

# Bivas Saha

## List of Publications by Citations

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51  
papers

1,038  
citations

18  
h-index

31  
g-index

60  
ext. papers

1,266  
ext. citations

4.1  
avg, IF

4.49  
L-index

#	Paper	IF	Citations
51	Epitaxial superlattices with titanium nitride as a plasmonic component for optical hyperbolic metamaterials. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2014</b> , 111, 7546-51	11.5	164
50	Electronic structure, phonons, and thermal properties of ScN, ZrN, and HfN: A first-principles study. <i>Journal of Applied Physics</i> , <b>2010</b> , 107, 033715	2.5	102
49	Thermoelectric properties of epitaxial ScN films deposited by reactive magnetron sputtering onto MgO(001) substrates. <i>Journal of Applied Physics</i> , <b>2013</b> , 113, 153704	2.5	71
48	Cross-plane thermal conductivity of (Ti,W)N/(Al,Sc)N metal/semiconductor superlattices. <i>Physical Review B</i> , <b>2016</b> , 93,	3.3	55
47	Rocksalt nitride metal/semiconductor superlattices: A new class of artificially structured materials. <i>Applied Physics Reviews</i> , <b>2018</b> , 5, 021101	17.3	42
46	Compensation of native donor doping in ScN: Carrier concentration control and p-type ScN. <i>Applied Physics Letters</i> , <b>2017</b> , 110, 252104	3.4	42
45	TiN/(Al,Sc)N metal/dielectric superlattices and multilayers as hyperbolic metamaterials in the visible spectral range. <i>Physical Review B</i> , <b>2014</b> , 90,	3.3	41
44	Development of epitaxial Al <sub>x</sub> Sc <sub>1-x</sub> N for artificially structured metal/semiconductor superlattice metamaterials. <i>Physica Status Solidi (B): Basic Research</i> , <b>2015</b> , 252, 251-259	1.3	40
43	Electronic structure, vibrational spectrum, and thermal properties of yttrium nitride: A first-principles study. <i>Journal of Applied Physics</i> , <b>2011</b> , 109, 073720	2.5	40
42	Dislocation-pipe diffusion in nitride superlattices observed in direct atomic resolution. <i>Scientific Reports</i> , <b>2017</b> , 7, 46092	4.9	39
41	Electronic and optical properties of ScN and (Sc,Mn)N thin films deposited by reactive DC-magnetron sputtering. <i>Journal of Applied Physics</i> , <b>2013</b> , 114, 063519	2.5	38
40	Phonon wave effects in the thermal transport of epitaxial TiN/(Al,Sc)N metal/semiconductor superlattices. <i>Journal of Applied Physics</i> , <b>2017</b> , 121, 015109	2.5	31
39	Development of semiconducting ScN. <i>Physical Review Materials</i> , <b>2019</b> , 3,	3.2	27
38	Temperature-dependent thermal and thermoelectric properties of n-type and p-type Sc <sub>1-x</sub> Mg <sub>x</sub> N. <i>Physical Review B</i> , <b>2018</b> , 97,	3.3	26
37	Thermal stability of epitaxial cubic-TiN/(Al,Sc)N metal/semiconductor superlattices. <i>Journal of Materials Science</i> , <b>2015</b> , 50, 3200-3206	4.3	22
36	Enhanced hardness in epitaxial TiAlScN alloy thin films and rocksalt TiN/(Al,Sc)N superlattices. <i>Applied Physics Letters</i> , <b>2014</b> , 105, 151904	3.4	21
35	First-principles analysis of ZrN/ScN metal/semiconductor superlattices for thermoelectric energy conversion. <i>Journal of Applied Physics</i> , <b>2011</b> , 109, 083717	2.5	19

34	Microstructural evolution and thermal stability of HfN/ScN, ZrN/ScN, and Hf <sub>0.5</sub> Zr <sub>0.5</sub> N/ScN metal/semiconductor superlattices. <i>Journal of Materials Science</i> , <b>2016</b> , 51, 8250-8258	4.3	18
33	Thermoelectric properties of HfN/ScN metal/semiconductor superlattices: a first-principles study. <i>Journal of Physics Condensed Matter</i> , <b>2012</b> , 24, 415303	1.8	18
32	Sub-50 mV NEM relay operation enabled by self-assembled molecular coating <b>2016</b> ,		18
31	Rigid-band electronic structure of scandium nitride across the n-type to p-type carrier transition regime. <i>Physical Review B</i> , <b>2019</b> , 99,	3.3	15
30	A 0.2 V Micro-Electromechanical Switch Enabled by a Phase Transition. <i>Small</i> , <b>2018</b> , 14, e1703621	11	15
29	Tailoring of surface plasmon resonances in TiN/(Al <sub>0.72</sub> Sc <sub>0.28</sub> )N multilayers by dielectric layer thickness variation. <i>Journal of Materials Science</i> , <b>2018</b> , 53, 4001-4009	4.3	15
28	Charge Transfer in the Heterostructure of CsPbBr Nanocrystals with Nitrogen-Doped Carbon Dots. <i>Journal of Physical Chemistry Letters</i> , <b>2020</b> , 11, 8002-8007	6.4	14
27	Reduced optical losses in refractory plasmonic titanium nitride thin films deposited with molecular beam epitaxy. <i>Optical Materials Express</i> , <b>2020</b> , 10, 2679	2.6	13
26	High mobility and high thermoelectric power factor in epitaxial ScN thin films deposited with plasma-assisted molecular beam epitaxy. <i>Applied Physics Letters</i> , <b>2020</b> , 116, 152103	3.4	12
25	Understanding the Rocksalt-to-Wurtzite phase transformation through microstructural analysis of (Al,Sc)N epitaxial thin films. <i>Applied Physics Letters</i> , <b>2016</b> , 109, 172102	3.4	10
24	Pressure-induced structural transition of CdxZn1-xO alloys. <i>Applied Physics Letters</i> , <b>2016</b> , 108, 152105	3.4	9
23	Void-mediated coherency-strain relaxation and impediment of cubic-to-hexagonal transformation in epitaxial metastable metal/semiconductor TiN/Al <sub>0.72</sub> Sc <sub>0.28</sub> N multilayers. <i>Physical Review Materials</i> , <b>2017</b> , 1,	3.2	8
22	Schottky barrier height of epitaxial lattice-matched TiN/Al <sub>0.72</sub> Sc <sub>0.28</sub> N metal/semiconductor superlattice interfaces for thermionic energy conversion. <i>Applied Physics Letters</i> , <b>2019</b> , 115, 251901	3.4	8
21	Effects of adatom mobility and Ehrlich-Schwoebel barrier on heteroepitaxial growth of scandium nitride (ScN) thin films. <i>Applied Physics Letters</i> , <b>2020</b> , 117, 212101	3.4	7
20	Variability Study for Low-Voltage Microelectromechanical Relay Operation. <i>IEEE Transactions on Electron Devices</i> , <b>2018</b> , 65, 1529-1534	2.9	6
19	Thermally stable epitaxial ZrN/carrier-compensated Sc <sub>0.99</sub> Mg <sub>0.01</sub> N metal/semiconductor multilayers for thermionic energy conversion. <i>Journal of Materials Science</i> , <b>2020</b> , 55, 1592-1602	4.3	6
18	Wave-Vector-Dependent Raman Scattering from Coupled Plasmon-Longitudinal Optical Phonon Modes and Fano Resonance in n-type Scandium Nitride. <i>Physica Status Solidi - Rapid Research Letters</i> , <b>2019</b> , 13, 1900196	2.5	5
17	Reducing adhesion energy of nano-electro-mechanical relay contacts by self-assembled Perfluoro (2,3-Dimethylbutan-2-ol) coating. <i>AIP Advances</i> , <b>2019</b> , 9, 055329	1.5	4

16	Clustering of oxygen point defects in transition metal nitrides. <i>Journal of Applied Physics</i> , <b>2021</b> , 129, 055305	3.5	3
15	Interfacial chemistry and electronic structure of epitaxial lattice-matched TiN/Al <sub>0.72</sub> Sc <sub>0.28</sub> N metal/semiconductor superlattices determined with soft x-ray scattering. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , <b>2020</b> , 38, 053201	2.9	2
14	High thermoelectric power factor in ambient-stable semiconducting rare-earth ErN thin films. <i>Applied Physics Letters</i> , <b>2021</b> , 118, 132103	3.4	2
13	Epitaxial Nitride Thin Film and Heterostructures: From Hard Coating to Solid State Energy Conversion <b>2019</b> ,		1
12	Reducing adhesion energy of micro-relay electrodes by ion beam synthesized oxide nanolayers. <i>APL Materials</i> , <b>2017</b> , 5, 036103	5.7	1
11	Secondary phase limited metal-insulator phase transition in chromium nitride thin films. <i>Acta Materialia</i> , <b>2022</b> , 227, 117737	8.4	1
10	Phononic bandgap and phonon anomalies in HfN and HfN/ScN metal/semiconductor superlattices measured with inelastic x-ray scattering. <i>Applied Physics Letters</i> , <b>2020</b> , 117, 111901	3.4	1
9	Anisotropic epsilon-near-pole (ENP) resonance leads to hyperbolic photonic dispersion in homologous (Bi <sub>2</sub> ) <sub>m</sub> (Bi <sub>2</sub> Se <sub>3</sub> ) <sub>n</sub> topological quantum materials. <i>Applied Physics Letters</i> , <b>2021</b> , 119, 011902	3.4	1
8	Giant enhancement of plasmonic response and epsilon-near-zero signature in refractory transition metals (Ta, W, and Mo) deposited at high-temperature. <i>Applied Physics Letters</i> , <b>2021</b> , 118, 041902	3.4	1
7	Twinned growth of ScN thin films on lattice-matched GaN substrates. <i>Materials Research Bulletin</i> , <b>2021</b> , 143, 111443	5.1	1
6	Electronic structure of rare-earth semiconducting ErN thin films determined with synchrotron radiation photoemission spectroscopy and first-principles analysis. <i>Physical Review B</i> , <b>2022</b> , 105,	3.3	1
5	Vibrational Spectrum and Thermal Conductivity of Rare-Earth Semiconducting Erbium Nitride Thin Films. <i>Physica Status Solidi - Rapid Research Letters</i> , 2200029	2.5	0
4	Detailed study of reactively sputtered ScN thin films at room temperature. <i>Materialia</i> , <b>2022</b> , 22, 101375	3.2	0
3	Influence of AlN buffer layer on molecular beam epitaxy growth of wurtzite Al <sub>1-x</sub> Sc <sub>x</sub> N thin films. <i>Bulletin of Materials Science</i> , <b>2020</b> , 43, 1	1.7	
2	Reducing high carrier concentration in rocksalt-Al <sub>x</sub> Sc <sub>1-x</sub> N with Mg acceptor doping. <i>Applied Physics Letters</i> , <b>2021</b> , 118, 202107	3.4	
1	Microstructural evolution and thermal stability of nitride-based metal/semiconductor superlattices for thermoelectric and hard-coating applications <b>2016</b> , 237-238		