Aaswath P Raman

List of Publications by Year
in descending order

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55 papers	7,458 citations	201575 27 h-index	302012 39 g-index
56 all docs	56 docs citations	56 times ranked	4751 citing authors

#	Article	IF	Citations
1	Passive radiative cooling below ambient air temperature under direct sunlight. Nature, 2014, 515, 540-544.	13.7	2,008
2	Ultrabroadband Photonic Structures To Achieve High-Performance Daytime Radiative Cooling. Nano Letters, 2013, 13, 1457-1461.	4.5	778
3	Fundamental limit of nanophotonic light trapping in solar cells. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 17491-17496.	3.3	703
4	Radiative cooling to deep sub-freezing temperatures through a 24-h dayâ€“night cycle. Nature Communications, 2016, 7, 13729.	5.8	574
5	Radiative cooling of solar absorbers using a visibly transparent photonic crystal thermal blackbody. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 12282-12287.	3.3	449
6	Radiative cooling of solar cells. Optica, 2014, 1, 32.	4.8	398
7	Sub-ambient non-evaporative fluid cooling withÂtheÂsky. Nature Energy, 2017, 2, .	19.8	343
8	Fundamental limit of light trapping in grating â€˜structures. Optics Express, 2010, 18, A366.	1.7	306
9	Paints as a Scalable and Effective Radiative Cooling Technology for Buildings. Joule, 2020, 4, 1350-1356.	11.7	257
10	Generating Light from Darkness. Joule, 2019, 3, 2679-2686.	11.7	158
11	Color-preserving daytime radiative cooling. Applied Physics Letters, 2013, 103, .	1.5	154
12	Photonic Band Structure of Dispersive Metamaterials Formulated as a Hermitian Eigenvalue Problem. Physical Review Letters, 2010, 104, 087401.	2.9	147
13	Optimization of Multilayer Optical Films with a Memetic Algorithm and Mixed Integer Programming. ACS Photonics, 2018, 5, 684-691.	3.2	103
14	Exceptional Contours and Band Structure Design in Parity-Time Symmetric Photonic Crystals. Physical Review Letters, 2016, 116, 203902.	2.9	102
15	Dielectric nanostructures for broadband light trapping in organic solar cells. Optics Express, 2011, 19, 19015.	1.7	95
16	Broadband directional control of thermal emission. Science, 2021, 372, 393-397.	6.0	94
17	Roadmap on optical energy conversion. Journal of Optics (United Kingdom), 2016, 18, 073004.	1.0	85
18	Light trapping in photonic crystals. Energy and Environmental Science, 2014, 7, 2725.	15.6	61

#	Article	IF	Citations
19	Metamaterials for radiative sky cooling. National Science Review, 2018, 5, 132-133.	4.6	60
20	Thermodynamic Upper Bound on Broadband Light Coupling with Photonic Structures. Physical Review Letters, 2012, 109, 173901.	2.9	59
21	Elucidating the Behavior of Nanophotonic Structures through Explainable Machine Learning Algorithms. ACS Photonics, 2020, 7, 2309-2318.	3.2	58
22	Nanophotonic light-trapping theory for solar cells. Applied Physics A: Materials Science and Processing, 2011, 105, 329-339.	1.1	57
23	Modeling and optimization of radiative cooling based thermoelectric generators. Applied Physics Letters, 2020, 117, .	1.5	50
24	A Keplerian Disk around the Herbig Ae Star HD 169142. Astronomical Journal, 2006, 131, 2290-2293.	1.9	49
25	Multiplexed supercell metasurface design andÂoptimization with tandem residual networks. Nanophotonics, 2021, 10, 1133-1143.	2.9	46
26	Perturbation theory for plasmonic modulation and sensing. Physical Review B, 2011, 83, .	1.1	37
27	Upper Bound on the Modal Material Loss Rate in Plasmonic and Metamaterial Systems. Physical Review Letters, 2013, 110, 183901.	2.9	37
28	Fundamental limit of nanophotonic light-trapping in solar cells. , 2010, , .		29
29	Improving web spam classification using rank-time features. , 2007, , .		25
30	Global Inverse Design across Multiple Photonic Structure Classes Using Generative Deep Learning. Advanced Optical Materials, 2021, 9, 2100548.	3.6	25
31	Sub-ambient radiative cooling under tropical climate using highly reflective polymeric coating. Solar Energy Materials and Solar Cells, 2022, 240, 111723.	3.0	18
32	Instantaneous electric energy and electric power dissipation in dispersive media. Journal of the Optical Society of America B: Optical Physics, 2012, 29, 1048.	0.9	15
33	Controlling radiative heat flows in interior spaces to improve heating and cooling efficiency. IScience, 2021, 24, 102825.	1.9	13
34	Enhancing Adjoint Optimization-Based Photonic Inverse Design with Explainable Machine Learning. ACS Photonics, 2022, 9, 1577-1585.	3.2	11
35	Fundamental Limit of Nanophotonic Light-trapping in Solar Cells. , 2010, , .		10
36	Multiscale Photonic Emissivity Engineering for Relativistic Lightsail Thermal Regulation. Nano Letters, 2022, 22, 594-601.	4.5	7

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37	Dielectric nanostructures for broadband light trapping in organic solar cells. , 2011, , .		6
38	Relativistic Light Sails Need to Billow. Nano Letters, 2022, 22, 90-96.	4.5	6
39	Limit of nanophotonic light-trapping in solar cells. , 2010, , .		4
40	Light trapping in photonic crystals. Proceedings of SPIE, 2014, , .	0.8	3
41	Radiative cooling for solar cells. , 2015, , .		3
42	Thermal light tunnels its way into electricity. Science, 2020, 367, 1301-1302.	6.0	3
43	Accurately Quantifying Clear-Sky Radiative Cooling Potentials: A Temperature Correction to the Transmittance-Based Approximation. Atmosphere, 2021, 12, 1195.	1.0	3
44	Radiative cooling of solar absorbers using a transparent photonic crystal thermal blackbody. , 2016, , .		2
45	Metamaterial band theory: fundamentals & applications. Science China Information Sciences, 2013, 56, 1-14.	2.7	1
46	Memetic Algorithm Optimization of Thin-film Photonic Structures for Thermal and Energy Applications. , 2018, , .		1
47	Elucidating the Physics of Nanophotonic Structures Through Explainable Machine Learning Algorithms. , 2020, , .		1
48	A general light trapping theory for grating structures. , 2011, , .		0
49	Photonic structures: Advanced thermal control, and effective gauge field for light. , 2013, , .		0
50	Limits on nanophotonic solar cell light trapping in the presence of parasitic losses. , 2013, , .		0
51	Manipulating thermal electromagnetic fields by engineering nanophotonic resonances. , 2013, , .		0
52	Photonic Band Structure of Dispersive Metamaterials Formulated as a Hermitian Eigenvalue Problem. , 2010, , .		0
53	Color-preserving daytime radiative cooling. , 2014, , .		0
54	Exceptional contours and band structure design in parity-time symmetric photonic crystals. , 2016, , .		0

#	Article	IF	Citations
55	Limits on Thermal Emission from Multiple Coupled Resonators. , 2020, , .		0