

Supratik Guha

List of Publications by Year in descending order

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49
papers

5,158
citations

172457

29
h-index

206112

48
g-index

50
all docs

50
docs citations

50
times ranked

7077
citing authors

#	ARTICLE	IF	CITATIONS
1	Thin film solar cell with 8.4% power conversion efficiency using an earthâ€abundant Cu ₂ ZnSnS ₄ absorber. Progress in Photovoltaics: Research and Applications, 2013, 21, 72-76.	8.1	1,054
2	Aerosol Filtration Efficiency of Common Fabrics Used in Respiratory Cloth Masks. ACS Nano, 2020, 14, 6339-6347.	14.6	709
3	Cu ₂ ZnSnSe ₄ Thinâ€Film Solar Cells by Thermal Coâ€evaporation with 11.6% Efficiency and Improved Minority Carrier Diffusion Length. Advanced Energy Materials, 2015, 5, 1401372.	19.5	408
4	Ultraviolet and violet GaN light emitting diodes on silicon. Applied Physics Letters, 1998, 72, 415-417.	3.3	286
5	Monolithic Perovskiteâ€CIGS Tandem Solar Cells via In Situ Band Gap Engineering. Advanced Energy Materials, 2015, 5, 1500799.	19.5	219
6	Accelerating Materials Development via Automation, Machine Learning, and High-Performance Computing. Joule, 2018, 2, 1410-1420.	24.0	210
7	Absence of magnetism in hafnium oxide films. Applied Physics Letters, 2005, 87, 252502.	3.3	202
8	The Role of Sodium as a Surfactant and Suppressor of Nonâ€Radiative Recombination at Internal Surfaces in Cu ₂ ZnSnS ₄ . Advanced Energy Materials, 2015, 5, 1400849.	19.5	186
9	Oxygen Vacancies in High Dielectric Constant Oxide-Semiconductor Films. Physical Review Letters, 2007, 98, 196101.	7.8	182
10	Perovskite-kesterite monolithic tandem solar cells with high open-circuit voltage. Applied Physics Letters, 2014, 105, .	3.3	175
11	Gate Oxides Beyond SiO ₂ . MRS Bulletin, 2008, 33, 1017-1025.	3.5	127
12	Measurement of Carrier Mobility in Silicon Nanowires. Nano Letters, 2008, 8, 1566-1571.	9.1	113
13	Multicolored light emitters on silicon substrates. Applied Physics Letters, 1998, 73, 1487-1489.	3.3	84
14	Photoluminescence characterization of a high-efficiency Cu ₂ ZnSnS ₄ device. Journal of Applied Physics, 2013, 114, .	2.5	84
15	Sequential Infiltration Synthesis for the Design of Low Refractive Index Surface Coatings with Controllable Thickness. ACS Nano, 2017, 11, 2521-2530.	14.6	84
16	Realization of a Linear Germanium Nanowire pâ€n Junction. Nano Letters, 2006, 6, 2070-2074.	9.1	81
17	Photocurrent Induced by Nonradiative Energy Transfer from Nanocrystal Quantum Dots to Adjacent Silicon Nanowire Conducting Channels: Toward a New Solar Cell Paradigm. Nano Letters, 2009, 9, 4548-4552.	9.1	79
18	Growth System, Structure, and Doping of Aluminum-Seeded Epitaxial Silicon Nanowires. Nano Letters, 2009, 9, 3296-3301.	9.1	73

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19	Synthesis of metastable phases via pulsed-laser-induced reactive quenching at liquid-solid interfaces. Physical Review B, 1987, 36, 8237-8250.	3.2	63
20	Lattice-matched, epitaxial, silicon-insulating lanthanum yttrium oxide heterostructures. Applied Physics Letters, 2002, 80, 766-768.	3.3	62
21	Understanding the relationship between Cu ₂ ZnSn(S,Se) ₄ material properties and device performance. MRS Communications, 2014, 4, 159-170.	1.8	59
22	Epitaxial growth of kesterite Cu ₂ ZnSnS ₄ on a Si(001) substrate by thermal co-evaporation. Thin Solid Films, 2014, 556, 9-12.	1.8	52
23	The impact of sodium on the sub-bandgap states in CZTSe and CZTS. Applied Physics Letters, 2015, 106, .	3.3	51
24	Relationship between Cu ₂ ZnSnS ₄ quasi donor-acceptor pair density and solar cell efficiency. Applied Physics Letters, 2013, 103, .	3.3	44
25	Compatibility Challenges for High- κ Materials Integration into CMOS Technology. MRS Bulletin, 2002, 27, 226-229.	3.5	43
26	Impact of moisture on charge trapping and flatband voltage in Al ₂ O ₃ gate dielectric films. Applied Physics Letters, 2002, 81, 2608-2610.	3.3	41
27	Growth and characterization of epitaxial Si/(La _x Y _{1-x}) ₂ O ₃ /Si heterostructures. Journal of Applied Physics, 2003, 93, 251-258.	2.5	34
28	Charge trapping studies on ultrathin ZrO ₂ and HfO ₂ high- κ dielectrics grown by room temperature ultraviolet ozone oxidation. Applied Physics Letters, 2004, 84, 389-391.	3.3	30
29	Thoreau: A subterranean wireless sensing network for agriculture and the environment. , 2017, , .		30
30	Closed Loop Controlled Precision Irrigation Sensor Network. IEEE Internet of Things Journal, 2018, 5, 4580-4588.	8.7	30
31	Effect of oxide overlayer formation on the growth of gold catalyzed epitaxial silicon nanowires. Applied Physics Letters, 2006, 88, 103113.	3.3	27
32	Response to Letters to the Editor on Aerosol Filtration Efficiency of Common Fabrics Used in Respiratory Cloth Masks: Revised and Expanded Results. ACS Nano, 2020, 14, 10764-10770.	14.6	27
33	Silicon compatible Sn-based resistive switching memory. Nanoscale, 2018, 10, 9441-9449.	5.6	24
34	Epitaxial Er-doped Y ₂ O ₃ on silicon for quantum coherent devices. APL Materials, 2020, 8, .	5.1	23
35	Entrepreneurial Talent Building for 21st Century Agricultural Innovation. ACS Nano, 2021, 15, 10748-10758.	14.6	17
36	Microstructural effects on electrical conductivity relaxation in nanoscale ceria thin films. Journal of Chemical Physics, 2009, 130, 174711.	3.0	14

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37	Nanoporous Dielectric Resistive Memories Using Sequential Infiltration Synthesis. ACS Nano, 2021, 15, 4155-4164.	14.6	12
38	Heteroepitaxial silicon film growth at 600°C from an Al-Si eutectic melt. Thin Solid Films, 2010, 518, 5368-5371.	1.8	10
39	Electrically Driven Insulator-Metal Transition-Based Devices Part I: The Electrothermal Model and Experimental Analysis for the DC Characteristics. IEEE Transactions on Electron Devices, 2018, 65, 3982-3988.	3.0	10
40	Materials Interaction at the Nanoscale in High-k Metal Gate Stacks: The Role of Oxygen. ECS Transactions, 2006, 1, 363-370.	0.5	9
41	A Wireless Underground Sensor Network Field Pilot for Agriculture and Ecology: Soil Moisture Mapping Using Signal Attenuation. Sensors, 2022, 22, 3913.	3.8	8
42	Preface to Special Topic: New Physics and Materials for Neuromorphic Computation. Journal of Applied Physics, 2018, 124, .	2.5	7
43	Electrically Driven Insulator-Metal Transition-Based Devices Part II: Transient Characteristics. IEEE Transactions on Electron Devices, 2018, 65, 3989-3995.	3.0	7
44	Key Device and Materials Specifications for a Repeater Enabled Quantum Internet. IEEE Transactions on Quantum Engineering, 2021, 2, 1-9.	4.9	6
45	Thin-film photovoltaics: Buffer against degradation. Nature Energy, 2017, 2, .	39.5	5
46	Dynamic-quenching of a single-photon avalanche photodetector using an adaptive resistive switch. Nature Communications, 2022, 13, 1517.	12.8	5
47	Transplanted Si films on arbitrary substrates using GaN underlayers. Applied Physics Letters, 2000, 76, 1264-1266.	3.3	3
48	Charge Defects, Vt Shifts, and the Solution to the High-K Metal Gate n-MOSFET Problem. ECS Transactions, 2006, 3, 247-252.	0.5	2
49	Nanophotonic quantum network nodes based on epitaxial rare-earth on silicon heterostructures. , 2020, , .		0