

Mahdi Pourfath

List of Publications by Year in descending order

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122
papers

2,062
citations

304368

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276539

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g-index

124
all docs

124
docs citations

124
times ranked

2356
citing authors

#	ARTICLE	IF	CITATIONS
1	Modulation of electronic and mechanical properties of phosphorene through strain. Physical Review B, 2015, 91, .	1.1	172
2	High sensitive and selective flexible H ₂ S gas sensors based on Cu nanoparticle decorated SWCNTs. Sensors and Actuators B: Chemical, 2015, 210, 1-8.	4.0	114
3	Highly anisotropic thermal conductivity of arsenene: An <i>ab initio</i> study. Physical Review B, 2016, 93, .	1.1	114
4	Engineering enhanced thermoelectric properties in zigzag graphene nanoribbons. Journal of Applied Physics, 2012, 111, .	1.1	88
5	Titanium Carbide MXene as NH ₃ Sensor: Realistic First-Principles Study. Journal of Physical Chemistry C, 2019, 123, 29794-29803.	1.5	78
6	Strain-Induced Modulation of Electron Mobility in Single-Layer Transition Metal Dichalcogenides MX ₂ ($M = \{m Mo\}$). Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 547 Electron Devices, 2015, 62, 3192-3198.	1.6	73
7	Geometrical effects on the thermoelectric properties of ballistic graphene antidot lattices. Journal of Applied Physics, 2011, 110, .	1.1	69
8	The Non-Equilibrium Green's Function Method for Nanoscale Device Simulation. Computational Microelectronics, 2014, , .	1.2	59
9	A Numerical Study of Line-Edge Roughness Scattering in Graphene Nanoribbons. IEEE Transactions on Electron Devices, 2012, 59, 433-440.	1.6	58
10	Method for Predictingf_T for Carbon Nanotube FETs. IEEE Nanotechnology Magazine, 2005, 4, 699-704.	1.1	52
11	A first-principles study on the effect of biaxial strain on the ultimate performance of monolayer MoS ₂ -based double gate field effect transistor. Journal of Applied Physics, 2013, 113, .	1.1	51
12	Device Performance of Graphene Nanoribbon Field-Effect Transistors in the Presence of Line-Edge Roughness. IEEE Transactions on Electron Devices, 2012, 59, 3527-3532.	1.6	50
13	Strain induced mobility modulation in single-layer MoS ₂ . Journal Physics D: Applied Physics, 2015, 48, 375104.	1.3	44
14	Performance Assessment of Nanoscale Field-Effect Diodes. IEEE Transactions on Electron Devices, 2011, 58, 2378-2384.	1.6	41
15	A multi-purpose Schrödinger-Poisson Solver for TCAD applications. Journal of Computational Electronics, 2007, 6, 179-182.	1.3	38
16	Ferroelectricity and phase transitions in In ₂ Se ₃ van der Waals material. Nanoscale, 2020, 12, 22688-22697.	2.8	35
17	An Analytical Model for Line-Edge Roughness Limited Mobility of Graphene Nanoribbons. IEEE Transactions on Electron Devices, 2011, 58, 3725-3735.	1.6	34
18	Very large strain gauges based on single layer MoSe ₂ and WSe ₂ for sensing applications. Applied Physics Letters, 2015, 107, .	1.5	32

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19	Atomistic Study of the Lattice Thermal Conductivity of Rough Graphene Nanoribbons. IEEE Transactions on Electron Devices, 2013, 60, 2142-2147.	1.6	30
20	A Comparative Study of Tunneling FETs Based on Graphene and GNR Heterostructures. IEEE Transactions on Electron Devices, 2014, 61, 186-192.	1.6	28
21	Optical properties of armchair graphene nanoribbons embedded in hexagonal boron nitride lattices. Journal of Applied Physics, 2012, 111, 093512.	1.1	24
22	Low-dimensional phonon transport effects in ultranarrow disordered graphene nanoribbons. Physical Review B, 2015, 91, .	1.1	23
23	The influence of non-idealities on the thermoelectric power factor of nanostructured superlattices. Journal of Applied Physics, 2015, 118, 224301.	1.1	22
24	Separated carrier injection control in carbon nanotube field-effect transistors. Journal of Applied Physics, 2005, 97, 106103.	1.1	21
25	Tunneling CNTFETs. Journal of Computational Electronics, 2007, 6, 243-246.	1.3	21
26	The effect of phonon scattering on the switching response of carbon nanotube field-effect transistors. Nanotechnology, 2007, 18, 424036.	1.3	20
27	The Fragility of Thermoelectric Power Factor in Cross-Plane Superlattices in the Presence of Nonidealities: A Quantum Transport Simulation Approach. Journal of Electronic Materials, 2016, 45, 1584-1588.	1.0	20
28	Use of licorice plant extract for controlling corrosion of steel rebar in chloride-polluted concrete pore solution. Journal of Molecular Liquids, 2022, 346, 117856.	2.3	20
29	Numerical study of quantum transport in carbon nanotube transistors. Mathematics and Computers in Simulation, 2008, 79, 1051-1059.	2.4	19
30	Tunable Bandgap in Bilayer Armchair Graphene Nanoribbons: Concurrent Influence of Electric Field and Uniaxial Strain. IEEE Transactions on Electron Devices, 2013, 60, 2464-2470.	1.6	19
31	Separated and intermixed phases of borophene as anode material for lithium-Ion batteries. Journal Physics D: Applied Physics, 2019, 52, 245501.	1.3	19
32	Geometrical study of nanoscale field effect diodes. Semiconductor Science and Technology, 2012, 27, 045011.	1.0	18
33	Substrate surface corrugation effects on the electronic transport in graphene nanoribbons. Applied Physics Letters, 2013, 103, .	1.5	18
34	Flexible phototransistors based on graphene nanoribbon decorated with MoS2 nanoparticles. Sensors and Actuators A: Physical, 2015, 232, 285-291.	2.0	18
35	Impact of Different Ratios of Fluorine, Oxygen, and Hydroxyl Surface Terminations on Ti3C2Tx MXene as Ammonia Sensor: A First-Principles Study. , 2018, , .		18
36	Numerical Analysis of Coaxial Double Gate Schottky Barrier Carbon Nanotube Field Effect Transistors. Journal of Computational Electronics, 2005, 4, 75-78.	1.3	17

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37	Rigorous modeling of carbon nanotube transistors. Journal of Physics: Conference Series, 2006, 38, 29-32.	0.3	17
38	Study of thermal properties of graphene-based structures using the force constant method. Journal of Computational Electronics, 2012, 11, 14-21.	1.3	17
39	Numerical Study of Graphene Superlattice-Based Photodetectors. IEEE Transactions on Electron Devices, 2015, 62, 593-600.	1.6	17
40	Asymmetric Gate Schottky-Barrier Graphene Nanoribbon FETs for Low-Power Design. IEEE Transactions on Electron Devices, 2014, 61, 4000-4006.	1.6	16
41	High-performance infrared photo-transistor based on SWCNT decorated with PbS nanoparticles. Sensors and Actuators A: Physical, 2014, 220, 213-220.	2.0	16
42	A Computational Study on the Electronic Transport Properties of Ultranarrow Disordered Zigzag Graphene Nanoribbons. IEEE Transactions on Electron Devices, 2014, 61, 23-29.	1.6	16
43	A fast and stable Poisson-Schrödinger solver for the analysis of carbon nanotube transistors. Journal of Computational Electronics, 2006, 5, 155-159.	1.3	15
44	Magnetic graphene/Ni-nano-crystal hybrid for small field magnetoresistive effect synthesized via electrochemical exfoliation/deposition technique. Journal of Materials Science: Materials in Electronics, 2018, 29, 4171-4178.	1.1	15
45	Aggregation Kinetics and Stability Mechanisms of Pristine and Oxidized Nanocarbons in Polar Solvents. Journal of Physical Chemistry C, 2016, 120, 16804-16814.	1.5	14
46	Modeling of a Vertical Tunneling Transistor Based on Graphene/MoS ₂ Heterostructure. IEEE Transactions on Electron Devices, 2017, 64, 3459-3465.	1.6	14
47	Adsorption characteristics of epigenetically modified DNA nucleobases on single-layer MoS ₂ : A first-principles study. Journal of Applied Physics, 2018, 124, 134501.	1.1	14
48	Electronic Transport Properties of Silicane Determined from First Principles. Materials, 2019, 12, 2935.	1.3	14
49	Using plant extracts to modify Al electrochemical behavior under corroding and functioning conditions in the air battery with alkaline-ethylene glycol electrolyte. Journal of Industrial and Engineering Chemistry, 2021, 102, 327-342.	2.9	14
50	Proposing high-affinity inhibitors from <i>Glycyrrhiza glabra</i> L. against SARS-CoV-2 infection: virtual screening and computational analysis. New Journal of Chemistry, 2021, 45, 15977-15995.	1.4	14
51	Computational study of carbon-based electronics. Journal of Computational Electronics, 2009, 8, 427-440.	1.3	13
52	Simple One-Step Fabrication of Semiconductive Lateral Heterostructures Using Bipolar Electrodeposition. Physica Status Solidi - Rapid Research Letters, 2018, 12, 1800418.	1.2	13
53	Ab Initio Analysis of Periodic Self-Assembly Phases of Borophene as Anode Material for Na-Ion Batteries. Journal of Physical Chemistry C, 2021, 125, 5436-5446.	1.5	13
54	A computational study of vertical tunneling transistors based on graphene-WS ₂ heterostructure. Journal of Applied Physics, 2017, 121, .	1.1	13

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55	Optimization of Schottky barrier carbon nanotube field effect transistors. <i>Microelectronic Engineering</i> , 2005, 81, 428-433.	1.1	12
56	Tunable natural terahertz and mid-infrared hyperbolic plasmons in carbon phosphide. <i>Carbon</i> , 2021, 178, 625-631.	5.4	12
57	Fast Convergent Schrödinger-Poisson Solver for the Static and Dynamic Analysis of Carbon Nanotube Field Effect Transistors. <i>Lecture Notes in Computer Science</i> , 2006, , 578-585.	1.0	11
58	Enhanced spin-flip scattering by surface roughness in WS ₂ and MoS ₂ nanoribbons. <i>Physical Review B</i> , 2017, 95, .		11
59	Improving the ambipolar behavior of Schottky barrier carbon nanotube field effect transistors. , 0, , .		10
60	Optimization of Single-Gate Carbon-Nanotube Field-Effect Transistors. <i>IEEE Nanotechnology Magazine</i> , 2005, 4, 533-538.	1.1	9
61	An implementation of spin-orbit coupling for band structure calculations with Gaussian basis sets: Two-dimensional topological crystals of Sb and Bi. <i>Beilstein Journal of Nanotechnology</i> , 2018, 9, 1015-1023.	1.5	9
62	Dissipative transport in CNTFETs. <i>Journal of Computational Electronics</i> , 2007, 6, 321-324.	1.3	8
63	Analytical models of approximations for wave functions and energy dispersion in zigzag graphene nanoribbons. <i>Journal of Applied Physics</i> , 2012, 111, 074318.	1.1	8
64	The effect of electron-electron interaction induced dephasing on electronic transport in graphene nanoribbons. <i>Applied Physics Letters</i> , 2014, 105, 103502.	1.5	8
65	Vertical Tunneling Graphene Heterostructure-Based Transistor for Pressure Sensing. <i>IEEE Electron Device Letters</i> , 2015, 36, 280-282.	2.2	8
66	Spin relaxation in graphene nanoribbons in the presence of substrate surface roughness. <i>Journal of Applied Physics</i> , 2016, 120, .	1.1	8
67	An MoS ₂ -Based Piezoelectric FET: A Computational Study of Material Properties and Device Design. <i>IEEE Transactions on Electron Devices</i> , 2019, 66, 1997-2003.	1.6	8
68	The effect of device geometry on the static and dynamic response of carbon nanotube field effect transistors. , 0, , .		6
69	Improving DC and AC characteristics of ohmic contact carbon nanotube field effect transistors. , 0, , .		6
70	Transport modeling for nanoscale semiconductor devices. , 2010, , .		6
71	A Comprehensive Study of Transistors Based on Conductive Polymer Matrix Composites. <i>IEEE Transactions on Electron Devices</i> , 2015, 62, 1584-1589.	1.6	6
72	First principles study on structural, electronic and optical properties of HfS ₂ (1-x)Se _{2x} and ZrS ₂ (1-x)Se _{2x} ternary alloys. <i>RSC Advances</i> , 2022, 12, 14061-14068.	1.7	6

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73	Graphene-Based Antidots for Thermoelectric Applications. Journal of the Electrochemical Society, 2011, 158, K213.	1.3	5
74	The effect of oxide shell thickness on the structural, electronic, and optical properties of Si-SiO ₂ core-shell nano-crystals: A (time dependent) density functional theory study. Journal of Applied Physics, 2016, 119, 144302.	1.1	5
75	<i>Ab initio</i> effective deformation potentials of phosphorene and consistency checks. Journal of Physics Condensed Matter, 2018, 30, 225701.	0.7	5
76	Semiconducting Phase and Anisotropic Properties in Borophene via Chemical Surface Functionalization. Journal of Physical Chemistry C, 2020, 124, 5807-5816.	1.5	5
77	On the role of disorder on graphene and graphene nanoribbon-based vertical tunneling transistors. Journal of Applied Physics, 2014, 116, 184506.	1.1	4
78	Dielectrophoretic borophene tweezer: Sub-10 ⁻⁶ mV nano-particle trapping. Applied Surface Science, 2020, 527, 146859.	3.1	4
79	A Computational Study on the Electronic Properties of Armchair Graphene Nanoribbons Confined by Boron Nitride. Japanese Journal of Applied Physics, 2012, 51, 035101.	0.8	3
80	Optimization study of third harmonic generation in quantum cascade lasers. Optics Express, 2014, 22, 20607.	1.7	3
81	Geometry optimization for carbon nanotube transistors. Solid-State Electronics, 2007, 51, 1565-1571.	0.8	2
82	On the non-locality of the electron-photon self-energy: Application to carbon nanotube photo-detectors. , 2008, , .		2
83	The effect of inelastic phonon scattering on carbon nanotube-based transistor performance. Journal of Physics: Conference Series, 2008, 109, 012029.	0.3	2
84	Performance evaluation of graphene nanoribbon infrared photodetectors. , 2009, , .		2
85	A comprehensive study of nanoscale Field Effect Diodes. , 2011, , .		2
86	On the role of spatial position of bridged oxygen atoms as surface passivants on the ground-state gap and photo-absorption spectrum of silicon nano-crystals. Journal of Applied Physics, 2015, 118, .	1.1	2
87	Electronic transport in graphene nanoribbons with correlated line-edge roughness. Journal Physics D: Applied Physics, 2019, 52, 375102.	1.3	2
88	Geometry-dependence of the DC and AC Response of Ohmic Contact Carbon Nanotube Field Effect Transistors. , 2005, , .		1
89	Optimal Design for Carbon Nanotube Transistors. , 2006, , .		1
90	A Comprehensive Study of Carbon Nanotube Based Transistors: The Effects of Geometrical, Interface Barrier, and Scattering Parameters. , 2006, , .		1

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91	The role of inelastic electron-phonon interaction on the on-current and gate delay time of CNT FETs. , 2007, , .		1
92	Carbon Nanotube Based Transistors: A Computational Study. AIP Conference Proceedings, 2007, , .	0.3	1
93	Investigation of a MOSCAP using NEGF. , 2007, , .		1
94	Reduction of the dark-current in carbon nanotube photo-detectors. , 2008, , .		1
95	Modeling current transport in carbon nanotube transistors. , 2008, , .		1
96	Modeling demands for nanoscale devices. , 2010, , .		1
97	Thermoelectric power factor optimization in nanocomposites by energy filtering using NEGF. , 2015, , .		1
98	Performance Optimization and Instability Study in Ring Cavity Quantum Cascade Lasers. IEEE Journal of Quantum Electronics, 2015, 51, 1-7.	1.0	1
99	Low-Frequency Model for Hand-Calculations in Circuit Design With TMDC-Based Transistors. IEEE Transactions on Electron Devices, 2019, 66, 5011-5018.	1.6	1
100	Current induced forces in graphene nanoribbons. Journal of Applied Physics, 2019, 125, 144503.	1.1	1
101	First-principles Study of the Electron and Hole Mobility in Silicane. , 2019, , .		1
102	Hydrogenated graphene oxide (H-G-SiO ₂) Janus structure: experimental and computational study of strong piezo-electricity response. Journal Physics D: Applied Physics, 2020, 53, 175303.	1.3	1
103	Anisotropic electronic and plasmonic properties of 2H-TiS ₂ . Journal Physics D: Applied Physics, 2021, 54, 195304.	1.3	1
104	Formalism Application of the Non-Equilibrium Green's Function for the Numerical Analysis of Carbon Nanotube FETs. Journal of Computational and Theoretical Nanoscience, 2008, 5, 1128-1137.	0.4	1
105	Three-Dimensional Analysis of Schottky Barrier Carbon Nanotube Field Effect Transistors. , 2004, , 149-152.		1
106	The Effect of Electron-Phonon Interaction on the Static and Dynamic Response of CNTFETs. , 2006, , .		0
107	Optimizing the Performance of Carbon Nanotube Transistors. , 2006, , .		0
108	Current transport in carbon nanotube transistors. , 2008, , .		0

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109	Numerical study of carbon nanotube infra-red photo-detectors. , 2008, , .		0
110	Current transport in carbon nanotube transistors. , 2008, , .		0
111	On the role of line-edge roughness on the diffusion and localization in GNRs. , 2010, , .		0
112	Hydrogen-passivated graphene antidot structures for thermoelectric applications. , 2011, , .		0
113	An investigation of ZGNR-based transistors. , 2011, , .		0
114	Compact model for the electronic properties of edge-disordered graphene nanoribbons. , 2011, , .		0
115	An Investigation of the Geometrical Effects on the Thermal Conductivity of Graphene Antidot Lattices. ECS Transactions, 2011, 35, 185-192.	0.3	0
116	A Non-Equilibrium Green Functions Study of Energy-Filtering Thermoelectrics Including Scattering. Lecture Notes in Computer Science, 2015, , 301-308.	1.0	0
117	Strain engineering of single-layer MoS ₂ . , 2015, , .		0
118	Spin FET Based on Graphene Nanoribbon in the Presence of Surface Roughness. IEEE Transactions on Electron Devices, 2017, 64, 3437-3442.	1.6	0
119	Charge-Induced Two-Step Structural Phase Transition in the MoTe ₂ /WSe ₂ Hetero-Bilayer. Journal of Physical Chemistry C, 2021, 125, 15000-15011.	1.5	0
120	Investigation of Li ₃ P as Electrolyte and Lithium-ion conductor: An Ab- Initio Study. , 2021, , .		0
121	Selenium Doped Hafnium Disulfide Alloy for Visible Photodetection. , 2021, , .		0
122	The Effect of Optical Phonon Scattering on the On-Current and Gate Delay Time of CNT-FETs. , 2007, , 309-312.		0