

M Saif Islam

List of Publications by Year in descending order

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Version: 2024-02-01

109
papers

1,807
citations

331670

21
h-index

276875

41
g-index

111
all docs

111
docs citations

111
times ranked

1984
citing authors

#	ARTICLE	IF	CITATIONS
1	Ultrahigh-density silicon nanobridges formed between two vertical silicon surfaces. <i>Nanotechnology</i> , 2004, 15, L5-L8.	2.6	181
2	Photon-trapping microstructures enable high-speed high-efficiency silicon photodiodes. <i>Nature Photonics</i> , 2017, 11, 301-308.	31.4	167
3	A Perspective on Nanowire Photodetectors: Current Status, Future Challenges, and Opportunities. <i>IEEE Journal of Selected Topics in Quantum Electronics</i> , 2011, 17, 1002-1032.	2.9	135
4	A novel interconnection technique for manufacturing nanowire devices. <i>Applied Physics A: Materials Science and Processing</i> , 2005, 80, 1133-1140.	2.3	80
5	A smooth optical superlens. <i>Applied Physics Letters</i> , 2010, 96, 043102.	3.3	78
6	Direct Formation of Catalyst-Free ZnO Nanobridge Devices on an Etched Si Substrate Using a Thermal Evaporation Method. <i>Nano Letters</i> , 2006, 6, 1487-1490.	9.1	77
7	Ultra-Low Contact Resistance of Epitaxially Interfaced Bridged Silicon Nanowires. <i>Nano Letters</i> , 2007, 7, 1536-1541.	9.1	72
8	Physical properties and heterojunction device demonstration of aluminum-doped ZnO thin films synthesized at room ambient via sol-gel method. <i>Journal of Alloys and Compounds</i> , 2012, 521, 155-162.	5.5	67
9	Highly sensitive electrolyte-insulator-semiconductor pH sensors enabled by silicon nanowires with Al ₂ O ₃ /SiO ₂ sensing membrane. <i>Sensors and Actuators B: Chemical</i> , 2012, 171-172, 238-243.	7.8	60
10	Surface depletion thickness of p-doped silicon nanowires grown using metal-catalysed chemical vapour deposition. <i>Nanotechnology</i> , 2006, 17, S240-S245.	2.6	52
11	Surface-illuminated photon-trapping high-speed Ge-on-Si photodiodes with improved efficiency up to 1700 nm. <i>Photonics Research</i> , 2018, 6, 734.	7.0	45
12	InP nanobridges epitaxially formed between two vertical Si surfaces by metal-catalyzed chemical vapor deposition. <i>Applied Physics Letters</i> , 2006, 89, 133121.	3.3	43
13	Solar Blind Photodetectors Enabled by Nanotextured $\text{In}^2\text{-Ga}_2\text{O}_3$ Films Grown via Oxidation of GaAs Substrates. <i>IEEE Photonics Journal</i> , 2017, 9, 1-7.	2.0	42
14	Harvesting and Transferring Vertical Pillar Arrays of Single-Crystal Semiconductor Devices to Arbitrary Substrates. <i>IEEE Transactions on Electron Devices</i> , 2010, 57, 1856-1864.	3.0	40
15	Ultra-smooth metal surfaces generated by pressure-induced surface deformation of thin metal films. <i>Applied Physics A: Materials Science and Processing</i> , 2007, 87, 187-192.	2.3	35
16	High Speed Surface Illuminated Si Photodiode Using Microstructured Holes for Absorption Enhancements at 900-1000 nm Wavelength. <i>ACS Photonics</i> , 2017, 4, 2053-2060.	6.6	30
17	Avalanche photodetectors with photon trapping structures for biomedical imaging applications. <i>Optics Express</i> , 2021, 29, 19024.	3.4	25
18	Ultra-smooth platinum surfaces for nanoscale devices fabricated using chemical mechanical polishing. <i>Applied Physics A: Materials Science and Processing</i> , 2005, 80, 1385-1389.	2.3	24

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19	An Investigation of Electrical and Dielectric Parameters of Sol-Gel Process Enabled η -Ga ₂ O ₃ as a Gate Dielectric Material. IEEE Transactions on Electron Devices, 2017, 64, 2047-2053.	3.0	24
20	The Growth of Ga ₂ O ₃ Nanowires on Silicon for Ultraviolet Photodetector. Sensors, 2019, 19, 5301.	3.8	23
21	Gallium oxide nanowires for UV detection with enhanced growth and material properties. Scientific Reports, 2020, 10, 21434.	3.3	22
22	Sonochemical approach for rapid growth of zinc oxide nanowalls. Applied Physics A: Materials Science and Processing, 2012, 107, 661-667.	2.3	21
23	Enhanced Field Ionization Enabled by Metal Induced Surface States on Semiconductor Nanotips. Advanced Functional Materials, 2014, 24, 2224-2232.	14.9	21
24	3D Transistor Array Based on Horizontally Suspended Silicon Nano-bridges Grown via a Bottom-Up Technique. Advanced Materials, 2014, 26, 1929-1934.	21.0	21
25	A New Paradigm in High-Speed and High-Efficiency Silicon Photodiodes for Communication Part I: Enhancing Photon-Material Interactions via Low-Dimensional Structures. IEEE Transactions on Electron Devices, 2018, 65, 372-381.	3.0	21
26	Long Minority Carrier Diffusion Lengths in Bridged Silicon Nanowires. Nano Letters, 2015, 15, 523-529.	9.1	20
27	A New Paradigm in High-Speed and High-Efficiency Silicon Photodiodes for Communication Part II: Device and VLSI Integration Challenges for Low-Dimensional Structures. IEEE Transactions on Electron Devices, 2018, 65, 382-391.	3.0	18
28	Ensembles of indium phosphide nanowires: physical properties and functional devices integrated on non-single crystal platforms. Applied Physics A: Materials Science and Processing, 2009, 95, 1005-1013.	2.3	17
29	High-Speed High-Efficiency Photon-Trapping Broadband Silicon PIN Photodiodes for Short-Reach Optical Interconnects in Data Centers. Journal of Lightwave Technology, 2019, 37, 5748-5755.	4.6	17
30	Shape and Positional Anisotropy Based Area Efficient Magnetic Quantum-Dot Cellular Automata Design Methodology for Full Adder Implementation. IEEE Nanotechnology Magazine, 2018, 17, 1303-1307.	2.0	15
31	Issues on nanoimprint lithography with a single-layer resist structure. Applied Physics A: Materials Science and Processing, 2005, 81, 1331-1335.	2.3	14
32	Switching between positive and negative permeability by photoconductive coupling for modulation of electromagnetic radiation. Applied Physics A: Materials Science and Processing, 2007, 87, 209-216.	2.3	14
33	Surface passivation of silicon photonic devices with high surface-to-volume-ratio nanostructures. Journal of the Optical Society of America B: Optical Physics, 2018, 35, 1059.	2.1	14
34	Photoelectrochemical (PEC) etching of Ga ₂ O ₃ . Ceramics International, 2021, 47, 479-486.	4.8	14
35	Integrated receiver architectures for board-to-board free-space optical interconnects. Applied Physics A: Materials Science and Processing, 2009, 95, 1079-1088.	2.3	13
36	High-precision transfer-printing and integration of vertically oriented semiconductor arrays for flexible device fabrication. Nano Research, 2014, 7, 998-1006.	10.4	13

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37	Organic/inorganic interfaced field-effect transistor properties with a novel organic semiconducting material. Philosophical Magazine, 2016, 96, 274-285.	1.6	13
38	Dynamics Contributions to the Growth Mechanism of Ga ₂ O ₃ Thin Film and NWs Enabled by Ag Catalyst. Nanomaterials, 2019, 9, 1272.	4.1	13
39	Dramatically Enhanced Efficiency in Ultra-Fast Silicon MSM Photodiodes Via Light Trapping Structures. IEEE Photonics Technology Letters, 2019, 31, 1619-1622.	2.5	13
40	Extraction of Doping Concentration and Interface State Density in Silicon Nanowires. IEEE Nanotechnology Magazine, 2011, 10, 1004-1009.	2.0	12
41	Photogalvanic Etching of n-GaN for Three-Dimensional Electronics. Journal of Electronic Materials, 2019, 48, 3345-3350.	2.2	12
42	Seamless Integration of an Elastomer with Electrode Matrix and its In-situ Conversion into a Solid State Electrolyte for Robust Li-ion Batteries. Advanced Functional Materials, 2013, 23, 5941-5951.	14.9	11
43	Rigorous coupled-wave analysis of absorption enhancement in vertically illuminated silicon photodiodes with photon-trapping hole arrays. Nanophotonics, 2019, 8, 1747-1756.	6.0	9
44	Single Microhole per Pixel in CMOS Image Sensors With Enhanced Optical Sensitivity in Near-Infrared. IEEE Sensors Journal, 2021, 21, 10556-10562.	4.7	9
45	Electrically conducting film of silver sub-micron particles as mechanical and electrical interfaces for transfer printed micro- and nano-pillar devices. Applied Physics A: Materials Science and Processing, 2013, 111, 251-259.	2.3	8
46	Influence of Silver as a Catalyst on the Growth of ¹² -Ga ₂ O ₃ Nanowires on GaAs. Materials, 2020, 13, 5377.	2.9	7
47	Maximizing Absorption in Photon-Trapping Ultrafast Silicon Photodetectors. Advanced Photonics Research, 2021, 2, 2000190.	3.6	7
48	High Current Density and Failure Mechanism in Epitaxially Bridged Silicon Nanowires. , 2008, , .		6
49	Nanowire-based devices combining light guiding and photodetection. Applied Physics A: Materials Science and Processing, 2011, 105, 311-316.	2.3	6
50	Fabrication of 3D-silicon micro-pillars/walls decorated with aluminum-ZnO/ZnO nanowires for optoelectric devices. Physica Status Solidi (A) Applications and Materials Science, 2013, 210, 1377-1380.	1.8	6
51	Nanobridge gate-all-around phototransistors for electro-optical OR gate circuit and frequency doubler applications. Applied Physics Letters, 2014, 104, 022110.	3.3	6
52	High-aspect ratio micro- and nanostructures enabled by photo-electrochemical etching for sensing and energy harvesting applications. Applied Nanoscience (Switzerland), 2018, 8, 1171-1177.	3.1	6
53	Comparative Study of Growth Morphologies of Ga ₂ O ₃ Nanowires on Different Substrates. Nanomaterials, 2020, 10, 1920.	4.1	6
54	Modeling of nanohole silicon pin/nip photodetectors: Steady state and transient characteristics. Nanotechnology, 2021, 32, 365201.	2.6	6

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55	Bridged oxide nanowire device fabrication using single step metal catalyst free thermal evaporation. RSC Advances, 2018, 8, 10294-10301.	3.6	5
56	A study of temperature dependent current-voltage ($I-V$) characteristics in Ni/gel $\text{In}_2\text{-Ga}_2\text{O}_3/\text{n-GaN}$ structure. Journal of Materials Science: Materials in Electronics, 2018, 29, 11265-11270.	2.2	5
57	Improvement of Schottky Contacts of Gallium Oxide (Ga_2O_3) Nanowires for UV Applications. Sensors, 2022, 22, 2048.	3.8	5
58	Silicon Nanowire Bridge Arrays With Dramatically Improved Yields Enabled by Gold Colloids Functionalized With HF Acid and Poly-L-Lysine. IEEE Nanotechnology Magazine, 2013, 12, 1173-1177.	2.0	4
59	Inhibiting device degradation induced by surface damages during top-down fabrication of semiconductor devices with micro/nano-scale pillars and holes. , 2016, , .		4
60	Manufacturing and electrical characterization of Al-doped ZnO-coated silicon nanowires. Materials Science in Semiconductor Processing, 2018, 75, 124-129.	4.0	4
61	Oxidation of GaAs substrates to enable $\text{In}_2\text{-Ga}_2\text{O}_3$ films for sensors and optoelectronic devices. , 2017, , .		4
62	Realization of 3D Isotropic Negative Index Materials using Massively Parallel and Manufacturable Microfabrication and Micromachining Technology. Materials Research Society Symposia Proceedings, 2006, 919, 1.	0.1	3
63	Integrating Ormosil films onto microstructured semiconductor substrates. Acta Materialia, 2014, 72, 159-166.	7.9	3
64	Spontaneous delamination via compressive buckling facilitates large-scale $\text{In}_2\text{-Ga}_2\text{O}_3$ thin film transfer from reusable GaAs substrates. Physica Status Solidi (A) Applications and Materials Science, 2017, 214, 1700102.	1.8	3
65	Photodetectors with Photon-trapping Surface Nanostructures for Short Range LIDAR Systems. , 2019, , .		3
66	High-Speed High-Efficiency Broadband Silicon Photodiodes for Short-Reach Optical Interconnects in Data Centers. , 2018, , .		3
67	Ultra-thin super absorbing photon trapping materials for high-performance infrared detection. , 2019, , .		3
68	Engineering the gain and bandwidth in avalanche photodetectors. Optics Express, 2022, 30, 16873.	3.4	3
69	Electrical Resistivity & Thermal Stability of Smooth Silver Thin Film for Nanoscale Optoelectronic Devices. , 2008, , .		2
70	Memristors based on an organic monolayer of molecules and a thin film of solid electrolytes. , 2010, , .		2
71	Synthesis of Si Nanowires by Electroless Etching Technique and Their Integration Into I-III-VI ₂ Thin Films For Solar Cells. Materials Research Society Symposia Proceedings, 2012, 1408, 49.	0.1	2
72	Novel Approach to Synthesize Nanostructured Gallium Oxide for Devices Operating in Harsh Environmental Conditions. Sustainability, 2021, 13, 10197.	3.2	2

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73	Epitaxially Integrated Semiconductor Nanowires for Nanoscale Electronics, Photonics and NEMS. Conference Proceedings - Lasers and Electro-Optics Society Annual Meeting-LEOS, 2007, , .	0.0	1
74	Contact Resistance of Epitaxially Interfaced Bridged Silicon Nanowires. , 2007, , .		1
75	Synthesis and Field Emission Characteristics of Ga ₂ O ₃ Nanorods with Ultra-Sharp Tips. , 2008, , .		1
76	Enhanced field ionization/desorption on branched silicon nanowires: applications in gas ionization detection. Proceedings of SPIE, 2010, , .	0.8	1
77	Electrical Contact Characteristics between Silicon Micropillars and Ag Nanoparticles with Controlled Mechanical Load. Materials Research Society Symposia Proceedings, 2012, 1429, 20.	0.1	1
78	Silicon Nanowire Integrated Electrolyte-Insulator-Semiconductor Sensor with an Above-Nernstian Sensitivity for Bio-Sensing Applications. Materials Research Society Symposia Proceedings, 2012, 1439, 127-132.	0.1	1
79	Interfacing Ag Nanoparticles with 1D Semiconductor Micro/Nanostructures via Joule Heating for Transfer Printing Nanodevices at Room Ambient. Materials Research Society Symposia Proceedings, 2012, 1429, 1.	0.1	1
80	Demonstration of gate-all-around FETs based on suspended CVD-grown silicon nanowires. , 2013, , .		1
81	Optimized Ultrasharp Silicon Nanowire Geometries for Enhanced Field Ionization Properties. Materials Research Society Symposia Proceedings, 2015, 1785, 7-11.	0.1	1
82	Nanowire enabled photodetection. , 2016, , 87-120.		1
83	Pattern induced convex corner undercutting of oriented silicon microridges in potassium hydroxide. Microsystem Technologies, 2017, 23, 75-80.	2.0	1
84	Incident light angle dependence of microwalled silicon solar cell efficiency for fracture transfer printing applications. Physica Status Solidi (A) Applications and Materials Science, 2017, 214, 1600724.	1.8	1
85	Characterization of $\text{In}^{2+}\text{-Ga}^{3+}\text{O}^{3-}$ interface and conduction band offset with GaN using a Sol-gel process of deposition. , 2017, , .		1
86	Optimization of light trapping micro-hole structure for high-speed high-efficiency silicon photodiodes. , 2017, , .		1
87	Enhanced Quantum Efficiency and Reduction of Reflection for MSM Photodetectors with Nano-Structured Surface. , 2018, , .		1
88	Controlling light penetration depth to amplify the gain in ultra-fast silicon APDs and SPADs using photon-trapping nanostructures. , 2021, , .		1
89	A Novel Fabrication Technique for Developing Metal Nanodroplet Arrays. Materials Research Society Symposia Proceedings, 2006, 940, 1.	0.1	0
90	Smooth Ag Film Deposited Using e-beam Evaporated Ge as an Intermediate Layer for Applications in Nanoscale Devices and Optical Superlens. Materials Research Society Symposia Proceedings, 2007, 990, 1.	0.1	0

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91	Surface Deformation of Metal Films Under Controlled Pressure for Generating Ultra-flat Metal Surfaces. Materials Research Society Symposia Proceedings, 2007, 990, 1.	0.1	0
92	Indium phosphide nanowire photoconductors on non-single crystalline silicon-based platform. , 2007, , .		0
93	Novel nanowire integration schemes for massively parallel and manufacturable nanoscale electronics and photonics. , 2008, , .		0
94	Poly(Hydridocarbyne) as Highly Processable Insulating Polymer Precursor to Micro/Nanostructures and Graphite Conductors. , 2008, , .		0
95	Persistent Photocurrent in InP Nanowires Heteroepitaxially Bridged Between Single Crystal Si Surfaces. Materials Research Society Symposia Proceedings, 2008, 1080, 1.	0.1	0
96	Impact of Casimir force in molecular electronic switching junctions. , 2008, , .		0
97	Raman Spectroscopic Analysis of p-doped Bridged InP Nanowire. Materials Research Society Symposia Proceedings, 2008, 1080, 1.	0.1	0
98	Anisotropic Conducting Film (ACF) of Ag Nanoparticles as Transfer Polymer and Electrical Interface for Silicon Micro- and Nano- Pillars. Materials Research Society Symposia Proceedings, 2011, 1303, 185.	0.1	0
99	Synthesis of ZnO Nanowires by Hydrothermal Technique for Integration Into Chalcopyrite Thin Films. Materials Research Society Symposia Proceedings, 2012, 1406, .	0.1	0
100	Effect of Cathode Metal Evaporation Rate on the Deep Trapped Hole Formation in Bulk Heterojunction Organic Solar Cells. Materials Research Society Symposia Proceedings, 2012, 1390, 95.	0.1	0
101	Electrical Contacts to Vertically Oriented Silicon Nano and Microdevices for Applications in Flexible Systems. Materials Research Society Symposia Proceedings, 2013, 1553, 1.	0.1	0
102	Scanning Photocurrent Microscopy of as-Grown Silicon Nanowire Metallurgical Junctions. Materials Research Society Symposia Proceedings, 2013, 1551, 29-33.	0.1	0
103	Improving yields in bridging silicon nanowires with rational control of the bridge characteristics. Materials Research Society Symposia Proceedings, 2013, 1551, 111-116.	0.1	0
104	Nano-bridge enabled three-dimensional gate-all-around field effect transistors. , 2014, , .		0
105	One-Dimensional Nano-structured Solar Cells. Nanoscience and Technology, 2016, , 351-400.	1.5	0
106	Enhanced Photon Detection Efficiency of Silicon Single Photon Avalanche Photodetectors Enabled by Photon Trapping Structures. , 2018, , .		0
107	Ultra-Thin MSM Photodetectors with Nano-Structured Surface. , 2019, , .		0
108	Black holes enabled light bending and trapping in ultrafast silicon photodetectors. , 2018, , .		0

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109	Transfer of ordered and disordered Si nanowires onto alien substrates for the fabrication of third-generation solar cells. , 2019, , .		0