

Darshana Wickramaratne

List of Publications by Year in descending order

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papers

2,938
citations

257450

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168389

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69
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69
docs citations

69
times ranked

5599
citing authors

#	ARTICLE	IF	CITATIONS
1	Tin Disulfide—An Emerging Layered Metal Dichalcogenide Semiconductor: Materials Properties and Device Characteristics. ACS Nano, 2014, 8, 10743-10755.	14.6	449
2	Electronic and thermoelectric properties of few-layer transition metal dichalcogenides. Journal of Chemical Physics, 2014, 140, 124710.	3.0	321
3	Gate tunable quantum oscillations in air-stable and high mobility few-layer phosphorene heterostructures. 2D Materials, 2015, 2, 011001.	4.4	209
4	Charge Density Waves in Exfoliated Films of van der Waals Materials: Evolution of Raman Spectrum in TiSe_2 . Nano Letters, 2012, 12, 5941-5945.	9.1	154
5	Monolayer to Bulk Properties of Hexagonal Boron Nitride. Journal of Physical Chemistry C, 2018, 122, 25524-25529.	3.1	134
6	Exciton Fine Structure in Perovskite Nanocrystals. Nano Letters, 2019, 19, 4068-4077.	9.1	128
7	Electronic and thermoelectric properties of van der Waals materials with ring-shaped valence bands. Journal of Applied Physics, 2015, 118, .	2.5	120
8	Fundamentals of lateral and vertical heterojunctions of atomically thin materials. Nanoscale, 2016, 8, 3870-3887.	5.6	117
9	Towards van der Waals Epitaxial Growth of GaAs on Si using a Graphene Buffer Layer. Advanced Functional Materials, 2014, 24, 6629-6638.	14.9	113
10	Direct Bandgap Transition in Many-Layer MoS_2 by Plasma-Induced Layer Decoupling. Advanced Materials, 2015, 27, 1573-1578.	21.0	102
11	Zone-Folded Phonons and the Commensurate-Incommensurate Charge-Density-Wave Transition in 1T-TaSe_2 Thin Films. Nano Letters, 2015, 15, 2965-2973.	9.1	94
12	Iron as a source of efficient Shockley-Read-Hall recombination in GaN. Applied Physics Letters, 2016, 109, .	3.3	64
13	A first-principles understanding of point defects and impurities in GaN. Journal of Applied Physics, 2021, 129, .	2.5	55
14	Phase Engineering of 2D Tin Sulfides. Small, 2016, 12, 2998-3004.	10.0	51
15	Defect identification based on first-principles calculations for deep level transient spectroscopy. Applied Physics Letters, 2018, 113, .	3.3	51
16	Nonrad: Computing nonradiative capture coefficients from first principles. Computer Physics Communications, 2021, 267, 108056.	7.5	50
17	Prospects for n -type doping of $(\text{Al}_x\text{Ga}_{1-x})_2\text{O}_3$ alloys. Applied Physics Letters, 2020, 116, .	3.3	44
18	Exciton condensate in bilayer transition metal dichalcogenides: Strong coupling regime. Physical Review B, 2017, 96, .	3.2	43

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19	Ising Superconductivity and Magnetism in NbSe_2 . <i>Physical Review B</i> , 2019, 100, 040407. https://doi.org/10.1103/PhysRevB.100.040407	8.9	36
20	Role of defects in the metal-insulator transition in VO_2 and VO . <i>Physical Review B</i> , 2019, 100, 040407. https://doi.org/10.1103/PhysRevB.100.040407	3.2	32
21	Electrical and optical properties of iron in GaN, AlN, and InN. <i>Physical Review B</i> , 2019, 99, .	3.2	30
22	A comparative first-principles study of the electronic, mechanical, defect and acoustic properties of Ti_2AlC and Ti_3AlC . <i>Journal Physics D: Applied Physics</i> , 2014, 47, 215301.	2.8	27
23	Theoretical and experimental study of highly textured GaAs on silicon using a graphene buffer layer. <i>Journal of Crystal Growth</i> , 2015, 425, 268-273.	1.5	25
24	Band bowing and the direct-to-indirect crossover in random BAlN alloys. <i>Physical Review Materials</i> , 2017, 1, .	2.4	25
25	Hybrid functional study of native point defects and impurities in ZnGe_2 . <i>Journal of Applied Physics</i> , 2017, 122, .	2.5	22
26	Synthesis of Atomically Thin MoS_2 Triangles and Hexagams and Their Electrical Transport Properties. <i>IEEE Nanotechnology Magazine</i> , 2014, 13, 749-754.	2.0	21
27	Two step growth phenomena of molybdenum disulfide-tungsten disulfide heterostructures. <i>Chemical Communications</i> , 2015, 51, 11213-11216.	4.1	21
28	Direct-Write of Nanoscale Domains with Tunable Metamagnetic Order in FeRh Thin Films. <i>ACS Applied Materials & Interfaces</i> , 2021, 13, 836-847.	8.0	21
29	Calcium as a nonradiative recombination center in InGaN. <i>Applied Physics Express</i> , 2017, 10, 021001.	2.4	19
30	Band alignments and polarization properties of the Zn-IV-nitrides. <i>Journal of Materials Chemistry C</i> , 2020, 8, 7890-7898.	5.5	19
31	First-principles study of bandgap bowing in BGaN alloys. <i>Journal of Applied Physics</i> , 2019, 126, 095706.	2.5	18
32	Role of carbon and hydrogen in limiting n -type doping of monoclinic Al_2O_3 . <i>Physical Review B</i> , 2022, 105, .	3.2	18
33	Diffusion of tellurium at nickel grain boundaries: a first-principles study. <i>RSC Advances</i> , 2017, 7, 8421-8428.	3.6	17
34	Strategies for p -type doping of ZnGe_2 . <i>Applied Physics Letters</i> , 2019, 114, .	3.3	17
35	Charged impurity scattering in two-dimensional materials with ring-shaped valence bands: GaS, GaSe, InS, and InSe. <i>Physical Review B</i> , 2019, 99, .	3.2	17
36	A first-principles study on the defective properties of MAX phase Cr_2AlC : the magnetic ordering and strong correlation effect. <i>RSC Advances</i> , 2016, 6, 84262-84268.	3.6	16

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37	Stacking-dependent optical properties in bilayer WSe_2 . <i>Nanoscale</i> , 2021, 14, 147-156.	5.6	16
38	Finite-size correction for slab supercell calculations of materials with spontaneous polarization. <i>Npj Computational Materials</i> , 2021, 7, .	8.7	14
39	Synthesis, characterization, and electronic structure of few-layer $MoSe_2$ granular films. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2014, 211, 2671-2676.	1.8	13
40	Deep-level Defects and Impurities in InGaN Alloys. <i>Physica Status Solidi (B): Basic Research</i> , 2020, 257, 1900534.	1.5	13
41	Strong Circularly Polarized Photoluminescence from Multilayer MoS_2 Through Plasma Driven Direct-Gap Transition. <i>ACS Photonics</i> , 2016, 3, 310-314.	6.6	12
42	Interlayer transport through a graphene/rotated boron nitride/graphene heterostructure. <i>Physical Review B</i> , 2017, 95, .	3.2	12
43	Interlayer resistance of misoriented MoS_2 . <i>Physical Chemistry Chemical Physics</i> , 2017, 19, 10406-10412.	2.8	12
44	Li^{+} Diffusion in Amorphous and Crystalline Al_2O_3 for Battery Electrode Coatings. <i>Chemistry of Materials</i> , 2021, 33, 7795-7804.	6.7	12
45	Comment on "Comparative study of <i>ab initio</i> nonradiative recombination rate calculations under different formalisms". <i>Physical Review B</i> , 2018, 97, .	3.2	11
46	A first-principles investigation of the electronic, elastic, piezoelectric and acoustic properties of $K_3B_6O_{10}Cl$. <i>Computational Materials Science</i> , 2013, 69, 81-86.	3.0	10
47	Thermodynamics of boron incorporation in B GaN. <i>Physical Review Materials</i> , 2021, 5, .	2.4	10
48	Metallic vs. semiconducting properties of quasi-one-dimensional tantalum selenide van der Waals nanoribbons. <i>Nanoscale</i> , 2022, 14, 6133-6143.	5.6	10
49	Implementation of a Direct Sequence Spread Spectrum Baseband Transmitter Using Silicon Nanowire Technology. <i>Journal of Nanoelectronics and Optoelectronics</i> , 2010, 5, 1-12.	0.5	9
50	Prospects for <i>n</i> -type conductivity in cubic boron nitride. <i>Applied Physics Letters</i> , 2021, 119, .	3.3	9
51	Optical transitions of neutral Mg in Mg-doped $\hat{\Gamma}^2$ -Ga ₂ O ₃ . <i>APL Materials</i> , 2022, 10, .	5.1	9
52	Nontrivial Doping Evolution of Electronic Properties in Inorganic Superconducting Alloys. <i>Advanced Materials</i> , 2022, , 2200492.	21.0	9
53	Coulomb impurity scattering in topological insulator thin films. <i>Applied Physics Letters</i> , 2014, 105, 033118.	3.3	8
54	Optimizing n -type doping of $ZnGeN_2$ and $ZnSiN_2$	3.2	8

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55	Impact of biaxial and uniaxial strain on $\sqrt{VO_3}$. Physical Review B, 2019, 100, .	3.2	8
56	Tunneling spectroscopy of chiral states in ultra-thin topological insulators. Journal of Applied Physics, 2013, 113, 063707.	2.5	6
57	Magnetism-driven unconventional effects in Ising superconductors: Role of proximity, tunneling, and nematicity. Physical Review B, 2021, 104, .	3.2	6
58	Photoinduced chiral charge density wave in TiSe_2 . Physical Review B, 2022, 105, .	3.2	5
59	Effect of alloying in monolayer niobium dichalcogenide superconductors. Nature Communications, 2022, 13, 2376.	12.8	5
60	Design of AlGaIn-based lasers with a buried tunnel junction for sub-300 nm emission. Semiconductor Science and Technology, 2019, 34, 074002.	2.0	4
61	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
62	Laser-Patterned Submicrometer Bi_2Se_3 WS ₂ Pixels with Tunable Circular Polarization at Room Temperature. ACS Applied Materials & Interfaces, 2022, 14, 9504-9514.	8.0	2
63	Spin-Sensitive Epitaxial In_2Se_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.	8.0	2
64	Direct-Write of Nanoscale Domains with Tunable Metamagnetic Order in FeRh Thin Films. , 0, .		1
65	Computational study of the mobility in ultra-thin topological insulator films. , 2013, , .		0
66	Bulk direct band gap MoS_2 by plasma induced layer decoupling. , 2015, , .		0
67	The impact of the ring shaped valence band in few-layer iii-vi materials on fet operation. , 2015, , .		0
68	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, .	2.4	0