Karl Joulain

List of Publications by Year
in descending order

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118	7,837	66343 42	48315 88
papers	citations	h-index	g-index
119	119	119	3825
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Coherent emission of light by thermal sources. Nature, 2002, 416, 61-64.	27.8	1,179
2	Surface electromagnetic waves thermally excited: Radiative heat transfer, coherence properties and Casimir forces revisited in the near field. Surface Science Reports, 2005, 57, 59-112.	7.2	787
3	Thermal radiation scanning tunnelling microscopy. Nature, 2006, 444, 740-743.	27.8	449
4	Definition and measurement of the local density of electromagnetic states close to an interface. Physical Review B, 2003, 68, .	3.2	318
5	ENHANCED RADIATIVE HEAT TRANSFER AT NANOMETRIC DISTANCES. Microscale Thermophysical Engineering, 2002, 6, 209-222.	1.2	307
6	Near-Field Spectral Effects due to Electromagnetic Surface Excitations. Physical Review Letters, 2000, 85, 1548-1551.	7.8	291
7	Nanoscale radiative heat transfer between a small particle and a plane surface. Applied Physics Letters, 2001, 78, 2931-2933.	3.3	211
8	Heat Transfer between Two Nanoparticles Through Near Field Interaction. Physical Review Letters, 2005, 94, 085901.	7.8	204
9	Monte Carlo transient phonon transport in silicon and germanium at nanoscales. Physical Review B, 2005, 72, .	3.2	203
10	Many-Body Radiative Heat Transfer Theory. Physical Review Letters, 2011, 107, 114301.	7.8	194
11	Quantum Thermal Transistor. Physical Review Letters, 2016, 116, 200601.	7.8	183
12	Nanoscale heat flux between nanoporous materials. Optics Express, 2011, 19, A1088.	3.4	169
13	Effects of spatial dispersion in near-field radiative heat transfer between two parallel metallic surfaces. Physical Review B, 2008, 77, .	3.2	159
14	Coherent spontaneous emission of light by thermal sources. Physical Review B, 2004, 69, .	3.2	144
15	Radiation forces on small particles in thermal near fields. Journal of Optics, 2002, 4, S109-S114.	1.5	130
16	Phonon polaritons enhance near-field thermal transfer across the phase transition of VO<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mn>2</mml:mn></mml:msub></mml:math>. Physical Review B, 2011, 84, .	3.2	123
17	Blackbody Spectrum Revisited in the Near Field. Physical Review Letters, 2013, 110, 146103.	7.8	117
18	Spatial coherence of thermal near fields. Optics Communications, 2000, 186, 57-67.	2.1	103

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19	Fundamental limits for noncontact transfers between two bodies. Physical Review B, 2010, 82, .	3.2	101
20	Monte Carlo simulation of phonon confinement in silicon nanostructures: Application to the determination of the thermal conductivity of silicon nanowires. Applied Physics Letters, 2006, 89, 103104.	3.3	100
21	Casimir force between designed materials: What is possible and what not. Europhysics Letters, 2005, 72, 929-935.	2.0	98
22	Colored Radiative Cooling Coatings with Nanoparticles. ACS Photonics, 2020, 7, 1312-1322.	6.6	91
23	Coupled surface polaritons and the Casimir force. Physical Review A, 2004, 69, .	2.5	89
24	Near-field heat transfer mediated by surface wave hybridization between two films. Journal of Applied Physics, 2009, 106, .	2.5	85
25	Fast nanoscale heat-flux modulation with phase-change materials. Physical Review B, 2011, 83, .	3.2	81
26	Engineering infrared emission properties of silicon in the near field and the far field. Optics Communications, 2004, 237, 379-388.	2.1	76
27	Heat Superdiffusion in Plasmonic Nanostructure Networks. Physical Review Letters, 2013, 111, 174301.	7.8	73
28	Noncontact heat transfer between two metamaterials. Physical Review B, 2010, 81, .	3.2	72
29	Modulation and amplification of radiative far field heat transfer: Towards a simple radiative thermal transistor. Applied Physics Letters, 2015, 106, .	3.3	66
30	Radiative cooling by tailoring surfaces with microstructures: Association of a grating and a multi-layer structure. Journal of Quantitative Spectroscopy and Radiative Transfer, 2018, 221, 155-163.	2.3	66
31	Radiative thermal rectification between SiC and SiO_2. Optics Express, 2015, 23, A1388.	3.4	65
32	Heat transport through plasmonic interactions in closely spaced metallic nanoparticle chains. Physical Review B, 2008, 77, .	3.2	62
33	Quantum thermal diode based on two interacting spinlike systems under different excitations. Physical Review E, 2017, 95, 022128.	2.1	59
34	Electromagnetic field correlations near a surface with a nonlocal optical response. Applied Physics B: Lasers and Optics, 2006, 84, 61-68.	2.2	55
35	Radiative Thermal Memristor. Physical Review Letters, 2019, 123, 025901.	7.8	54
36	Radiative thermal rectification using superconducting materials. Applied Physics Letters, 2014, 104, .	3.3	52

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37	Simple far-field radiative thermal rectifier using Fabryâ€"Perot cavities based infrared selective emitters. Applied Optics, 2014, 53, 3479.	1.8	50
38	Modeling of the electrical conductivity, thermal conductivity, and specific heat capacity of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi>VO</mml:mi><mml:mn>2</mml:mn></mml:msub></mml Physical Review B, 2018, 98, .	3.2	49
39	Heat transfer between a nano-tip and a surface. Nanotechnology, 2006, 17, 2978-2981.	2.6	48
40	Surface Bloch waves mediated heat transfer between two photonic crystals. Applied Physics Letters, 2010, 96, .	3.3	47
41	Strong tipâ€"sample coupling in thermal radiation scanning tunneling microscopy. Journal of Quantitative Spectroscopy and Radiative Transfer, 2014, 136, 1-15.	2.3	46
42	Transistorlike Device for Heating and Cooling Based on the Thermal Hysteresis of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mi>VO</mml:mi></mml:mrow><mml:mrow><mml:mn>2</mml:mn></m Physical Review Applied, 2016, 6, .	3.8	46
43	Thermal hysteresis measurement of the VO2 dielectric function for its metal-insulator transition by visible-IR ellipsometry. Journal of Applied Physics, 2018, 124, .	2.5	40
44	Vacuum-induced phonon transfer between two solid dielectric materials: Illustrating the case of Casimir force coupling. Physical Review B, 2014, 90, .	3.2	38
45	Selective emitters design and optimization for thermophotovoltaic applications. Journal of Applied Physics, 2012, 111, .	2.5	36
46	Thermal hysteresis measurement of the VO2 emissivity and its application in thermal rectification. Scientific Reports, 2018, 8, 8479.	3.3	36
47	Conductive thermal diode based on the thermal hysteresis of VO2 and nitinol. Journal of Applied Physics, 2018, 123, .	2.5	34
48	Thermophysical characterisation of VO2 thin films hysteresis and its application in thermal rectification. Scientific Reports, 2019, 9, 8728.	3.3	34
49	Measurement of the hysteretic thermal properties of W-doped and undoped nanocrystalline powders of VO2. Scientific Reports, 2019, 9, 14687.	3.3	34
50	Prediction of the thermal conductivity anisotropy of Si nanofilms. Results of several numerical methods. International Journal of Thermal Sciences, 2009, 48, 1467-1476.	4.9	30
51	Optimized thermal amplification in a radiative transistor. Journal of Applied Physics, 2016, 119, .	2.5	29
52	Modeling semiconductor nanostructures thermal properties: The dispersion role. Journal of Applied Physics, 2009, 105, 073516.	2.5	28
53	Control of radiative processes for energy conversion and harvesting. Optics Express, 2015, 23, A1533.	3.4	28
54	Daytime radiative cooling with silica fiber network. Solar Energy Materials and Solar Cells, 2020, 206, 110320.	6.2	28

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55	Tailoring the local density of states of nonradiative field at the surface of nanolayered materials. Applied Physics Letters, 2009, 94, 153117.	3.3	27
56	Thermal energy transport in a surface phonon-polariton crystal. Physical Review B, 2016, 93, .	3.2	27
57	Near-field heat transfer: A radiative interpretation of thermal conduction. Journal of Quantitative Spectroscopy and Radiative Transfer, 2008, 109, 294-304.	2.3	25
58	Photonic thermal diode based on superconductors. Journal of Applied Physics, 2017, 122, .	2.5	25
59	Microstructured surfaces for colored and non-colored sky radiative cooling. Optics Express, 2020, 28, 29703.	3.4	24
60	Coherent thermal emission by microstructured waveguides. Journal of Quantitative Spectroscopy and Radiative Transfer, 2007, 104, 208-216.	2.3	23
61	Far field coherent thermal emission from a bilayer structure. Journal of Applied Physics, 2011, 109, 034315.	2.5	22
62	VO2-based radiative thermal transistor with a semi-transparent base. Journal of Quantitative Spectroscopy and Radiative Transfer, 2018, 210, 52-61.	2.3	22
63	Near field radiative heat transfer between two nonlocal dielectrics. Journal of Quantitative Spectroscopy and Radiative Transfer, 2015, 154, 55-62.	2.3	21
64	Dynamical heat transport amplification in a far-field thermal transistor of VO2 excited with a laser of modulated intensity. Journal of Applied Physics, 2016, 119, .	2.5	21
65	Mean Evolution of Wrinkle Wavelengths in a Model of Weakly-Turbulent Premixed Flame. Combustion Science and Technology, 1994, 103, 265-282.	2.3	19
66	Resonant infrared transmission through SiC films. Optics Letters, 2004, 29, 2178.	3.3	19
67	Dynamical thermal conductivity of bulk semiconductor crystals. Journal of Applied Physics, 2012, 112, 083515.	2.5	19
68	Conductive thermal diode based on two phase-change materials. International Journal of Thermal Sciences, 2020, 153, 106393.	4.9	16
69	VO ₂ Substrate Effect on the Thermal Rectification of a Far-Field Radiative Diode. Physical Review Applied, 2020, 14, .	3.8	15
70	The near field correlation spectrum of a metallic film. Applied Physics B: Lasers and Optics, 2008, 93, 151-158.	2.2	14
71	Temperature dependence of a microstructured SiC coherent thermal source. Journal of Quantitative Spectroscopy and Radiative Transfer, 2016, 180, 29-38.	2.3	14
72	Optimization of the rectification factor of radiative thermal diodes based on two phase-change materials. International Journal of Heat and Mass Transfer, 2020, 154, 119739.	4.8	12

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73	Thermal Transistor Effect in Quantum Systems. Physical Review Applied, 2021, 16, .	3.8	12
74	Coalescence Problems in the Theory of Expanding Wrinkled Premixed Flames. Combustion Science and Technology, 1996, 112, 271-299.	2.3	11
75	Role of confined Bloch waves in the near field heat transfer between two photonic crystals. Journal of Quantitative Spectroscopy and Radiative Transfer, 2011, 112, 1314-1322.	2.3	11
76	Maximal near-field radiative heat transfer between two plates. EPJ Applied Physics, 2013, 63, 30902.	0.7	11
77	Evolution of the Thermal Conductivity of Sintered Silver Joints with their Porosity Predicted by the Finite Element Analysis of Real 3D Microstructures. Journal of Electronic Materials, 2018, 47, 4170-4176.	2.2	10
78	Temperature of a nanoparticle above a substrate under radiative heating and cooling. Physical Review B, 2017, 95, .	3.2	9
79	Numerical simulation of transient phonon heat transfer in silicon nanowires and nanofilms. Journal of Physics: Conference Series, 2007, 92, 012077.	0.4	8
80	Effect of embedding nanoparticles on the lattice thermal conductivity of bulk semiconductor crystals. Journal of Applied Physics, 2013, 113, 043510.	2.5	8
81	Comment on â€œRadiative transfer over small distances from a heated metalâ€. Optics Letters, 2001, 26, 480.	3.3	7
82	Coherent Spontaneous Emission of Light Due to Surface Waves. , 2003, , 163-182.		7
83	Quantum Thermal Rectification to Design Thermal Diodes and Transistors. Zeitschrift Fur Naturforschung - Section A Journal of Physical Sciences, 2017, 72, 163-170.	1.5	6
84	Analytical description of the radiative-conductive heat transfer in a gray medium contained between two diffuse parallel plates. Applied Mathematical Modelling, 2018, 56, 51-64.	4.2	6
85	Radiative Transfer on Short Length Scales. , 0, , 107-131.		6
86	Monte Carlo modeling of phonon transport in nanodevices. Journal of Physics: Conference Series, 2007, 92, 012078.	0.4	5
87	Transient Energy and Heat Transport in Metals: Effect of the Discrete Character of the Lattice. Journal of Heat Transfer, 2011, 133, .	2.1	5
88	Dynamical thermoelectric coefficients of bulk semiconductor crystals: Towards high thermoelectric efficiency at high frequencies. Journal of Applied Physics, 2014, 115, .	2.5	5
89	Nonlocal study of the near field radiative heat transfer between two n-doped semiconductors. International Journal of Heat and Mass Transfer, 2015, 90, 34-39.	4.8	5
90	Polaritonic figure of merit of plane structures. Optics Express, 2017, 25, 25938.	3.4	5

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91	Thermal emission from a single glass fiber. Journal of Quantitative Spectroscopy and Radiative Transfer, 2019, 236, 106598.	2.3	4
92	THERMAL RESPONSE OF SILICON CRYSTAL TO PICO-FEMTOSECOND HEAT PULSE BY MOLECULAR DYNAMICS. Microscale Thermophysical Engineering, 2004, 8, 155-167.	1.2	3
93	Thermal emission by a subwavelength aperture. Journal of Quantitative Spectroscopy and Radiative Transfer, 2016, 173, 1-6.	2.3	3
94	Heat transport in semiconductor crystals under large temperature gradients. International Journal of Heat and Mass Transfer, 2017, 108, 1357-1363.	4.8	3
95	Spherical and cylindrical conductive thermal diodes based on VO2. European Physical Journal Plus, 2019, 134, 1.	2.6	3
96	Heat transport in semiconductor crystals: Beyond the local-linear approximation. Journal of Applied Physics, 2020, 128, 105104.	2.5	3
97	Nonlinear Dynamics of Wrinkled Premixed Flames and Related Statistical Problems. Lecture Notes in Physics, 2001, , 127-158.	0.7	3
98	Nanostructures. Topics in Applied Physics, 2009, , 17-62.	0.8	3
99	Nanoscale radiative heating of a sample with a probe. Journal of Magnetism and Magnetic Materials, 2002, 249, 462-465.	2.3	2
100	Prediction of the thermal conductivity of nanofilms. Journal of Physics: Conference Series, 2007, 92, 012080.	0.4	2
101	Coherent thermal emission in midinfrared from a bilayer structure. Journal of Quantitative Spectroscopy and Radiative Transfer, 2011, 112, 1156-1161.	2.3	2
102	Thermal Conductance of a Surface Phonon-Polariton Crystal Made up of Polar Nanorods. Zeitschrift Fur Naturforschung - Section A Journal of Physical Sciences, 2017, 72, 135-139.	1.5	2
103	Periodic amplification of radiative heat transfer. Journal of Applied Physics, 2019, 125, 064302.	2.5	2
104	Heat Pulse Propagation in Silicon Nanostructures by Solving Phonon Transport Equation. , 2008, , .		1
105	Characterization of the temperature behavior of optimized SiC gratings emissivity. International Journal of Heat and Mass Transfer, 2021, 172, 121140.	4.8	1
106	Spherical and cylindrical conductive thermal diodes based on two phase-change materials. Zeitschrift Fur Naturforschung - Section A Journal of Physical Sciences, 2022, 77, 181-190.	1.5	1
107	Resonant transmission of light in the infrared by SiC gratings supporting phonon polaritons. European Physical Journal Special Topics, 2004, 119, 229-230.	0.2	0
108	Influence de la dÃ©pendance en tempÃ©rature des propriÃ©tÃ©s optiques des matÃ©riaux sur la force de Casimir. European Physical Journal Special Topics, 2006, 135, 113-114.	0.2	0

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109	Heat transport through plasmonic interactions in closely spaced metallic nanoparticle chains. Journal of Physics: Conference Series, 2007, 92, 012087.	0.4	0
110	Monte Carlo Simulation of Heat Pulse Propagation in Silicon Nanostructure. , 2008, , .		0
111	Control of Near-Field Emitted by Micro and Nanostructured Materials. , 2009, , .		0
112	Near Field Heat Transfer Between Metamaterials. , 2010, , .		0
113	Silicon Nanowire Conductance in the Ballistic Regime: Models and Simulations. Journal of Heat Transfer, 2012, 134, .	2.1	0
114	Dynamical behaviour of a far-field radiative thermal transistor. , 2015, , .		0
115	Transfert radiatif entre une petite particule et un diÃ©lectrique: application au chauffage local. European Physical Journal Special Topics, 2002, 12, 291-292.	0.2	0
116	Ã‰mission spontanÃ©e cohÃ©rente de lumiÃ¨re. European Physical Journal Special Topics, 2004, 119, 35-41.	0.2	0
117	Near Field Heat Transfer: Where Radiation Becomes Conduction. Journal of Computational and Theoretical Nanoscience, 2008, 5, 194-200.	0.4	0
118	Near-Field and Far-Field Thermal Emission of individual subwavelength-sized resonators. , 2019, , .		0