Rehan R Kapadia

List of Publications by Year
in descending order

74 papers	3,798 citations	159585 30 h-index	123424 61 g-index
76 all docs	76 docs citations	76 times ranked	6434 citing authors

#	Article	IF	Citations
1	MoS₂ P-type Transistors and Diodes Enabled by High Work Function MoO_x Contacts. Nano Letters, 2014, 14, 1337-1342.	9.1	487
2	Ultrathin compound semiconductor on insulator layers for high-performance nanoscale transistors. Nature, 2010, 468, 286-289.	27.8	373
3	Ordered Arrays of Dual-Diameter Nanopillars for Maximized Optical Absorption. Nano Letters, 2010, 10, 3823-3827.	9.1	269
4	pâ€Type InP Nanopillar Photocathodes for Efficient Solarâ€Driven Hydrogen Production. Angewandte Chemie - International Edition, 2012, 51, 10760-10764.	13.8	245
5	Challenges and prospects of nanopillar-based solar cells. Nano Research, 2009, 2, 829.	10.4	223
6	Ballistic InAs Nanowire Transistors. Nano Letters, 2013, 13, 555-558.	9.1	155
7	Bandgap Control via Structural and Chemical Tuning of Transition Metal Perovskite Chalcogenides. Advanced Materials, 2017, 29, 1604733.	21.0	154
8	Nanopillar photovoltaics: Materials, processes, and devices. Nano Energy, 2012, 1, 132-144.	16.0	142
9	Role of TiO₂ Surface Passivation on Improving the Performance of p-InP Photocathodes. Journal of Physical Chemistry C, 2015, 119, 2308-2313.	3.1	127
10	Quantum Confinement Effects in Nanoscale-Thickness InAs Membranes. Nano Letters, 2011, 11, 5008-5012.	9.1	97
11	Mimicking Biological Synaptic Functionality with an Indium Phosphide Synaptic Device on Silicon for Scalable Neuromorphic Computing. ACS Nano, 2018, 12, 1656-1663.	14.6	96
12	Nanoscale InGaSb Heterostructure Membranes on Si Substrates for High Hole Mobility Transistors. Nano Letters, 2012, 12, 2060-2066.	9.1	85
13	Design constraints and guidelines for CdS/CdTe nanopillar based photovoltaics. Applied Physics Letters, 2010, 96, .	3.3	78
14	Near-ideal electrical properties of InAs/WSe2 van der Waals heterojunction diodes. Applied Physics Letters, 2013, 102, .	3.3	71
15	Black Ge Based on Crystalline/Amorphous Core/Shell Nanoneedle Arrays. Nano Letters, 2010, 10, 520-523.	9.1	68
16	Observation of Degenerate One-Dimensional Sub-Bands in Cylindrical InAs Nanowires. Nano Letters, 2012, 12, 1340-1343.	9.1	65
17	A direct thin-film path towards low-cost large-area III-V photovoltaics. Scientific Reports, 2013, 3, 2275.	3.3	65
18	Roll-to-Roll Anodization and Etching of Aluminum Foils for High-Throughput Surface Nanotexturing. Nano Letters, 2011, 11, 3425-3430.	9.1	58

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19	Molecular monolayers for conformal, nanoscale doping of InP nanopillar photovoltaics. Applied Physics Letters, 2011, 98, .	3.3	54
20	Optimal Bandgap in a 2D Ruddlesdenâ€“Popper Perovskite Chalcogenide for Single-Junction Solar Cells. Chemistry of Materials, 2018, 30, 4882-4886.	6.7	49
21	Direct growth of single-crystalline IIIâ€“V semiconductors on amorphous substrates. Nature Communications, 2016, 7, 10502.	12.8	45
22	Flexible Carbonâ€Nanofiber Connectors with Anisotropic Adhesion Properties. Small, 2010, 6, 22-26.	10.0	44
23	Nanoscale Semiconductor â€œXâ€•on Substrate â€œYâ€•â€“ Processes, Devices, and Applications. Advanced Materials, 2011, 23, 3115-3127.	21.0	42
24	Benchmarking the performance of ultrathin body InAs-on-insulator transistors as a function of body thickness. Applied Physics Letters, 2011, 99, .	3.3	40
25	Multifunctional, flexible electronic systems based on engineered nanostructured materials. Nanotechnology, 2012, 23, 344001.	2.6	38
26	Hot electron-driven photocatalytic water splitting. Physical Chemistry Chemical Physics, 2017, 19, 2877-2881.	2.8	37
27	High quality interfaces of InAs-on-insulator field-effect transistors with ZrO2 gate dielectrics. Applied Physics Letters, 2013, 102, .	3.3	33
28	Deterministic Nucleation of InP on Metal Foils with the Thin-Film Vaporâ€“Liquidâ€“Solid Growth Mode. Chemistry of Materials, 2014, 26, 1340-1344.	6.7	32
29	Scalable Indium Phosphide Thin-Film Nanophotonics Platform for Photovoltaic and Photoelectrochemical Devices. ACS Nano, 2017, 11, 5113-5119.	14.6	30
30	Shape-Controlled Synthesis of Single-Crystalline Nanopillar Arrays by Template-Assisted Vaporâ^'Liquidâ^'Solid Process. Journal of the American Chemical Society, 2010, 132, 13972-13974.	13.7	29
31	Engineering Complex Synaptic Behaviors in a Single Device: Emulating Consolidation of Short-term Memory to Long-term Memory in Artificial Synapses via Dielectric Band Engineering. Nano Letters, 2020, 20, 7793-7801.	9.1	29
32	Hybrid core-multishell nanowire forests for electrical connector applications. Applied Physics Letters, 2009, 94, 263110.	3.3	28
33	Rationally Designed, Threeâ€Dimensional Carbon Nanotube Backâ€Contacts for Efficient Solar Devices. Advanced Energy Materials, 2011, 1, 1040-1045.	19.5	27
34	Hot-electron emission processes in waveguide-integrated graphene. Nature Photonics, 2019, 13, 843-848.	31.4	24
35	High optical quality polycrystalline indium phosphide grown on metal substrates by metalorganic chemical vapor deposition. Journal of Applied Physics, 2012, 111, 123112.	2.5	21
36	IIIâ€Vs at scale: a PV manufacturing cost analysis of the thin film vaporâ€“liquidâ€“solid growth mode. Progress in Photovoltaics: Research and Applications, 2016, 24, 871-878.	8.1	20

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37	Surface Charge Transfer Doping of IIIâ€“V Nanostructures. Journal of Physical Chemistry C, 2013, 117, 17845-17849.	3.1	19
38	Quantum Well InAs/AlSb/GaSb Vertical Tunnel FET With HSQ Mechanical Support. IEEE Nanotechnology Magazine, 2015, 14, 580-584.	2.0	19
39	Confined Liquid-Phase Growth of Crystalline Compound Semiconductors on Any Substrate. ACS Nano, 2018, 12, 5158-5167.	14.6	19
40	Morphological and spatial control of InP growth using closed-space sublimation. Journal of Applied Physics, 2012, 112, 123102.	2.5	18
41	Development of a compact neutron source based on field ionization processes. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2011, 29, 02B107.	1.2	16
42	Two-dimensional to three-dimensional tunneling in InAs/AlSb/GaSb quantum well heterojunctions. Journal of Applied Physics, 2013, 114, .	2.5	16
43	Electrodeposition of High-Purity Indium Thin Films and Its Application to Indium Phosphide Solar Cells. Journal of the Electrochemical Society, 2014, 161, D794-D800.	2.9	16
44	Photovoltaic Material Characterization With Steady State and Transient Photoluminescence. IEEE Journal of Photovoltaics, 2015, 5, 282-287.	2.5	15
45	High Quantum Efficiency Hot Electron Electrochemistry. Nano Letters, 2019, 19, 6227-6234.	9.1	15
46	A compact neutron generator using a field ionization source. Review of Scientific Instruments, 2012, 83, 02B312.	1.3	14
47	Photocurrent spectroscopy of exciton and free particle optical transitions in suspended carbon nanotube pn-junctions. Applied Physics Letters, 2015, 107, 053107.	3.3	13
48	Performance Limits of Graphene Hot Electron Emission Photoemitters. Physical Review Applied, 2020, 13, .	3.8	13
49	Effects of palladium coating on field-emission properties of carbon nanofibers in a hydrogen plasma. Thin Solid Films, 2013, 534, 488-491.	1.8	11
50	Multifunctional photoresponsive organic molecule for electric field sensing and modulation. Journal of Materials Chemistry C, 2022, 10, 1204-1211.	5.5	10
51	Contact photolithography-free integration of patterned and semi-transparent indium tin oxide stimulation electrodes into polydimethylsiloxane-based heart-on-a-chip devices for streamlining physiological recordings. Lab on A Chip, 2021, 21, 674-687.	6.0	7
52	Hot electron emission from waveguide integrated lanthanum hexaboride nanoparticles. Applied Physics Letters, 2021, 118, .	3.3	7
53	Independent tuning of work function and field enhancement factor in hybrid lanthanum hexaboride-graphene-silicon field emitters. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2017, 35, 062202.	1.2	6
54	Tunable Onset of Hydrogen Evolution in Graphene with Hot Electrons. Nano Letters, 2020, 20, 1791-1799.	9.1	6

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55	Efficient and ultrafast optical modulation of on-chip thermionic emission using resonant cavity coupled electron emitters. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2016, 34, 041228.	1.2	5
56	Buffer insensitive optoelectronic quality of InP-on-Si with templated liquid phase growth. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2018, 36, .	1.2	5
57	Epitaxial growth and dielectric characterization of atomically smooth 0.5Ba(Zr0.2Ti0.8)O3â€“0.5(Ba0.7Ca0.3)TiO3 thin films. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2019, 37, .	2.1	5
58	High mobility large area single crystal IIIâ€“V thin film templates directly grown on amorphous SiO2 on silicon. Applied Physics Letters, 2020, 117, .	3.3	5
59	Avalanche Photoemission in Suspended Carbon Nanotubes: Light without Heat. ACS Photonics, 2017, 4, 2706-2710.	6.6	4
60	Low Temperature Growth of Crystalline Semiconductors on Nonepitaxial Substrates. Advanced Materials Interfaces, 2020, 7, 1902191.	3.7	3
61	Monolithic High-Mobility InAs on Oxide Grown at Low Temperature. ACS Applied Electronic Materials, 2020, 2, 1997-2002.	4.3	3
62	Increasing the Hotâ€Electron Driven Hydrogen Evolution Reaction Rate on a Metalâ€Free Graphene Electrode. Advanced Materials Interfaces, 2021, 8, 2001706.	3.7	3
63	Machine Vision With InP Based Floating-Gate Photo-Field-Effective Transistors for Color-Mixed Image Recognition. IEEE Journal of Quantum Electronics, 2022, 58, 1-7.	1.9	3
64	Prevention of surface recombination by electrochemical tuning of TiO2-passivated photocatalysts. Applied Physics Letters, 2017, 111, 141603.	3.3	2
65	Ultra-thin compound semiconductor on insulator (XOI) for MOSFETs and TFETs. , 2011, , .		1
66	Broadband electroluminescence from reverse breakdown in individual suspended carbon nanotube pn-junctions. Nano Research, 2020, 13, 2857-2861.	10.4	1
67	Auger Suppression of Incandescence in Individual Suspended Carbon Nanotube pn-Junctions. ACS Applied Materials & Interfaces, 2020, 12, 11907-11912.	8.0	1
68	7.3: Development of a compact neutron source based on field ionization processes. , 2010, , .		0
69	Nanowire-based 2-D and 3-D XoY electronics. , 2010, , .		0
70	Engineering the field enhancement factor and work function toward ultra-low threshold field electron emitter. , 2018, , .		0
71	Integrated waveguide assisted electron emission device. , 2018, , .		0
72	A Platform for Monolithic Back End of Line III-V Integration. , 2020, , .		0

#	Article	IF	Citations
73	Photoemission Assisted by Low workfunction Nanoparticle Waveguide Integrated Device. , 2021, , .		0
74	Integrated photonic components for photoemission. , 2021, , .		0