

# Roger K Lake

## List of Publications by Year in descending order

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83  
papers

3,847  
citations

117571

34  
h-index

128225

60  
g-index

83  
all docs

83  
docs citations

83  
times ranked

6600  
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.	7.3	449
2	Electronic and thermoelectric properties of few-layer transition metal dichalcogenides. Journal of Chemical Physics, 2014, 140, 124710.	1.2	321
3	Thermal Percolation Threshold and Thermal Properties of Composites with High Loading of Graphene and Boron Nitride Fillers. ACS Applied Materials & Interfaces, 2018, 10, 37555-37565.	4.0	243
4	A charge-density-wave oscillator based on an integrated tantalum disulfide—boron nitride—graphene device operating at room temperature. Nature Nanotechnology, 2016, 11, 845-850.	15.6	170
5	Monolayer $\text{MoS}_2$ Transistors Beyond the Technology Road Map. IEEE Transactions on Electron Devices, 2012, 59, 3250-3254.	1.6	156
6	Charge Density Waves in Exfoliated Films of van der Waals Materials: Evolution of Raman Spectrum in $\text{TiSe}_2$ . Nano Letters, 2012, 12, 5941-5945.	4.5	154
7	Quantitative simulation of a resonant tunneling diode. Journal of Applied Physics, 1997, 81, 3207-3213.	1.1	139
8	Electronic and thermoelectric properties of van der Waals materials with ring-shaped valence bands. Journal of Applied Physics, 2015, 118, .	1.1	120
9	Fundamentals of lateral and vertical heterojunctions of atomically thin materials. Nanoscale, 2016, 8, 3870-3887.	2.8	117
10	Towards van der Waals Epitaxial Growth of GaAs on Si using a Graphene Buffer Layer. Advanced Functional Materials, 2014, 24, 6629-6638.	7.8	113
11	Direct Bandgap Transition in Many-Layer $\text{MoS}_2$ by Plasma-Induced Layer Decoupling. Advanced Materials, 2015, 27, 1573-1578.	11.1	102
12	Hot carrier-enhanced interlayer electron—hole pair multiplication in 2D semiconductor heterostructure photocells. Nature Nanotechnology, 2017, 12, 1134-1139.	15.6	74
13	Direct observation of confined acoustic phonon polarization branches in free-standing semiconductor nanowires. Nature Communications, 2016, 7, 13400.	5.8	71
14	Long-distance spin transport through a graphene quantum Hall antiferromagnet. Nature Physics, 2018, 14, 907-911.	6.5	70
15	Graphene-based non-Boolean logic circuits. Journal of Applied Physics, 2013, 114, .	1.1	60
16	Phonon and Thermal Properties of Quasi-Two-Dimensional $\text{FePS}_3$ and $\text{MnPS}_3$ Antiferromagnetic Semiconductors. ACS Nano, 2020, 14, 2424-2435.	7.3	58
17	Bias-Voltage Driven Switching of the Charge-Density-Wave and Normal Metallic Phases in $1\text{T-TaS}_2$ Thin-Film Devices. ACS Nano, 2019, 13, 7231-7240.	7.3	57
18	Transmission resonances and zeros in multiband models. Physical Review B, 1995, 52, 2754-2765.	1.1	56

#	ARTICLE	IF	CITATIONS
19	A brain-plausible neuromorphic on-the-fly learning system implemented with magnetic domain wall analog memristors. <i>Science Advances</i> , 2019, 5, eaau8170.	4.7	56
20	Effects of band-tails on the subthreshold characteristics of nanowire band-to-band tunneling transistors. <i>Journal of Applied Physics</i> , 2011, 110, .	1.1	54
21	Topological spin Hall effect resulting from magnetic skyrmions. <i>Physical Review B</i> , 2015, 92, .	1.1	53
22	Negative differential resistance in bilayer graphene nanoribbons. <i>Applied Physics Letters</i> , 2011, 98, .	1.5	52
23	Phase Engineering of 2D Tin Sulfides. <i>Small</i> , 2016, 12, 2998-3004.	5.2	51
24	Raman spectra of twisted CVD bilayer graphene. <i>Carbon</i> , 2017, 123, 302-306.	5.4	50
25	One-dimensional van der Waals quantum materials. <i>Materials Today</i> , 2022, 55, 74-91.	8.3	49
26	Performance of $n$ -Type InSb and InAs Nanowire Field-Effect Transistors. <i>IEEE Transactions on Electron Devices</i> , 2008, 55, 2939-2945.	1.6	48
27	Leakage and performance of zero-Schottky-barrier carbon nanotube transistors. <i>Journal of Applied Physics</i> , 2005, 98, 064307.	1.1	44
28	Material Selection for Minimizing Direct Tunneling in Nanowire Transistors. <i>IEEE Transactions on Electron Devices</i> , 2012, 59, 2064-2069.	1.6	41
29	Permanent Electric Dipole Moments of Carboxyamides in Condensed Media: What Are the Limitations of Theory and Experiment?. <i>Journal of Physical Chemistry B</i> , 2011, 115, 9473-9490.	1.2	39
30	Skyrmion creation and annihilation by spin waves. <i>Applied Physics Letters</i> , 2015, 107, .	1.5	39
31	Commensurate lattice constant dependent thermal conductivity of misoriented bilayer graphene. <i>Carbon</i> , 2018, 138, 451-457.	5.4	38
32	Conductance switching in diarylethenes bridging carbon nanotubes. <i>Journal of Chemical Physics</i> , 2011, 134, 024524.	1.2	37
33	Electron transport through a conjugated molecule with carbon nanotube leads. <i>Physical Review B</i> , 2007, 76, .	1.1	35
34	Acoustic phonon spectrum and thermal transport in nanoporous alumina arrays. <i>Applied Physics Letters</i> , 2015, 107, .	1.5	35
35	Drive Currents and Leakage Currents in InSb and InAs Nanowire and Carbon Nanotube Band-to-Band Tunneling FETs. <i>IEEE Electron Device Letters</i> , 2009, 30, 1257-1259.	2.2	31
36	The coherent interlayer resistance of a single, rotated interface between two stacks of AB graphite. <i>Applied Physics Letters</i> , 2013, 103, 243114.	1.5	25

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37	Theoretical and experimental study of highly textured GaAs on silicon using a graphene buffer layer. Journal of Crystal Growth, 2015, 425, 268-273.	0.7	25
38	Diameter dependent performance of high-speed, low-power InAs nanowire field-effect transistors. Journal of Applied Physics, 2010, 107, 014502.	1.1	24
39	Uniform Benchmarking of Low-Voltage van der Waals FETs. IEEE Journal on Exploratory Solid-State Computational Devices and Circuits, 2016, 2, 28-35.	1.1	24
40	The Quantum and Classical Capacitance Limits of InSb and InAs Nanowire FETs. IEEE Transactions on Electron Devices, 2009, 56, 2215-2223.	1.6	23
41	Theoretical design of bioinspired macromolecular electrets based on anthranilamide derivatives. Biotechnology Progress, 2009, 25, 915-922.	1.3	23
42	Two step growth phenomena of molybdenum disulfide-tungsten disulfide heterostructures. Chemical Communications, 2015, 51, 11213-11216.	2.2	21
43	Conductance of a conjugated molecule with carbon nanotube contacts. Physical Review B, 2009, 80, .	1.1	20
44	Growth Dynamics of Millimeter-Sized Single-Crystal Hexagonal Boron Nitride Monolayers on Secondary Recrystallized Ni (100) Substrates. Advanced Materials Interfaces, 2019, 6, 1901198.	1.9	20
45	Strain control of the Néel vector in Mn-based antiferromagnets. Applied Physics Letters, 2019, 114, .	1.5	20
46	Effect of Random, Discrete Source Dopant Distributions on Nanowire Tunnel FETs. IEEE Transactions on Electron Devices, 2014, 61, 2208-2214.	1.6	19
47	Shape dependent resonant modes of skyrmions in magnetic nanodisks. Journal of Magnetism and Magnetic Materials, 2018, 455, 9-13.	1.0	19
48	Room-Temperature Electrodeposition of Aluminum via Manipulating Coordination Structure in AlCl <sub>3</sub> Solutions. Journal of Physical Chemistry Letters, 2020, 11, 1589-1593.	2.1	18
49	Carbon nanotube - molecular resonant tunneling diode. Physica Status Solidi (A) Applications and Materials Science, 2006, 203, R5-R7.	0.8	17
50	Doping, Tunnel Barriers, and Cold Carriers in InAs and InSb Nanowire Tunnel Transistors. IEEE Transactions on Electron Devices, 2012, 59, 2996-3001.	1.6	17
51	Current modulation by voltage control of the quantum phase in crossed graphene nanoribbons. Physical Review B, 2012, 86, .	1.1	16
52	High-frequency current oscillations in charge-density-wave 1T-TaS <sub>2</sub> devices: Revisiting the "narrow band noise" concept. Applied Physics Letters, 2020, 116, .	1.5	15
53	Modeling and performance analysis of GaN nanowire field-effect transistors and band-to-band tunneling field-effect transistors. Journal of Applied Physics, 2010, 108, 104503.	1.1	13
54	Core size dependence of the confinement energies, barrier heights, and hole lifetimes in Ge-core/Si-shell nanocrystals. Journal of Applied Physics, 2011, 110, .	1.1	13

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55	Hybrid Graphene Nanoribbon-CMOS tunneling volatile memory fabric. , 2011, , .		12
56	Strong Circularly Polarized Photoluminescence from Multilayer MoS <sub>2</sub> Through Plasma Driven Direct-Gap Transition. ACS Photonics, 2016, 3, 310-314.	3.2	12
57	Interlayer transport through a graphene/rotated boron nitride/graphene heterostructure. Physical Review B, 2017, 95, .	1.1	12
58	Interlayer resistance of misoriented MoS <sub>2</sub> . Physical Chemistry Chemical Physics, 2017, 19, 10406-10412.	1.3	12
59	Phononic and photonic properties of shape-engineered silicon nanoscale pillar arrays. Nanotechnology, 2020, 31, 30LT01.	1.3	12
60	Electronic properties of carbon nanotubes calculated from density functional theory and the empirical $\sigma$ -bond model. Journal of Computational Electronics, 2007, 6, 395-400.	1.3	11
61	$\text{TiSi}_2$ Nanocrystal Metal Oxide Semiconductor Field Effect Transistor Memory. IEEE Nanotechnology Magazine, 2011, 10, 499-505.	1.1	10
62	Metallic <i>vs.</i> semiconducting properties of quasi-one-dimensional tantalum selenide van der Waals nanoribbons. Nanoscale, 2022, 14, 6133-6143.	2.8	10
63	Performance analysis of InP nanowire band-to-band tunneling field-effect transistors. Applied Physics Letters, 2009, 95, 073504.	1.5	9
64	Spin-Josephson effects in exchange coupled antiferromagnetic insulators. Physical Review B, 2016, 94, .	1.1	9
65	Nanoscale phononic interconnects in THz frequencies. Physical Chemistry Chemical Physics, 2014, 16, 23355-23364.	1.3	8
66	Electron transport through antiferromagnetic spin textures and skyrmions in a magnetic tunnel junction. Physical Review B, 2020, 102, .	1.1	7
67	Growth of High-Quality Hexagonal Boron Nitride Single-Layer Films on Carburized Ni Substrates for Metal-Insulator-Metal Tunneling Devices. ACS Applied Materials & Interfaces, 2020, 12, 35318-35327.	4.0	7
68	Effects of filling, strain, and electric field on the Néel vector in antiferromagnetic CrSb. Physical Review B, 2020, 102, .	1.1	7
69	Self-Assembled Carbon Nanotubes for Electronic Circuit and Device Applications. Journal of Nanoelectronics and Optoelectronics, 2006, 1, 74-81.	0.1	7
70	Tunneling spectroscopy of chiral states in ultra-thin topological insulators. Journal of Applied Physics, 2013, 113, 063707.	1.1	6
71	Vibronic Exciton-Phonon States in Stack-Engineered van der Waals Heterojunction Photodiodes. Nano Letters, 2022, 22, 5751-5758.	4.5	6
72	The quantum capacitance limit of high-speed, low-power InSb nanowire field effect transistors. , 2008, , .		5

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73	Electronic states of Ge/Si nanocrystals with crescent-shaped Ge-cores. Journal of Applied Physics, 2012, 112, .	1.1	5
74	Interlayer magnetoconductance of misoriented bilayer graphene ribbons. Journal of Applied Physics, 2013, 114, .	1.1	5
75	Multi-state current switching by voltage controlled coupling of crossed graphene nanoribbons. Journal of Applied Physics, 2013, 114, 153710.	1.1	5
76	Effect of strain on the electronic and optical properties of Ge/Si dome shaped nanocrystals. Physical Chemistry Chemical Physics, 2015, 17, 2484-2493.	1.3	5
77	Synthetic antiferromagnet-based spin Josephson oscillator. Applied Physics Letters, 2020, 116, 132409.	1.5	5
78	Carrier leakage in Ge/Si core-shell nanocrystals for lasers: core size and strain effects. Proceedings of SPIE, 2011, , .	0.8	3
79	Interface effects in tunneling models with identical real and complex dispersions. Physical Review B, 1999, 59, 7316-7319.	1.1	1
80	Effects of heavily doped source on the subthreshold characteristics of nanowire tunneling transistors. , 2011, , .		1
81	Tuning Spin Transport in a Graphene Antiferromagnetic Insulator. Physical Review Applied, 2022, 18, .	1.5	1
82	High-Speed and Low-Power Performance of n-type InSb/InP and InAs/InP Core/Shell Nanowire Field Effect Transistors for CMOS Logic Applications. Materials Research Society Symposia Proceedings, 2009, 1178, 26.	0.1	0
83	Modeling and performance analysis of high-speed, high-power GaN nanowire FETs. , 2009, , .		0