2021**, 118, 223504	3.4	23
40	Oxygen defect dominated photoluminescence emission of ScxAl1−xN grown by molecular beam epitaxy. *Applied Physics Letters*, **2021**, 118, 032102	3.4	14
39	N-polar ScAlN and HEMTs grown by molecular beam epitaxy. *Applied Physics Letters*, **2021**, 119, 082101	3.4	12
38	Fully epitaxial ferroelectric ScGaN grown on GaN by molecular beam epitaxy. *Applied Physics Letters* , **2021**, 119, 111902	3.4	8
37	Strain-free ultrathin AlN epilayers grown directly on sapphire by high-temperature molecular beam epitaxy. *Applied Physics Letters*, **2020**, 116, 152102	3.4	6
36	Hyperspectral absorption of semiconductor monolayer crystals. *Applied Physics Letters*, **2020**, 116, 181103	3.4	2
35	Emerging Applications of III-Nitride Nanocrystals. *Physica Status Solidi (A) Applications and Materials Science*, **2020**, 217, 1900885	1.6	6
34	Deep ultraviolet monolayer GaN/AlN disk-in-nanowire array photodiode on silicon. *Applied Physics Letters*, **2020**, 116, 061104	3.4	9
33	Graphene-assisted molecular beam epitaxy of AlN for AlGaN deep-ultraviolet light-emitting diodes. *Applied Physics Letters*, **2020**, 116, 171905	3.4	16
32	Monolayer GaN excitonic deep ultraviolet light emitting diodes. *Applied Physics Letters*, **2020**, 116, 013101	3.4	17
31	Micrometer scale InGaN green light emitting diodes with ultra-stable operation. *Applied Physics Letters*, **2020**, 117, 011104	3.4	11
30	Controlling Defect Formation of Nanoscale AlN: Toward Efficient Current Conduction of Ultrawide-Bandgap Semiconductors. *Advanced Electronic Materials*, **2020**, 6, 2000337	6.4	7
29	Molecular beam epitaxy and characterization of wurtzite ScxAl1−xN. *Applied Physics Letters*, **2020**, 116, 151903	3.4	24

28	Deep Ultraviolet Luminescence Due to Extreme Confinement in Monolayer GaN/Al(Ga)N Nanowire and Planar Heterostructures. *Nano Letters*, **2019**, 19, 7852-7858	11.5	20
27	A quadruple-band metal nitride nanowire artificial photosynthesis system for high efficiency photocatalytic overall solar water splitting. *Materials Horizons*, **2019**, 6, 1454-1462	14.4	22
26	A GaN:Sn nanoarchitecture integrated on a silicon platform for converting CO2 to HCOOH by photoelectrocatalysis. *Energy and Environmental Science*, **2019**, 12, 2842-2848	35.4	38
25	Enhanced doping efficiency of ultrawide band gap semiconductors by metal-semiconductor junction assisted epitaxy. *Physical Review Materials*, **2019**, 3,	3.2	19
24	Ultrahigh Q microring resonators using a single-crystal aluminum-nitride-on-sapphire platform. *Optics Letters*, **2019**, 44, 5679-5682	3	13
23	AlGaN nanocrystals: building blocks for efficient ultraviolet optoelectronics. *Photonics Research*, **2019**, 7, B12	6	9
22	Optical and interface characteristics of Al0.56Ga0.44N/Al0.62Ga0.38N multiquantum wells with ~280 nm emission grown by plasma-assisted molecular beam epitaxy. *Journal of Crystal Growth*, **2019**, 508, 66-71	1.6	5
21	Molecular beam epitaxy and characterization of Al0.6Ga0.4N epilayers. *Journal of Crystal Growth*, **2019**, 507, 87-92	1.6	6
20	Molecular beam epitaxy and characterization of AlGaN nanowire ultraviolet light emitting diodes on Al coated Si (0 0 1) substrate. *Journal of Crystal Growth*, **2019**, 507, 65-69	1.6	20
19	A photochemical diode artificial photosynthesis system for unassisted high efficiency overall pure water splitting. *Nature Communications*, **2018**, 9, 1707	17.4	92
18	Effect of growth temperature on the structural and optical properties of few-layer hexagonal boron nitride by molecular beam epitaxy. *Optics Express*, **2018**, 26, 23031-23039	3.3	14
17	Wafer-scale synthesis of monolayer WSe2: A multi-functional photocatalyst for efficient overall pure water splitting. *Nano Energy*, **2018**, 51, 54-60	17.1	30
16	Gallium nitride nanowire as a linker of molybdenum sulfides and silicon for photoelectrocatalytic water splitting. *Nature Communications*, **2018**, 9, 3856	17.4	54
15	Charge carrier transport properties of Mg-doped Al0.6Ga0.4N grown by molecular beam epitaxy. *Semiconductor Science and Technology*, **2018**, 33, 085005	1.8	12
14	Improving the Efficiency of Transverse Magnetic Polarized Emission from AlGaN Based LEDs by Using Nanowire Photonic Crystal. *IEEE Photonics Journal*, **2018**, 10, 1-11	1.8	17
13	On the mechanism of highly efficient p-type conduction of Mg-doped ultra-wide-bandgap AlN nanostructures. *Applied Physics Letters*, **2017**, 110, 032102	3.4	59
12	AlN/h-BN Heterostructures for Mg Dopant-Free Deep Ultraviolet Photonics. *Nano Letters*, **2017**, 17, 3738-3743	11.5	59
11	Molecular beam epitaxial growth and characterization of AlN nanowall deep UV light emitting diodes. *Applied Physics Letters*, **2017**, 111, 101103	3.4	10

10	Selective area epitaxy of AlGaN nanowire arrays across nearly the entire compositional range for deep ultraviolet photonics. *Optics Express*, **2017**, 25, 30494-30502	3.3	35
9	Atomic-Scale Origin of Long-Term Stability and High Performance of p-GaN Nanowire Arrays for Photocatalytic Overall Pure Water Splitting. *Advanced Materials*, **2016**, 28, 8388-8397	24	83
8	Enhancing the light extraction efficiency of AlGaN deep ultraviolet light emitting diodes by using nanowire structures. *Applied Physics Letters*, **2016**, 108, 051102	3.4	91
7	Optical and electrical properties of Mg-doped AlN nanowires grown by molecular beam epitaxy. *Applied Physics Letters*, **2015**, 106, 213105	3.4	43
6	Impact of nanowire geometry on the carrier transport in GaN/InGaN axial nanowire light-emitting diodes. *Journal of Engineering*, **2015**, 2015, 299-301	0.7	1
5	III-Nitride nanowire optoelectronics. *Progress in Quantum Electronics*, **2015**, 44, 14-68	9.1	152
4	High-Performance Quantum Dot Lasers and Integrated Optoelectronics on Si. *Proceedings of the IEEE*, **2009**, 97, 1239-1249	14.3	80
3	GaN-Based Deep-Nano Structures: Break the Efficiency Bottleneck of Conventional Nanoscale Optoelectronics. *Advanced Optical Materials*,2102263	8.1	
2	Nanoscale and quantum engineering of III-nitride heterostructures for high efficiency UV-C and far UV-C optoelectronics. *Japanese Journal of Applied Physics*,	1.4	2
1	An Epitaxial Ferroelectric ScAlN/GaN Heterostructure Memory. *Advanced Electronic Materials*,2200005	6.4	10