Matthew D Escarra

List of Publications by Year
in descending order

74 papers	1,032 citations	516710 16 h-index	434195 31 g-index
74 all docs	74 docs citations	74 times ranked	1180 citing authors

#	Article	IF	Citations
1	Silicon Nanodisk Huygens Metasurfaces for Portable and Low-Cost Refractive Index and Biomarker Sensing. ACS Applied Nano Materials, 2022, 5, 3983-3991.	5.0	6
2	Design and field testing of a sunflower hybrid concentrator photovoltaic-thermal receiver. Cell Reports Physical Science, 2022, 3, 100887.	5.6	1
3	Large-Area, High-Specific-Power Schottky-Junction Photovoltaics from CVD-Grown Monolayer MoS₂. ACS Applied Materials & Interfaces, 2022, 14, 24281-24289.	8.0	15
4	Engineering Nearest Neighbor Coupling in Huygens Metasurfaces. , 2021, , .		0
5	Inâ€Plane and Outâ€ofâ€Plane Optical Properties of Monolayer, Fewâ€Layer, and Thinâ€Film MoS₂ from 190 to 1700 nm and Their Application in Photonic Device Design. Advanced Photonics Research, 2021, 2, 2000180.	3.6	35
6	A transmissive concentrator photovoltaic module with cells directly cooled by silicone oil for solar cogeneration systems. Applied Energy, 2021, 288, 116622.	10.1	9
7	Resonance tuning for dynamic Huygens metasurfaces. Journal of the Optical Society of America B: Optical Physics, 2021, 38, C105.	2.1	1
8	Solar Cogeneration of Electricity with High-Temperature Process Heat. Cell Reports Physical Science, 2020, 1, 100135.	5.6	10
9	Design and Prototyping of a Portable Metasurface-Based Refractive Index Sensor. , 2020, , .		0
10	Dynamically Tunable Amplitude and Phase Modulation Using Vanadium Dioxide Huygens Metasurfaces. , 2020, , .		0
11	Characterization of Dynamic and Nanoscale Materials and Metamaterials with Continuously Referenced Interferometry. Advanced Optical Materials, 2019, 7, 1901128.	7.3	6
12	Simulation and partial prototyping of an eightâ€junction holographic spectrumâ€splitting photovoltaic module. Energy Science and Engineering, 2019, 7, 2572-2584.	4.0	7
13	Rapid-throughput solution-based production of wafer-scale 2D MoS2. Applied Physics Letters, 2019, 114, .	3.3	18
14	Field testing of a spectrum-splitting transmissive concentrator photovoltaic module. Renewable Energy, 2019, 139, 806-814.	8.9	17
15	A Sunflower Receiver for Hybrid Photovoltaic-Solar Thermal Energy Conversion. , 2019, , .		0
16	Direct Fluid Cooling of Concentrator Photovoltaics for Hybrid Photovoltaic-Solar Thermal Energy Conversion. , 2019, , .		0
17	Transmissive microfluidic active cooling for concentrator photovoltaics. Applied Energy, 2019, 236, 906-915.	10.1	27
18	The Polyhedral Specular Reflector: A Spectrum-Splitting Multijunction Design to Achieve Ultrahigh () Tj ETQq0 0 0 rgBT /Overlock 10 Tf 5	2.5	13

#	Article	IF	Citations
19	Highly Sensitive, Affordable, and Adaptable Refractive Index Sensing with Siliconâ€Based Dielectric Metasurfaces. Advanced Materials Technologies, 2019, 4, 1800567.	5.8	36
20	Towards high efficiency, dynamically tunable metaholograms. , 2019, , .		0
21	An Affordable, Customizable, and Highly Sensitive Metasurface-Based Refractive Index Sensor. , 2019, , .		1
22	High-Efficiency All-Dielectric Huygens Metasurfaces from the Ultraviolet to the Infrared. ACS Photonics, 2018, 5, 1351-1358.	6.6	75
23	A Hybrid CPV/T System Featuring Transmissive, Spectrum-Splitting Concentrator Photovoltaics. , 2018, , .		0
24	Pulsed photoinitiated fabrication of inkjet printed titanium dioxide/reduced graphene oxide nanocomposite thin films. Nanotechnology, 2018, 29, 315401.	2.6	8
25	Highly Sensitive Refractive Index Sensing with Silicon-Based Dielectric Metasurfaces. , 2018, , .		0
26	Dynamically Tunable, Vanadium Dioxide Huygens Source Metasurfaces. , 2018, , .		0
27	Design of photovoltaics for modules with 50% efficiency. Energy Science and Engineering, 2017, 5, 69-80.	4.0	9
28	Techno-economic analysis of hybrid PV/T systems for process heat using electricity to subsidize the cost of heat. Applied Energy, 2017, 208, 1370-1378.	10.1	49
29	Wafer-scale synthesis of monolayer and few-layer MoS ₂ via thermal vapor sulfurization. 2D Materials, 2017, 4, 045007.	4.4	34
30	Optical Design and Validation of an Infrared Transmissive Spectrum Splitting Concentrator Photovoltaic Module. IEEE Journal of Photovoltaics, 2017, 7, 1469-1478.	2.5	10
31	Cost Competitive Concentrator Photovoltaics for Solar Thermal Applications. , 2017, , .		0
32	Transmissive spectrum-splitting concentrator photovoltaic cells and modules. , 2017, , .		0
33	Dynamically Tunable, Vanadium Dioxide Huygens Source Metasurfaces. , 2017, , .		0
34	Transmissive concentrator multijunction solar cells with over 47% in-band power conversion efficiency. Applied Physics Letters, 2016, 109, .	3.3	16
35	Thermal characterization of concentrated solar absorbance using resistive heaters. , 2016, , .		1
36	A transmissive, spectrum-splitting concentrating photovoltaic module for hybrid photovoltaic-solar thermal energy conversion. Solar Energy, 2016, 137, 585-593.	6.1	45

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37	Highly Efficient, All-Dielectric, Transmissive Gradient Metasurfaces from the Ultraviolet to the Infrared. , 2016, , .		0
38	Transmissive spectrum splitting multi-junction solar module for hybrid CPV/CSP system. , 2015, , .		4
39	Quantum Cascade Laser-Based Sensing for Carbon Sequestration Leakage Monitoring. IEEE Sensors Journal, 2013, 13, 2348-2356.	4.7	2
40	Full spectrum ultrahigh efficiency photovoltaics. , 2013, , .		4
41	Nanophotonic design principles for ultrahigh efficiency photovoltaics. AIP Conference Proceedings, 2013, , .	0.4	11
42	Spectrum-splitting photovoltaics: Holographic spectrum splitting in eight-junction, ultra-high efficiency module. , 2013, , .		12
43	Spectrum splitting photovoltaics: Materials and device parameters to achieve ultrahigh system efficiency. , 2013, , .		7
44	Holographic spectrum splitter for ultra-high efficiency photovoltaics. Proceedings of SPIE, 2013, , .	0.8	2
45	Reflection hologram solar spectrum-splitting filters. , 2012, , .		12
46	Enhanced bandwidth and reduced dispersion through stacking multiple optical metamaterials. Optics Express, 2011, 19, 14990.	3.4	5
47	Temperature Dependence of the Transparency Current Density in Mid-Infrared Quantum Cascade Lasers. , 2011, , .		1
48	Quantum Cascade Laser-based CO2 Isotope Sensors for Carbon Sequestration and Environmental Monitoring. , 2011, , .		0
49	Quantum Cascade Lasers for Sensing CO2 Isotopic Fingerprints. , 2011, , .		0
50	Short Injector Quantum Cascade Lasers. IEEE Journal of Quantum Electronics, 2010, 46, 591-600.	1.9	10
51	Highly power-efficient quantum cascade lasers. Nature Photonics, 2010, 4, 95-98.	31.4	150
52	A quantum cascade laser cw cavity ringdown spectrometer coupled to a supersonic expansion source. Review of Scientific Instruments, 2010, 81, 063102.	1.3	30
53	Thermoelectric Effect in Quantum Cascade Lasers. IEEE Photonics Journal, 2010, 2, 500-509.	2.0	9
54	Analytical technique for subwavelength far field imaging. Applied Physics Letters, 2010, 97, 101103.	3.3	16

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55	Limitations to the Power Output and Efficiency of Mid-Infrared Quantum Cascade Lasers Imposed by Transport. , 2010, , .		2
56	Development of a Quantum Cascade Laser-Based Sensor For Non-Invasive CO2 Monitoring. , 2010, , .		0
57	Analytical Technique for Determining the Size of Subwavelength Focal Spots in far Field. , 2010, , .		0
58	Broadband, Low-Dispersion, Mid-Infrared Metamaterials. , 2010, , .		0
59	Negative Differential Resistance and Pulse Instabilities in Minimalized Quantum Cascade Laser Structures. , 2009, , .		0
60	Intersubband Absorption Loss in High-Performance Mid-Infrared Quantum Cascade Lasers. , 2009, , .		1
61	Quantum cascade lasers with voltage defect of less than one longitudinal optical phonon energy. Applied Physics Letters, 2009, 94, .	3.3	19
62	Rapid and Minimally Invasive Quantum Cascade Wafer Testing. IEEE Photonics Technology Letters, 2009, 21, 531-533.	2.5	0
63	Role of interface roughness in the transport and lasing characteristics of quantum-cascade lasers. Applied Physics Letters, 2009, 94, 091101.	3.3	74
64	Lasing-induced reduction in core heating in high wall plug efficiency quantum cascade lasers. Applied Physics Letters, 2009, 94, .	3.3	1
65	Rapid and minimally invasive quantum cascade wafer testing. Proceedings of SPIE, 2009, , .	0.8	0
66	Ultra-Low Voltage Defect Quantum Cascade Lasers. , 2009, , .		0
67	Instantaneous Power and Threshold in Continuous Wave Quantum Cascade Lasers. , 2009, , .		0
68	Quantum Cascade Lasers with Ultra-Strong Coupling Injection. , 2009, , .		0
69	Role of Interface Roughness in the Transport and Lasing Characteristics of Quantum-Cascade lasers. , 2009, , .		0
70	The excitation and emission of terahertz surface plasmon polaritons on metal wire waveguides. Comptes Rendus Physique, 2008, 9, 215-231.	0.9	13
71	Finite-Element Method Simulations of Guided Wave Phenomena at Terahertz Frequencies. Proceedings of the IEEE, 2007, 95, 1624-1640.	21.3	47
72	Enhanced coupling of terahertz radiation to cylindrical wire waveguides. Optics Express, 2006, 14, 279.	3.4	129

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73	Mode matching of terahertz radiation to cylindrical wire waveguides. , 2006, , .		0
74	Photoconductive terahertz antenna with radial symmetry. Electronics Letters, 2005, 41, 226.	1.0	22