Quantized thermal transport across contacts of rough s

Nature Materials

12, 59-65

DOI: 10.1038/nmat3460

Citation Report

#	Article	IF	Citations
1	Thermoelectric imaging of structural disorder in epitaxial graphene. Nature Materials, 2013, 12, 913-918.	27.5	55
2	Thermal mapping of a scanning thermal microscopy tip. Ultramicroscopy, 2013, 133, 80-87.	1.9	10
3	Single hot contacts. Nature Materials, 2013, 12, 9-11.	27.5	7
4	Strained relations. Nature Materials, 2013, 12, 11-12.	27.5	31
5	Probing and tuning frictional aging at the nanoscale. Scientific Reports, 2013, 3, 1896.	3.3	16
6	Heat dissipation and thermometry in nanosystems: When interfaces dominate. , 2013, , .		3
7	A Reexamination of Phonon Transport Through a Nanoscale Point Contact in Vacuum. Journal of Heat Transfer, 2014, 136, .	2.1	26
8	Thermal interface resistance: cross-over from nanoscale to macroscale. Journal of Physics Condensed Matter, 2014, 26, 015009.	1.8	8
9	Ballistic thermal transport in a cylindrical semiconductor nanowire modulated with bridge contacts. Journal of Applied Physics, 2014, 116, 144304.	2.5	6
10	Thermal boundary conductance across rough interfaces probed by molecular dynamics. Physical Review B, 2014, 89, .	3.2	76
11	Seebeck Effect at the Atomic Scale. Physical Review Letters, 2014, 112, 136601.	7.8	32
12	Nanoscale thermal transport. II. 2003â€“2012. Applied Physics Reviews, 2014, 1, 011305.	11.3	1,277
13	Thermal Conductivity of Mechanically Joined Semiconducting/Metal Nanomembrane Superlattices. Nano Letters, 2014, 14, 2387-2393.	9.1	20
14	Modelling, simulation and optimization for a SThm nanoprobe. , 2014, , .		4
15	Heat transfer in heterogeneous nanostructures can be described by a simple chain model. Physical Chemistry Chemical Physics, 2014, 16, 16914-16918.	2.8	5
16	Frictional Dissipation in a Polymer Bilayer System. Langmuir, 2014, 30, 1557-1565.	3.5	8
17	Friction through reversible jumps of surface atoms. Journal of Physics Condensed Matter, 2014, 26, 315005.	1.8	3
18	Topography-free sample for thermal spatial response measurement of scanning thermal microscopy. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2015, 33, .	1.2	10

#	Article	IF	Citations
19	Heat transfer at nanoscale contacts investigated with scanning thermal microscopy. Applied Physics Letters, 2015, 107, .	3.3	32
20	Scanning thermal microscopy: A review. Physica Status Solidi (A) Applications and Materials Science, 2015, 212, 477-494.	1.8	201
21	Thermal boundary resistance at Au/Ge/Ge and Au/Si/Ge interfaces. RSC Advances, 2015, 5, 49703-49707.	3.6	15
22	Scanning Thermal Microscopy (SThM). Advances in Imaging and Electron Physics, 2015, , 177-221.	0.2	19
24	Towards a quantitative methodology for measuring micro and nanoscale transition properties for heat transfer modelling in thermal devices and materials. , 2015, , .		1
25	Fundamentals of Friction and Damage. , 2015, , 37-95.		0
26	Ballistic thermal transport by phonons in three dimensional periodic nanostructures. Journal of Physics Condensed Matter, 2015, 27, 095303.	1.8	6
27	Atomistic simulation of the effect of roughness on nanoscale wear. Computational Materials Science, 2015, 102, 208-212.	3.0	31
28	Scanning Probe Microscopy for Thermal Transport Measurements. Nanoscale and Microscale Thermophysical Engineering, 2015, 19, 279-302.	2.6	15
29	Temperature-dependent capillary forces at nano-contacts for estimating the heat conduction through a water meniscus. Nanotechnology, 2015, 26, 355401.	2.6	33
30	Tunability of acoustic phonon transmission and thermal conductance in three dimensional quasi-periodically stubbed waveguides. Journal of Applied Physics, 2015, 117, .	2.5	13
31	Water in Inhomogeneous Nanoconfinement: Coexistence of Multilayered Liquid and Transition to Ice Nanoribbons. ACS Nano, 2015, 9, 9877-9884.	14.6	54
32	Nanoscale thermometry by scanning thermal microscopy. Review of Scientific Instruments, 2016, 87, 074902.	1.3	39
33	Phononic thermal resistance due to a finite periodic array of nano-scatterers. Journal of Applied Physics, 2016, 120, 044305.	2.5	1
34	Heat transport in low-dimensional materials: A review and perspective. Theoretical and Applied Mechanics Letters, 2016, 6, 113-121.	2.8	39
35	Energy-efficient miniature-scale heat pumping based on shape memory alloys. Smart Materials and Structures, 2016, 25, 085037.	3.5	92
36	Quantification of probeâ€“sample interactions of a scanning thermal microscope using a nanofabricated calibration sample having programmable size. Nanotechnology, 2016, 27, 325503.	2.6	20
37	Nonequilibrium processes from generalized Langevin equations: Realistic nanoscale systems connected to two thermal baths. Physical Review B, 2016, 93, .	3.2	14

#	Article	IF	Citations
38	Thermal conductance of carbon nanotube contacts: Molecular dynamics simulations and general description of the contact conductance. Physical Review B, 2016, 94, .	3.2	31
39	Quantitative characterization of surface topography using spectral analysis. Surface Topography: Metrology and Properties, 2017, 5, 013001.	1.6	296
40	Quantized thermal transport in single-atom junctions. Science, 2017, 355, 1192-1195.	12.6	165
41	Modification of thermal conductivity and thermal boundary resistance of amorphous Si thin films by Al doping. RSC Advances, 2017, 7, 7901-7905.	3.6	11
42	Thermal transport contributed by the torsional phonons in cylindrical nanowires: Role of evanescent modes. Physics Letters, Section A: General, Atomic and Solid State Physics, 2017, 381, 1498-1503.	2.1	0
43	Heat transport through atomic contacts. Nature Nanotechnology, 2017, 12, 430-433.	31.5	95
44	Improved spatial resolution for spot sampling in thermal desorption atomic force microscopy â€“ mass spectrometry via rapid heating functions. Nanoscale, 2017, 9, 5708-5717.	5.6	9
45	Influence of probe-sample temperature difference on thermal mapping contrast in scanning thermal microscopy imaging. Journal of Applied Physics, 2017, 121, 114502.	2.5	7
46	Thickness-dependent thermal properties of amorphous insulating thin films measured by photoreflectance microscopy. Thin Solid Films, 2017, 642, 157-162.	1.8	13
47	Measuring and Understanding Contact Area at the Nanoscale: A Review. Applied Mechanics Reviews, 2017, 69, .	10.1	73
48	Thermal conductance of cylindrical semiconductor nanowires modulated with phonon cavity. Physics Letters, Section A: General, Atomic and Solid State Physics, 2017, 381, 3659-3663.	2.1	0
49	The influence of statistical properties of Fourier coefficients on random Gaussian surfaces. Scientific Reports, 2017, 7, 1961.	3.3	8
50	Dimension- and shape-dependent thermal transport in nano-patterned thin films investigated by scanning thermal microscopy. Nanotechnology, 2017, 28, 485706.	2.6	6
51	On the debris-level origins of adhesive wear. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 7935-7940.	7.1	77
52	Effect of air confinement on thermal contact resistance in nanoscale heat transfer. Journal Physics D: Applied Physics, 2018, 51, 125301.	2.8	7
53	Contact laws between nanoparticles: the elasticity of a nanopowder. Nanoscale, 2018, 10, 2154-2161.	5.6	10
54	A Theoretical Review on Interfacial Thermal Transport at the Nanoscale. Small, 2018, 14, 1702769.	10.0	83
55	Acoustic Mismatch Model for Thermal Contact Conductance of Van Der Waals Contacts Under Static Force. Nanoscale and Microscale Thermophysical Engineering, 2018, 22, 1-5.	2.6	8

#	Article	IF	Citations
56	Thermal nanometrology using piezoresistive SThM probes with metallic tips. Ultramicroscopy, 2018, 193, 104-110.	1.9	2
57	Combining TEM, AFM, and Profilometry for Quantitative Topography Characterization Across All Scales. ACS Applied Materials & Interfaces, 2018, 10, 29169-29178.	8.0	69
58	Dynamic interfacial mechanicalâ€“thermal characteristics of atomically thin two-dimensional crystals. Nanoscale, 2018, 10, 13548-13554.	5.6	17
59	Exciton Gas Transport through Nanoconstrictions. Nano Letters, 2019, 19, 5373-5379.	9.1	2
60	Comparison of thermal conductance of graphene/SiO₂ and graphene/Au interfaces based on Raman optothermal method. Materials Research Express, 2019, 6, 115603.	1.6	3
61	Atomistic Insights into Cu Chemical Mechanical Polishing Mechanism in Aqueous Hydrogen Peroxide and Glycine: ReaxFF Reactive Molecular Dynamics Simulations. Journal of Physical Chemistry C, 2019, 123, 26467-26474.	3.1	31
62	Measurement of electrical contact resistance at nanoscale gold-graphite interfaces. Applied Physics Letters, 2019, 115, .	3.3	11
63	Quantification of atomic force microscopy tip and sample thermal contact. Review of Scientific Instruments, 2019, 90, 095003.	1.3	6
64	Alumina-Coated Cu@Reduced Graphene Oxide Microspheres as Enhanced Antioxidative and Electrically Insulating Fillers for Thermal Interface Materials with High Thermal Conductivity. ACS Applied Electronic Materials, 2019, 1, 1330-1335.	4.3	17
65	Modeling Atomic-Scale Electrical Contact Quality Across Two-Dimensional Interfaces. Nano Letters, 2019, 19, 3654-3662.	9.1	21
66	Fluorescent scanning thermal microscope based on a Blu-ray optical head to measure thermal diffusivity of radioactive samples. Review of Scientific Instruments, 2019, 90, 024903.	1.3	0
67	Correlation of shear forces and heat conductance in nanoscale junctions. Physical Review B, 2019, 100, .	3.2	3
68	Quantitative measurement of contact area and electron transport across platinum nanocontacts for scanning probe microscopy and electrical nanodevices. Nanotechnology, 2019, 30, 045705.	2.6	14
69	A Review on Principles and Applications of Scanning Thermal Microscopy (SThM). Advanced Functional Materials, 2020, 30, 1900892.	14.9	98
70	Monolithically fabricated sample for the calibration of the tip-sample thermal conductance in scanning thermal microscopy. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2020, 38, 043202.	1.2	0
72	Thermal conductance enhanced via inelastic phonon transport by atomic vacancies at Cu/Si interfaces. Physical Review B, 2020, 102, .	3.2	19
73	Thermal boundary resistance of direct van der Waals bonded GaN-on-diamond. Semiconductor Science and Technology, 2020, 35, 095021.	2.0	21
75	The emergence of small-scale self-affine surface roughness from deformation. Science Advances, 2020, 6, eaax0847.	10.3	48

#	Article	IF	Citations
76	Roughness and Scaling Properties of Oxide Glass Surfaces at the Nanoscale. Physical Review Letters, 2021, 126, 066101.	7.8	9
77	Frequency domain analysis of 3Ï‰-scanning thermal microscope probeâ€"Application to tip/surface thermal interface measurements in vacuum environment. Journal of Applied Physics, 2021, 129, .	2.5	5
78	Fracture analyses of surface asperities during sliding contact. Tribology International, 2021, 159, 106939.	5.9	5
79	Highâ€Temperature Skin Softening Materials Overcoming the Tradeâ€Off between Thermal Conductivity and Thermal Contact Resistance. Small, 2021, 17, e2102128.	10.0	14
80	Enhanced Thermal Transport across Selfâ€Interfacing van der Waals Contacts in Flexible Thermal Devices. Advanced Functional Materials, 2021, 31, 2107023.	14.9	23
81	Mechanical evaluation of bidirectional surface deformation in contact between nanometer-sized carbon particle and copper substrate: A molecular dynamics approach. Surfaces and Interfaces, 2021, 26, 101388.	3.0	4
82	Optimization of interfacial thermal transport in Si/Ge heterostructure driven by machine learning. International Journal of Heat and Mass Transfer, 2022, 182, 122014.	4.8	17
83	Effect of Capillary Condensation on Nanoscale Friction. Nanoscience and Technology, 2015, , 313-330.	1.5	3
84	Elastocaloric cooling: roadmap towards successful implementation in the built environment. AIMS Materials Science, 2019, 6, 1135-1152.	1.4	10
85	Impact of roughness on heat conduction involving nanocontacts. Applied Physics Letters, 2021, 119, .	3.3	5
86	Background Review. Springer Theses, 2019, , 11-31.	0.1	0
87	The coalescence of Cu nanoparticles with different interfacial lattice structures: A molecular dynamics study. Modern Physics Letters B, 2021, 35, 2150149.	1.9	2
88	Molecular dynamics simulation of evaporation of R32 on the solid surface. Modern Physics Letters B, 2021, 35, 2150133.	1.9	1
89	Effect of interfacial roughness on thermal boundary conductance: An elastic wave model using the Kirchhoff approximation. International Journal of Mechanical Sciences, 2022, 218, 106993.	6.7	4
90	Monte-Carlo evaluation of bias and variance in Hurst exponents computed from power spectral analysis of atomic force microscopy topographic images. Applied Surface Science, 2022, 581, 152092.	6.1	2
92	Nanofilm. , 2022, , 161-204.		0
93	Quantum phonon transport through channels and moleculesâ€"A Perspective. Applied Physics Letters, 2022, 120, .	3.3	11
94	Thermal scanning probe lithography. Nature Reviews Methods Primers, 2022, 2, .	21.2	19

#	Article	IF	Citations
95	Nonequilibrium plastic roughening of metallic glasses yields self-affine topographies with strain-rate and temperature-dependent scaling exponents. Physical Review Materials, 2022, 6, .	2.4	2
96	A Comprehensive Review for Micro/Nanoscale Thermal Mapping Technology Based on Scanning Thermal Microscopy. Journal of Thermal Science, 2022, 31, 976-1007.	1.9	12
97	Advanced atomic force microscopies and their applications in two-dimensional materials: a review. Materials Futures, 2022, 1, 032302.	8.4	16
98	Contact.engineeringâ€"Create, analyze and publish digital surface twins from topography measurements across many scales. Surface Topography: Metrology and Properties, 2022, 10, 035032.	1.6	7
99	On the nature and propagation of errors in roughness parameters obtained from spectral analysis of atomic force microscopy topographic images. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2022, 40, 053204.	2.1	1
100	Dependence of thermoelectric effects in molecular junctions on the topography of the bottom electrodes. Journal of Materials Chemistry A, 2022, 10, 23304-23313.	10.3	6
101	Rational design of graphene structures for preparing high-performance thermal interface materials: A mini review. Science China: Physics, Mechanics and Astronomy, 2022, 65, .	5.1	3
102	Role of acoustic phonon transport in near- to asperity-contact heat transfer. Physical Review B, 2022, 106, .	3.2	2
103	Elastic contact of random surfaces with fractal and Hurst effects. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2022, 478, .	2.1	3
104	Molecular dynamics study on thermal conductance between a nanotip and a substrate under vertical forces and horizontal sliding. Physical Chemistry Chemical Physics, 2023, 25, 5510-5519.	2.8	0
105	Influence of Post Processing on Thermal Conductivity of ITO Thin Films. Materials, 2023, 16, 362.	2.9	2
106	Surface topography as a material parameter. MRS Bulletin, 2022, 47, 1205-1210.	3.5	9
107	Molecular design of a highly matched and bonded interface achieves enhanced thermal boundary conductance. Nanoscale, 2023, 15, 8706-8715.	5.6	3
108	Modulation of interface modes for resonance-induced enhancement of the interfacial thermal conductance in pillar-based Si/Ge nanowires. Physical Review B, 2023, 108, .	3.2	1
109	Surface roughness characterization using representative elementary area (REA) analysis. Scientific Reports, 2024, 14, .	3.3	0
110	An experimental and numerical study on adhesion force at the nanoscale. Nanoscale Advances, 2024, 6, 2013-2025.	4.6	0