Rodolphe Vaillon

List of Publications by Year
in descending order

74 papers	2,160 citations	257450 24 h-index	254184 43 g-index
75 all docs	75 docs citations	75 times ranked	1228 citing authors

#	Article	IF	Citations
1	Advances in thermophotovoltaics: Materials, devices, and systems. Solar Energy Materials and Solar Cells, 2022, 240, 111711.	6.2	9
2	Thermophotovoltaic energy conversion. , 2021, , 285-308.		15
3	Radiative heat transfer at the nanoscale: experimental trends and challenges. Nanoscale Horizons, 2021, 6, 201-208.	8.0	23
4	Near-Field Thermophotovoltaic Conversion with High Electrical Power Density and Cell Efficiency above 14%. Nano Letters, 2021, 21, 4524-4529.	9.1	79
5	Solar Cells Operating under Thermal Stress. Cell Reports Physical Science, 2020, 1, 100267.	5.6	17
6	Indium antimonide photovoltaic cells for near-field thermophotovoltaics. Solar Energy Materials and Solar Cells, 2019, 203, 110190.	6.2	15
7	Energy and Luminous Performance Investigation of an OPV/ETFE Glazing Element for Building Integration. Energies, 2019, 12, 1870.	3.1	16
8	Thermionic-enhanced near-field thermophotovoltaics. Nano Energy, 2019, 61, 10-17.	16.0	55
9	Thermionic-enhanced near-field thermophotovoltaics for medium-grade heat sources. Applied Physics Letters, 2019, 114, 133501.	3.3	36
10	Micron-sized liquid nitrogen-cooled indium antimonide photovoltaic cell for near-field thermophotovoltaics. Optics Express, 2019, 27, A11.	3.4	31
11	New insights into the thermal behavior and management of thermophotovoltaic systems. Optics Express, 2019, 27, 36340.	3.4	14
12	Pathways for mitigating thermal losses in solar photovoltaics. Scientific Reports, 2018, 8, 13163.	3.3	64
13	Spectrally shaping high-temperature radiators for thermophotovoltaics using Mo-HfO₂ trilayer-on-substrate structures. Optics Express, 2018, 26, 4346.	3.4	24
14	Radiative Properties of Particles. , 2018, , 1143-1172.		1
15	Thermal Behavior of Photovoltaic Devices. , 2017, , .		90
16	Thermal Issues in Photovoltaics and Existing Solutions. , 2017, , 1-28.		3
17	Temperature Coefficients of Photovoltaic Devices. , 2017, , 29-74.		7
18	A Thermal Model for the Design of Photovoltaic Devices. , 2017, , 75-103.		2

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19	Specificities of the Thermal Behavior of Current and Emerging Photovoltaic Technologies. , 2017, , 105-128.		1
20	External Luminescence and Photon Recycling in Near-Field Thermophotovoltaics. Physical Review Applied, 2017, 8, .	3.8	26
21	Coherent regime and far-to-near-field transition for radiative heat transfer. Journal of Quantitative Spectroscopy and Radiative Transfer, 2017, 187, 310-321.	2.3	11
22	High-injection effects in near-field thermophotovoltaic devices. Scientific Reports, 2017, 7, 15860.	3.3	23
23	Radiative Properties of Particles. , 2017, , 1-30.		0
24	Optimization of solar thermophotovoltaic systems including the thermal balance. , 2016, , .		6
25	Spectral and total temperature-dependent emissivities of few-layer structures on a metallic substrate. Optics Express, 2016, 24, A374.	3.4	12
26	A full thermal model for photovoltaic devices. Solar Energy, 2016, 140, 73-82.	6.1	50
27	Experimental Assessment of Temperature Coefficient Theories for Silicon Solar Cells. IEEE Journal of Photovoltaics, 2016, 6, 56-60.	2.5	37
28	The Surface Wave Scattering-Microwave Scanner (SWS-MS). Journal of Quantitative Spectroscopy and Radiative Transfer, 2016, 168, 1-9.	2.3	0
29	Impacts of propagating, frustrated and surface modes on radiative, electrical and thermal losses in nanoscale-gap thermophotovoltaic power generators. Scientific Reports, 2015, 5, 11626.	3.3	77
30	Spatial and spectral distributions of thermal radiation emitted by a semi-infinite body and absorbed by a flat film. AIP Advances, 2015, 5, 057106.	1.3	7
31	Experimental assessment of temperature coefficient theories for silicon solar cells. , 2015, , .		5
32	The generalized k-moment method for the modeling of cumulative k-distributions of H2O at high temperature. Journal of Quantitative Spectroscopy and Radiative Transfer, 2014, 143, 92-99.	2.3	7
33	Recent advances in microwave analog to light scattering experiments. Journal of Quantitative Spectroscopy and Radiative Transfer, 2014, 146, 100-105.	2.3	23
34	Evanescent wave scattering by particles on a surface: Validation of the discrete dipole approximation with surface interaction against microwave analog experiments. Journal of Quantitative Spectroscopy and Radiative Transfer, 2014, 146, 452-458.	2.3	10
35	The multispectral gas radiation modeling: A new theoretical framework based on a multidimensional approach to k-distribution methods. Journal of Quantitative Spectroscopy and Radiative Transfer, 2014, 147, 178-195.	2.3	24
36	Reducing Thermal Radiation Between Parallel Plates in the Far-to-Near Field Transition Regime. , 2014, , .		2

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37	Modeling the cumulative distribution of absorption coefficients of gases using the generalized k-moment method. Journal of Quantitative Spectroscopy and Radiative Transfer, 2013, 124, 49-61.	2.3	5
38	Polarization effects in 3D vectorial-induced current reconstructions. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2013, 30, 1967.	1.5	11
39	The Effect of Dispersed State to Control of Radiative Properties of Coatings Pigmented with Nanoparticles. Journal of Thermal Science and Technology, 2012, 7, 364-378.	1.1	2
40	Generalization of the k-moment method using the maximum entropy principle. Application to the NBKM and full spectrum SLMB gas radiation models. Journal of Quantitative Spectroscopy and Radiative Transfer, 2012, 113, 1508-1520.	2.3	11
41	Thermal Impacts on the Performance of Nanoscale-Gap Thermophotovoltaic Power Generators. IEEE Transactions on Energy Conversion, 2011, 26, 686-698.	5.2	166
42	Control of near-field radiative heat transfer via surface phononâ€“polariton coupling in thin films. Applied Physics A: Materials Science and Processing, 2011, 103, 547-550.	2.3	21
43	A multi-spectral reordering technique for the full spectrum SLMB modeling of radiative heat transfer in nonuniform gaseous mixtures. Journal of Quantitative Spectroscopy and Radiative Transfer, 2011, 112, 394-411.	2.3	8
44	A new implementation of a microwave analog to light scattering measurement device. Journal of Quantitative Spectroscopy and Radiative Transfer, 2011, 112, 1753-1760.	2.3	29
45	Coexistence of multiple regimes for near-field thermal radiation between two layers supporting surface phonon polaritons in the infrared. Physical Review B, 2011, 84, .	3.2	61
46	Polarization imaging of multiply-scattered radiation based on integral-vector Monte Carlo method. Journal of Quantitative Spectroscopy and Radiative Transfer, 2010, 111, 287-294.	2.3	8
47	A database for the SLMB modeling of the full spectrum radiative properties of CO2. Journal of Quantitative Spectroscopy and Radiative Transfer, 2010, 111, 325-330.	2.3	9
48	A nonuniform narrow band correlated-k approximation using the k-moment method. Journal of Quantitative Spectroscopy and Radiative Transfer, 2010, 111, 1900-1911.	2.3	16
49	Local density of electromagnetic states within a nanometric gap formed between two thin films supporting surface phonon polaritons. Journal of Applied Physics, 2010, 107, .	2.5	69
50	Spectral tuning of near-field radiative heat flux between two thin silicon carbide films. Journal Physics D: Applied Physics, 2010, 43, 075501.	2.8	138
51	Microwave measurements of the full amplitude scattering matrix of a complex aggregate: a database for the assessment of light scattering codes. Optics Express, 2010, 18, 2056.	3.4	28
52	THERMAL IMPACTS ON PERFORMANCES OF NANOSCALE-GAP THERMOPHOTOVOLTAIC ENERGY CONVERSION DEVICES. , 2010, , .		2
53	Microwave analog to light scattering measurements on a fully characterized complex aggregate. Applied Physics Letters, 2009, 94, 181107.	3.3	14
54	SLMB Modeling of the Full Spectrum Cumulative k-Distribution of H2O. , 2009, , .		5

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55	Solution of near-field thermal radiation in one-dimensional layered media using dyadic Green's functions and the scattering matrix method. Journal of Quantitative Spectroscopy and Radiative Transfer, 2009, 110, 2002-2018.	2.3	167
56	Near-infrared emission spectrometry measurements for nonintrusive soot diagnostics in flames. Journal of Quantitative Spectroscopy and Radiative Transfer, 2008, 109, 349-361.	2.3	20
57	The k-moment method for the narrow band modeling of radiative properties of nonuniform gaseous media. Journal of Quantitative Spectroscopy and Radiative Transfer, 2008, 109, 258-268.	2.3	8
58	The spectral-line moment-based (SLMB) modeling of the wide band and global blackbody-weighted transmission function and cumulative distribution function of the absorption coefficient in uniform gaseous media. Journal of Quantitative Spectroscopy and Radiative Transfer, 2008, 109, 2401-2416.	2.3	26
59	Near-field radiative heat transfer enhancement via surface phonon polaritons coupling in thin films. Applied Physics Letters, 2008, 93, .	3.3	139
60	Effect of particle polydispersity on particle concentration measurement by using laser Doppler anemometry. Experimental Thermal and Fluid Science, 2007, 31, 839-847.	2.7	11
61	Amplitude and phase of light scattered by micro-scale aggregates of dielectric spheres: Comparison between theory and microwave analogy experiments. Journal of Quantitative Spectroscopy and Radiative Transfer, 2007, 103, 156-167.	2.3	20
62	Performance of discrete dipole approximation for prediction of amplitude and phase of electromagnetic scattering by particles. Journal of Quantitative Spectroscopy and Radiative Transfer, 2007, 103, 83-101.	2.3	21
63	Determination of soot temperature, volume fraction and refractive index from flame emission spectrometry. Journal of Quantitative Spectroscopy and Radiative Transfer, 2007, 104, 266-276.	2.3	59
64	The k-moment method for modeling the blackbody weighted transmission function for narrow and wide band radiative properties of gases. Journal of Quantitative Spectroscopy and Radiative Transfer, 2007, 108, 1-16.	2.3	17
65	Modeling of coupled spectral radiation, thermal and carrier transport in a silicon photovoltaic cell. International Journal of Heat and Mass Transfer, 2006, 49, 4454-4468.	4.8	52
66	Numerical Simulation of a Vertical Solar Collector Integrated in a Building Frame: Radiation and Turbulent Natural Convection Coupling. Heat Transfer Engineering, 2006, 27, 29-42.	1.9	35
67	Polarized radiative transfer in a particle-laden semi-transparent medium via a vector Monte Carlo method. Journal of Quantitative Spectroscopy and Radiative Transfer, 2004, 84, 383-394.	2.3	43
68	Discrete ordinates solution of coupled conductive radiative heat transfer in a two-layer slab with Fresnel interfaces subject to diffuse and obliquely collimated irradiation. Journal of Quantitative Spectroscopy and Radiative Transfer, 2004, 84, 551-562.	2.3	31
69	Comparison of three discrete ordinates methods applied to two-dimensional curved geometries. International Journal of Thermal Sciences, 2003, 42, 343-359.	4.9	19
70	Depolarization of Light by Mono-Dispersed Air Bubbles Coated With Carbonaceous Particles. , 2003, , 389.		2
71	FTIR low resolution emission spectrometry of a laboratory-scale diffusion flame: experimental set-up. Experimental Thermal and Fluid Science, 2002, 26, 181-187.	2.7	13
72	Specific frequency integration method applied to thermally nonhomogeneous hydrogen-helium gas mixture. Journal of Quantitative Spectroscopy and Radiative Transfer, 1997, 58, 301-328.	2.3	1

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73	Radiative heat transfer in orthogonal curvilinear coordinates using the discrete ordinates method. Journal of Quantitative Spectroscopy and Radiative Transfer, 1996, 55, 7-17.	2.3	33
74	ProblÃ¨me de Stefan direct dans un milieu semi-transparent gris. Journal De Physique III, 1996, 6, 373-390.	0.3	16