

# Biplab Sarkar

## List of Publications by Year in descending order

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Version: 2024-02-01

42  
papers

988  
citations

471061

17  
h-index

433756

31  
g-index

42  
all docs

42  
docs citations

42  
times ranked

1017  
citing authors

#	ARTICLE	IF	CITATIONS
1	The 2020 UV emitter roadmap. Journal Physics D: Applied Physics, 2020, 53, 503001.	1.3	289
2	Doping and compensation in Al-rich AlGa <sub>n</sub> grown on single crystal AlN and sapphire by MOCVD. Applied Physics Letters, 2018, 112, .	1.5	107
3	Understanding the gradual reset in Pt/Al <sub>2</sub> O <sub>3</sub> /Ni RRAM for synaptic applications. Semiconductor Science and Technology, 2015, 30, 105014.	1.0	66
4	6 kW/cm <sup>2</sup> UVC laser threshold in optically pumped lasers achieved by controlling point defect formation. Applied Physics Express, 2018, 11, 082101.	1.1	46
5	Thermal conductivity of single-crystalline AlN. Applied Physics Express, 2018, 11, 071001.	1.1	42
6	Defect-free Ni/GaN Schottky barrier behavior with high temperature stability. Applied Physics Letters, 2017, 110, .	1.5	38
7	The role of chemical potential in compensation control in Si:AlGa <sub>n</sub> . Journal of Applied Physics, 2020, 127, .	1.1	34
8	The influence of point defects on the thermal conductivity of AlN crystals. Journal of Applied Physics, 2018, 123, 185107.	1.1	26
9	Thermal conductivity of GaN single crystals: Influence of impurities incorporated in different growth processes. Journal of Applied Physics, 2018, 124, .	1.1	25
10	High <i>n</i> -type conductivity and carrier concentration in Si-implanted homoepitaxial AlN. Applied Physics Letters, 2021, 118, .	1.5	25
11	Status of the growth and fabrication of AlGa <sub>n</sub> -based UV laser diodes for near and mid-UV wavelength. Journal of Materials Research, 2021, 36, 4638-4664.	1.2	25
12	High temperature and low pressure chemical vapor deposition of silicon nitride on AlGa <sub>n</sub> : Band offsets and passivation studies. Journal of Applied Physics, 2016, 119, .	1.1	22
13	High free carrier concentration in p-GaN grown on AlN substrates. Applied Physics Letters, 2017, 111, .	1.5	22
14	N- and P- type Doping in Al-rich AlGa <sub>n</sub> and AlN. ECS Transactions, 2018, 86, 25-30.	0.3	20
15	Shallow Si donor in ion-implanted homoepitaxial AlN. Applied Physics Letters, 2020, 116, .	1.5	20
16	Temperature dependence of barrier height inhomogeneity in $\text{In}^2\text{-Ga}_2\text{O}_3$ Schottky barrier diodes. Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics, 2021, 39, .	0.6	20
17	Nonlinear analysis of vanadium- and titanium-based contacts to Al-rich n-AlGa <sub>n</sub> . Japanese Journal of Applied Physics, 2017, 56, 100302.	0.8	19
18	On Ni/Au Alloyed Contacts to Mg-Doped GaN. Journal of Electronic Materials, 2018, 47, 305-311.	1.0	17

#	ARTICLE	IF	CITATIONS
19	The nature of the DX state in Ge-doped AlGa <sub>N</sub> . Applied Physics Letters, 2020, 116, .	1.5	14
20	Doping and compensation in heavily Mg doped Al-rich AlGa <sub>N</sub> films. Applied Physics Letters, 2022, 120, .	1.5	12
21	Performance improvement of ohmic contacts on Al-rich n-AlGa <sub>N</sub> grown on single crystal AlN substrate using reactive ion etching surface treatment. Applied Physics Express, 2017, 10, 071001.	1.1	11
22	Evidence of thermionic emission in forward biased $\text{Al}^{\delta}\text{-Ga}_{2}\text{O}_3$ Schottky diodes at Boltzmann doping limit. Journal of Applied Physics, 2022, 131, .	1.1	11
23	Polarity Control and Nanoscale Optical Characterization of AlGa <sub>N</sub> -Based Multiple-Quantum-Wells for Ultraviolet C Emitters. ACS Applied Nano Materials, 2020, 3, 5335-5342.	2.4	10
24	Numerical Simulation of Enhanced-Reliability Filleted-Gate AlGa <sub>N</sub> /Ga <sub>N</sub> HEMT. Journal of Electronic Materials, 2020, 49, 2018-2031.	1.0	8
25	Self-powered ultraviolet photodiode based on lateral polarity structure Ga <sub>N</sub> films. Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics, 2021, 39, .	0.6	8
26	On Using the Volatile Mem-Capacitive Effect of TiO <sub>2</sub> Resistive Random Access Memory to Mimic the Synaptic Forgetting Process. Journal of Electronic Materials, 2018, 47, 994-997.	1.0	7
27	Role of polarity in Si <sub>3</sub> N <sub>4</sub> on Al/Ga <sub>N</sub> and the pathway to stable contacts. Semiconductor Science and Technology, 2020, 35, 055007.	1.0	7
28	Plasma enhanced chemical vapor deposition of SiO <sub>2</sub> and Si <sub>3</sub> N <sub>4</sub> on AlGa <sub>N</sub> : Band offsets and interface studies as a function of Al composition. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2018, 36, 061101.	0.9	6
29	Generalized Frequency Dependent Small Signal Model for High Frequency Analysis of AlGa <sub>N</sub> /Ga <sub>N</sub> MOS-HEMTs. IEEE Journal of the Electron Devices Society, 2021, 9, 570-581.	1.2	6
30	Dual Floating Gate Unified Memory MOSFET With Simultaneous Dynamic and Non-Volatile Operation. IEEE Electron Device Letters, 2014, 35, 48-50.	2.2	4
31	(Invited) Material Considerations for the Development of III-Nitride Power Devices. ECS Transactions, 2017, 80, 29-36.	0.3	4
32	Role of Interface Induced Gap States in Polar Al <sub>x</sub> Ga <sub>1-x</sub> N ( $0 \leq x \leq 1$ ) Schottky Diodes. Journal of Electronic Materials, 2021, 50, 3731-3738.	1.0	4
33	On electrical analysis of Al-rich p-AlGa <sub>N</sub> films for III-nitride UV light emitters. Semiconductor Science and Technology, 2022, 37, 015003.	1.0	4
34	Al Rich AlGa <sub>N</sub> Based APDs on Single Crystal AlN with Solar Blindness and Room Temperature Operation. , 2019, , .		3
35	Modified Small Signal Circuit of AlGa <sub>N</sub> /Ga <sub>N</sub> MOS-HEMTs Using Rational Functions. IEEE Transactions on Electron Devices, 2021, 68, 6059-6064.	1.6	3
36	Sidelobe Suppression in Wigner Distribution Using Non-Linear Apodization. , 2009, , .		1

#	ARTICLE	IF	CITATIONS
37	Improving the Conductivity Limits in Si Doped Al Rich AlGa <sub>N</sub> . , 2018, , .		1
38	N- and P- type Doping in Al-rich AlGa <sub>N</sub> and AlN. ECS Meeting Abstracts, 2018, MA2018-02, 1283-1283.	0.0	1
39	Understanding the influence of E <sub>a</sub> and band-offset toward the conductance modulation in Al <sub>2</sub> O <sub>3</sub> and HfO <sub>2</sub> synaptic RRAM. , 2015, , .		0
40	On contacts to III-nitride deep-UV emitters. , 2018, , .		0
41	(Invited) Material Considerations for the Development of III-Nitride Power Devices. ECS Meeting Abstracts, 2017, , .	0.0	0
42	(Invited) Advances in Ion Implantation of GaN and AlN. ECS Meeting Abstracts, 2019, , .	0.0	0