

# Darshana Wickramaratne

## List of Publications by Year in descending order

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68  
papers

2,938  
citations

257357

24  
h-index

168321

53  
g-index

69  
all docs

69  
docs citations

69  
times ranked

5599  
citing authors

#	ARTICLE	IF	CITATIONS
1	Optical transitions of neutral Mg in Mg-doped $\text{In}^2\text{-Ga}_2\text{O}_3$ . APL Materials, 2022, 10, .	2.2	9
2	Photoinduced chiral charge density wave in $\text{TiSe}_2$ . Physical Review B, 2022, 105, .	1.1	18
3	Metallic vs. semiconducting properties of quasi-one-dimensional tantalum selenide van der Waals nanoribbons. Nanoscale, 2022, 14, 6133-6143.	2.8	10
4	Laser-Patterned Submicrometer $\text{Bi}_2\text{Se}_3$ Pixels with Tunable Circular Polarization at Room Temperature. ACS Applied Materials & Interfaces, 2022, 14, 9504-9514.	4.0	2
5	Nontrivial Doping Evolution of Electronic Properties in Ining Superconducting Alloys. Advanced Materials, 2022, , 2200492.	11.1	9
6	Role of carbon and hydrogen in limiting $n$ -type doping of monoclinic $\text{Al}_2\text{O}_3$ . Physical Review B, 2022, 105, .	1.1	18
7	Effect of alloying in monolayer niobium dichalcogenide superconductors. Nature Communications, 2022, 13, 2376.	5.8	5
8	Spin-Sensitive Epitaxial $\text{In}_2\text{Se}_3$ Tunnel Barrier in $\text{In}_2\text{Se}_3/\text{Bi}_2\text{Se}_3$ Topological van der Waals Heterostructure. ACS Applied Materials & Interfaces, 2022, 14, 34093-34100.	4.0	2
9	Direct-Write of Nanoscale Domains with Tunable Metamagnetic Order in FeRh Thin Films. ACS Applied Materials & Interfaces, 2021, 13, 836-847.	4.0	21
10	A first-principles understanding of point defects and impurities in GaN. Journal of Applied Physics, 2021, 129, .	1.1	55
11	Thermodynamics of boron incorporation in B GaN. Physical Review Materials, 2021, 5, .	0.9	10
12	Finite-size correction for slab supercell calculations of materials with spontaneous polarization. Npj Computational Materials, 2021, 7, .	3.5	14
13	Magnetism-driven unconventional effects in Ining superconductors: Role of proximity, tunneling, and nematicity. Physical Review B, 2021, 104, .	1.1	6
14	$\text{Li}^+$ Diffusion in Amorphous and Crystalline $\text{Al}_2\text{O}_3$ for Battery Electrode Coatings. Chemistry of Materials, 2021, 33, 7795-7804.	3.2	12
15	Nonrad: Computing nonradiative capture coefficients from first principles. Computer Physics Communications, 2021, 267, 108056.	3.0	50
16	Prospects for $n$ -type conductivity in cubic boron nitride. Applied Physics Letters, 2021, 119, .	1.5	9
17	Stacking-dependent optical properties in bilayer $\text{WSe}_2$ . Nanoscale, 2021, 14, 147-156.	2.8	16
18	Deep-Level Defects and Impurities in InGaN Alloys. Physica Status Solidi (B): Basic Research, 2020, 257, 1900534.	0.7	13

#	ARTICLE	IF	CITATIONS
19	Ising Superconductivity and Magnetism in $\text{NbSe}_2$ . Physical Review X, 2020, 10, .	2.8	36
20	Band alignments and polarization properties of the Zn-IV-nitrides. Journal of Materials Chemistry C, 2020, 8, 7890-7898.	2.7	19
21	Prospects for $n$ -type doping of $(\text{Al}_x\text{Ga}_{1-x})_2\text{O}_3$ alloys. Applied Physics Letters, 2020, 116, .	1.5	44
22	Optimizing $n$ -type doping of $\text{ZnGeN}_2$ and $\text{ZnSiN}_2$ . Physical Review B, 2019, 100, 040401.	1.1	8
23	First-principles study of bandgap bowing in B GaN alloys. Journal of Applied Physics, 2019, 126, 095706.	1.1	18
24	Strategies for $p$ -type doping of $\text{ZnGeN}_2$ . Applied Physics Letters, 2019, 114, .	1.5	17
25	Role of defects in the metal-insulator transition in $\text{VO}_2$ and $\text{VO}_3$ . Physical Review B, 2019, 100, 040401.	1.1	32
26	Electrical and optical properties of iron in GaN, AlN, and InN. Physical Review B, 2019, 99, .	1.1	30
27	Exciton Fine Structure in Perovskite Nanocrystals. Nano Letters, 2019, 19, 4068-4077.	4.5	128
28	Design of AlGaIn-based lasers with a buried tunnel junction for sub-300 nm emission. Semiconductor Science and Technology, 2019, 34, 074002.	1.0	4
29	Charged impurity scattering in two-dimensional materials with ring-shaped valence bands: GaS, GaSe, InS, and InSe. Physical Review B, 2019, 99, .	1.1	17
30	Impact of biaxial and uniaxial strain on $\text{VO}_2$ and $\text{VO}_3$ . Physical Review B, 2019, 100, .	1.1	8
31	Comment on "Comparative study of $ab$ initio nonradiative recombination rate calculations under different formalisms". Physical Review B, 2018, 97, .	1.1	11
32	Defect identification based on first-principles calculations for deep level transient spectroscopy. Applied Physics Letters, 2018, 113, .	1.5	51
33	Monolayer to Bulk Properties of Hexagonal Boron Nitride. Journal of Physical Chemistry C, 2018, 122, 25524-25529.	1.5	134
34	Publisher's Note: Band bowing and the direct-to-indirect crossover in random BAlN alloys [Phys. Rev. Materials 1, 065001 (2017)]. Physical Review Materials, 2018, 2, .	0.9	0
35	Calcium as a nonradiative recombination center in InGaIn. Applied Physics Express, 2017, 10, 021001.	1.1	19
36	Interlayer transport through a graphene/rotated boron nitride/graphene heterostructure. Physical Review B, 2017, 95, .	1.1	12

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37	Diffusion of tellurium at nickel grain boundaries: a first-principles study. RSC Advances, 2017, 7, 8421-8428.	1.7	17
38	Interlayer resistance of misoriented MoS <sub>2</sub> . Physical Chemistry Chemical Physics, 2017, 19, 10406-10412.	1.3	12
39	Hybrid functional study of native point defects and impurities in ZnGeN <sub>2</sub> . Journal of Applied Physics, 2017, 122, .	1.1	22
40	Exciton condensate in bilayer transition metal dichalcogenides: Strong coupling regime. Physical Review B, 2017, 96, .	1.1	43
41	Band bowing and the direct-to-indirect crossover in random BAIN alloys. Physical Review Materials, 2017, 1, .	0.9	25
42	Phase Engineering of 2D Tin Sulfides. Small, 2016, 12, 2998-3004.	5.2	51
43	Iron as a source of efficient Shockley-Read-Hall recombination in GaN. Applied Physics Letters, 2016, 109, .	1.5	64
44	A first-principles study on the defective properties of MAX phase Cr <sub>2</sub> AlC: the magnetic ordering and strong correlation effect. RSC Advances, 2016, 6, 84262-84268.	1.7	16
45	Two-Dimensional Layered Semiconductor Tungsten Disulfide and Molybdenum-Tungsten Disulfide: Synthesis, Materials Properties and Electronic Structure. Journal of Nanoscience and Nanotechnology, 2016, 16, 8419-8423.	0.9	2
46	Fundamentals of lateral and vertical heterojunctions of atomically thin materials. Nanoscale, 2016, 8, 3870-3887.	2.8	117
47	Strong Circularly Polarized Photoluminescence from Multilayer MoS <sub>2</sub> Through Plasma Driven Direct-Gap Transition. ACS Photonics, 2016, 3, 310-314.	3.2	12
48	Bulk direct band gap MoS <sub>2</sub> by plasma induced layer decoupling. , 2015, , .		0
49	Two step growth phenomena of molybdenum disulfide-tungsten disulfide heterostructures. Chemical Communications, 2015, 51, 11213-11216.	2.2	21
50	Theoretical and experimental study of highly textured GaAs on silicon using a graphene buffer layer. Journal of Crystal Growth, 2015, 425, 268-273.	0.7	25
51	The impact of the ring shaped valence band in few-layer iii-vi materials on fet operation. , 2015, , .		0
52	Gate tunable quantum oscillations in air-stable and high mobility few-layer phosphorene heterostructures. 2D Materials, 2015, 2, 011001.	2.0	209
53	Direct Bandgap Transition in Many-Layer MoS <sub>2</sub> by Plasma-Induced Layer Decoupling. Advanced Materials, 2015, 27, 1573-1578.	11.1	102
54	Zone-Folded Phonons and the Commensurate-Incommensurate Charge-Density-Wave Transition in 1T-TaSe <sub>2</sub> Thin Films. Nano Letters, 2015, 15, 2965-2973.	4.5	94

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55	Electronic and thermoelectric properties of van der Waals materials with ring-shaped valence bands. Journal of Applied Physics, 2015, 118, .	1.1	120
56	Coulomb impurity scattering in topological insulator thin films. Applied Physics Letters, 2014, 105, 033118.	1.5	8
57	Electronic and thermoelectric properties of few-layer transition metal dichalcogenides. Journal of Chemical Physics, 2014, 140, 124710.	1.2	321
58	Tin Disulfide—An Emerging Layered Metal Dichalcogenide Semiconductor: Materials Properties and Device Characteristics. ACS Nano, 2014, 8, 10743-10755.	7.3	449
59	Synthesis, characterization, and electronic structure of few-layer MoSe <sub>2</sub> granular films. Physica Status Solidi (A) Applications and Materials Science, 2014, 211, 2671-2676.	0.8	13
60	Synthesis of Atomically Thin $\text{MoS}_2$ Triangles and Hexagons and Their Electrical Transport Properties. IEEE Nanotechnology Magazine, 2014, 13, 749-754.	1.1	21
61	Towards van der Waals Epitaxial Growth of GaAs on Si using a Graphene Buffer Layer. Advanced Functional Materials, 2014, 24, 6629-6638.	7.8	113
62	A comparative first-principles study of the electronic, mechanical, defect and acoustic properties of Ti <sub>2</sub> AlC and Ti <sub>3</sub> AlC. Journal Physics D: Applied Physics, 2014, 47, 215301.	1.3	27
63	Computational study of the mobility in ultra-thin topological insulator films. , 2013, , .		0
64	Tunneling spectroscopy of chiral states in ultra-thin topological insulators. Journal of Applied Physics, 2013, 113, 063707.	1.1	6
65	A first-principles investigation of the electronic, elastic, piezoelectric and acoustic properties of K <sub>3</sub> B <sub>6</sub> O <sub>10</sub> Cl. Computational Materials Science, 2013, 69, 81-86.	1.4	10
66	Charge Density Waves in Exfoliated Films of van der Waals Materials: Evolution of Raman Spectrum in TiSe <sub>2</sub> . Nano Letters, 2012, 12, 5941-5945.	4.5	154
67	Implementation of a Direct Sequence Spread Spectrum Baseband Transmitter Using Silicon Nanowire Technology. Journal of Nanoelectronics and Optoelectronics, 2010, 5, 1-12.	0.1	9
68	Direct-Write of Nanoscale Domains with Tunable Metamagnetic Order in FeRh Thin Films. , 0, .		1