

# Rene Lopez

## List of Publications by Year in descending order

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102  
papers

5,705  
citations

94433

37  
h-index

74163

75  
g-index

105  
all docs

105  
docs citations

105  
times ranked

7851  
citing authors

#	ARTICLE	IF	CITATIONS
1	Coherent Structural Dynamics and Electronic Correlations during an Ultrafast Insulator-to-Metal Phase Transition in $\text{VO}_2$ . Physical Review Letters, 2007, 99, 116401.	7.8	370
2	Size effects in the structural phase transition of $\text{VO}_2$ nanoparticles. Physical Review B, 2002, 65, .	3.2	329
3	Semiconductor to metal phase transition in the nucleation and growth of $\text{VO}_2$ nanoparticles and thin films. Journal of Applied Physics, 2004, 96, 1209-1213.	2.5	329
4	Metal-insulator phase transition in a $\text{VO}_2$ thin film observed with terahertz spectroscopy. Physical Review B, 2006, 74, .	3.2	298
5	Photonic Crystal Geometry for Organic Solar Cells. Nano Letters, 2009, 9, 2742-2746.	9.1	221
6	Size-Dependent Optical Properties of $\text{VO}_2$ Nanoparticle Arrays. Physical Review Letters, 2004, 93, 177403.	7.8	206
7	Rapid tarnishing of silver nanoparticles in ambient laboratory air. Applied Physics B: Lasers and Optics, 2005, 80, 915-921.	2.2	190
8	Tunable SERS in Gold Nanorod Dimers through Strain Control on an Elastomeric Substrate. Nano Letters, 2010, 10, 4488-4493.	9.1	186
9	Investigating the void structure of the polyamide active layers of thin-film composite membranes. Journal of Membrane Science, 2016, 497, 365-376.	8.2	178
10	Photoinduced phase transition in $\text{VO}_2$ nanocrystals: ultrafast control of surface-plasmon resonance. Optics Letters, 2005, 30, 558.	3.3	175
11	Ultrafast insulator-metal phase transition in $\text{VO}_2$ studied by multiterahertz spectroscopy. Physical Review B, 2011, 83, .	3.2	167
12	Structure-Property Relationships in Phosphonate-Derivatized, $\text{Ru}(\text{II})$ Polypyridyl Dyes on Metal Oxide Surfaces in an Aqueous Environment. Journal of Physical Chemistry C, 2012, 116, 14837-14847.	3.1	156
13	Synthesis and characterization of size-controlled vanadium dioxide nanocrystals in a fused silica matrix. Journal of Applied Physics, 2002, 92, 4031-4036.	2.5	149
14	Structural colors: from natural to artificial systems. Wiley Interdisciplinary Reviews: Nanomedicine and Nanobiotechnology, 2016, 8, 758-775.	6.1	140
15	Nanoforest $\text{Nb}_2\text{O}_5$ Photoanodes for Dye-Sensitized Solar Cells by Pulsed Laser Deposition. ACS Applied Materials & Interfaces, 2011, 3, 3929-3935.	8.0	130
16	Biomimetic microlens array with antireflective "moth-eye" surface. Soft Matter, 2011, 7, 6404.	2.7	127
17	Electric-field-driven phase transition in vanadium dioxide. Physical Review B, 2011, 84, .	3.2	118
18	Applications of metal oxide materials in dye sensitized photoelectrosynthesis cells for making solar fuels: let the molecules do the work. Journal of Materials Chemistry A, 2013, 1, 4133.	10.3	115

#	ARTICLE	IF	CITATIONS
19	Confocal Raman Microscopy across the Metal-Insulator Transition of Single Vanadium Dioxide Nanoparticles. Nano Letters, 2009, 9, 702-706.	9.1	112
20	Temperature-controlled surface plasmon resonance in VO <sub>2</sub> nanorods. Optics Letters, 2002, 27, 1327.	3.3	96
21	High-Resolution PFPE-based Molding Techniques for Nanofabrication of High-Pattern Density, Sub-20 nm Features: A Fundamental Materials Approach. Nano Letters, 2010, 10, 1421-1428.	9.1	96
22	Enhanced hysteresis in the semiconductor-to-metal phase transition of VO <sub>2</sub> precipitates formed in SiO <sub>2</sub> by ion implantation. Applied Physics Letters, 2001, 79, 3161-3163.	3.3	94
23	Two-dimensional current percolation in nanocrystalline vanadiumdioxide films. Applied Physics Letters, 2006, 88, 081902.	3.3	93
24	Absorption and quasiguide mode analysis of organic solar cells with photonic crystal photoactive layers. Optics Express, 2009, 17, 7670.	3.4	93
25	Identifying facile and accurate methods to measure the thickness of the active layers of thin-film composite membranes – A comparison of seven characterization techniques. Journal of Membrane Science, 2016, 498, 167-179.	8.2	93
26	A high-throughput method for controlled hot-spot fabrication in SERS-active gold nanoparticle dimer arrays. Journal of Raman Spectroscopy, 2009, 40, 2171-2175.	2.5	91
27	Light-trapping nano-structures in organic photovoltaic cells. Journal of Materials Chemistry, 2011, 21, 16293.	6.7	88
28	Electrophotonic enhancement of bulk heterojunction organic solar cells through photonic crystal photoactive layer. Applied Physics Letters, 2009, 94, .	3.3	73
29	Modulated optical transmission of subwavelength hole arrays in metal-VO <sub>2</sub> films. Applied Physics Letters, 2006, 88, 133115.	3.3	68
30	Second-harmonic generation from arrays of symmetric gold nanoparticles. Physical Review B, 2006, 73, .	3.2	66
31	A Sensitized Nb <sub>2</sub> O <sub>5</sub> Photoanode for Hydrogen Production in a Dye-Sensitized Photoelectrosynthesis Cell. Chemistry of Materials, 2013, 25, 122-131.	6.7	66
32	Minority carrier transport length of electrodeposited Cu <sub>2</sub> O in ZnO/Cu <sub>2</sub> O heterojunction solar cells. Applied Physics Letters, 2011, 98, .	3.3	64
33	Optical nonlinearities in VO <sub>2</sub> nanoparticles and thin films. Applied Physics Letters, 2004, 85, 5191-5193.	3.3	62
34	Hierarchically-Structured NiO Nanoplatelets as Mesoscale p-Type Photocathodes for Dye-Sensitized Solar Cells. Journal of Physical Chemistry C, 2014, 118, 14177-14184.	3.1	49
35	Dynamic Optical Gratings Accessed by Reversible Shape Memory. ACS Applied Materials & Interfaces, 2015, 7, 14288-14293.	8.0	48
36	Switchable reflectivity on silicon from a composite VO <sub>2</sub> -SiO <sub>2</sub> protecting layer. Applied Physics Letters, 2004, 85, 1410-1412.	3.3	47

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37	Minimizing interfacial losses in inverted organic solar cells comprising Al-doped ZnO. Applied Physics Letters, 2012, 100, .	3.3	41
38	Interplay between Bimolecular Recombination and Carrier Transport Distances in Bulk Heterojunction Organic Solar Cells. Advanced Energy Materials, 2012, 2, 477-486.	19.5	36
39	Large area nanofabrication of butterfly wing's three dimensional ultrastructures. Journal of Vacuum Science and Technology B:Nanotechnology and Microelectronics, 2012, 30, .	1.2	35
40	Optical properties and aging of gasochromic WO <sub>3</sub> . Thin Solid Films, 2010, 518, 2247-2249.	1.8	33
41	Increasing Photocurrents in Dye Sensitized Solar Cells with Tantalum-Doped Titanium Oxide Photoanodes Obtained by Laser Ablation. ACS Applied Materials & Interfaces, 2012, 4, 4566-4570.	8.0	30
42	Photonic Crystal Geometry for Organic Polymer:Fullerene Standard and Inverted Solar Cells. Journal of Physical Chemistry C, 2011, 115, 4247-4254.	3.1	28
43	Surface Patterning of Mesoporous Niobium Oxide Films for Solar Energy Conversion. ACS Applied Materials & Interfaces, 2013, 5, 3469-3474.	8.0	28
44	Designing Plasmon-Enhanced Thermochromic Films Using a Vanadium Dioxide Nanoparticle Elastomeric Composite. Advanced Optical Materials, 2016, 4, 578-583.	7.3	26
45	Optical properties of subwavelength hole arrays in vanadium dioxide thin films. Physical Review B, 2006, 73, .	3.2	25
46	Nonideal parasitic resistance effects in bulk heterojunction organic solar cells. Journal of Applied Physics, 2010, 108, 084514.	2.5	25
47	Effects of nano-patterned versus simple flat active layers in upright organic photovoltaic devices. Journal Physics D: Applied Physics, 2013, 46, 024008.	2.8	25
48	Second harmonic generation from resonantly excited arrays of gold nanoparticles. Applied Physics B: Lasers and Optics, 2007, 87, 259-265.	2.2	24
49	Material informatics driven design and experimental validation of lead titanate as an aqueous solar photocathode. Materials Discovery, 2016, 6, 9-16.	3.3	23
50	FDTD modeling of solar energy absorption in silicon branched nanowires. Optics Express, 2013, 21, A392.	3.4	22
51	High Surface Area Antimony-Doped Tin Oxide Electrodes Templated by Graft Copolymerization. Applications in Electrochemical and Photoelectrochemical Catalysis. ACS Applied Materials & Interfaces, 2015, 7, 25121-25128.	8.0	22
52	Pulsed laser deposited porous nano-carpets of indium tin oxide and their use as charge collectors in core-shell structures for dye sensitized solar cells. Nanoscale, 2015, 7, 2400-2408.	5.6	21
53	Reproduction and optical analysis ofMorpho-inspired polymeric nanostructures. Journal of Optics (United Kingdom), 2016, 18, 065105.	2.2	17
54	Line Roughness in Lamellae-Forming Block Copolymer Films. Macromolecules, 2017, 50, 1037-1046.	4.8	17

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55	Structure and Properties of Nanoparticles Formed by Alon Implantation. Topics in Applied Physics, 2009, , 255-285.	0.8	16
56	Analyzing local exciton generation profiles as a means to extract transport lengths in organic solar cells. Physical Review B, 2010, 82, .	3.2	16
57	The role of solvent and morphology on miscibility of methanofullerene and poly(3-hexylthiophene). Thin Solid Films, 2012, 520, 5466-5471.	1.8	16
58	Solution Processed Al-Doped ZnO Nanoparticles/TiO <sub>x</sub> Composite for Highly Efficient Inverted Organic Solar Cells. ACS Applied Materials & Interfaces, 2013, 5, 8440-8445.	8.0	16
59	Role of Thin n-Type Metal-Oxide Interlayers in Inverted Organic Solar Cells. ACS Applied Materials & Interfaces, 2012, 4, 3846-3851.	8.0	13
60	Superflexibility of ITO Electrodes via Submicron Patterning. ACS Applied Materials & Interfaces, 2018, 10, 10339-10346.	8.0	13
61	Transmission increase upon switching of VO <sub>2</sub> thin films on microstructured surfaces. Applied Physics Letters, 2007, 91, .	3.3	12
62	Growth and Post-Deposition Treatments of SrTiO <sub>3</sub> Films for Dye-Sensitized Photoelectrosynthesis Cell Applications. ACS Applied Materials & Interfaces, 2016, 8, 12282-12290.	8.0	12
63	Simple demonstration of visible evanescent-wave enhancement with far-field detection. Optics Letters, 2009, 34, 2048.	3.3	10
64	Modeling photovoltaic performance in periodic patterned colloidal quantum dot solar cells. Optics Express, 2015, 23, A779.	3.4	10
65	The Effect of Light Intensity, Temperature, and Oxygen Pressure on the Photo-Oxidation Rate of Bare PbS Quantum Dots. Nanomaterials, 2018, 8, 341.	4.1	10
66	Controlled Seeding of Laser Deposited Ta:TiO <sub>2</sub> Nanobrushes and Their Performance as Photoanode for Dye Sensitized Solar Cells. ACS Applied Materials & Interfaces, 2013, 5, 13140-13145.	8.0	9
67	Modifications in Morphology Resulting from Nanoimprinting Bulk Heterojunction Blends for Light Trapping Organic Solar Cell Designs. ACS Applied Materials & Interfaces, 2013, 5, 8225-8230.	8.0	8
68	Suppression of bimolecular recombination by UV-sensitive electron transport layers in organic solar cells. Journal of Applied Physics, 2010, 108, 083101.	2.5	7
69	Relationship between Length and Surface-Enhanced Raman Spectroscopy Signal Strength in Metal Nanoparticle Chains: Ideal Models versus Nanofabrication. Journal of Nanotechnology, 2012, 2012, 1-7.	3.4	7
70	Gains and Losses in PbS Quantum Dot Solar Cells with Submicron Periodic Grating Structures. Journal of Physical Chemistry C, 2016, 120, 8005-8013.	3.1	6
71	Enhancing energy absorption in quantum dot solar cells via periodic light-trapping microstructures. Journal of Optics (United Kingdom), 2016, 18, 094002.	2.2	6
72	Impact of Background Oxygen Pressure on the Pulsed-Laser Deposition of ZnO Nanolayers and on Their Corresponding Performance as Electron Acceptors in PbS Quantum-Dot Solar Cells. ACS Applied Nano Materials, 2019, 2, 767-777.	5.0	6

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73	Ultrafast insulator-metal transition in VO <sub>2</sub> : interplay between coherent lattice motion and electronic correlations. <i>Physica Status Solidi C: Current Topics in Solid State Physics</i> , 2009, 6, 149-151.	0.8	5
74	Anharmonic phonon coupling in vapor-liquid-solid grown ZnO nanowires. <i>Applied Physics Letters</i> , 2009, 95, .	3.3	5
75	Dye-Sensitized Nonstoichiometric Strontium Titanate Core-Shell Photocathodes for Photoelectrosynthesis Applications. <i>ACS Applied Materials &amp; Interfaces</i> , 2021, 13, 15261-15269.	8.0	5
76	Using a Semiconductor-to-Metal Transition to Control Optical Transmission through Subwavelength Hole Arrays. <i>Advances in OptoElectronics</i> , 2008, 2008, 1-10.	0.6	4
77	Influence of ionic pretreatment on the performance of solid electrolyte dye-sensitized solar cells. <i>Solar Energy</i> , 2012, 86, 2312-2317.	6.1	4
78	Balance between light trapping and charge carrier collection: Electro-photon optimization of organic photovoltaics with ridge-patterned back electrodes. <i>Journal of Applied Physics</i> , 2013, 113, 244503.	2.5	4
79	Pulsed laser deposition of conductive metallo-dielectric optical filters. <i>Applied Physics A: Materials Science and Processing</i> , 2002, 74, 307-310.	2.3	3
80	Particle-solid interactions and 21st century materials science. <i>Nuclear Instruments &amp; Methods in Physics Research B</i> , 2003, 212, 1-7.	1.4	3
81	Characterizing enhanced performance of nanopatterned bulk heterojunction organic photovoltaics. , 2008, , .		3
82	Numerical design and scattering losses of a one-dimensional metallo-dielectric multilayer with broadband coupling of propagating waves to plasmon modes in the visible range. <i>Journal of the Optical Society of America B: Optical Physics</i> , 2011, 28, 1778.	2.1	3
83	Enhancing light absorption within the carrier transport length in quantum junction solar cells. <i>Applied Optics</i> , 2015, 54, 7933.	2.1	3
84	Impedance spectroscopy study of SrTiO <sub>3</sub> pulse laser deposited photoelectrodes. <i>Thin Solid Films</i> , 2018, 655, 27-33.	1.8	2
85	<title>Injection of light into a planar dielectric waveguide of metallic walls</title>. , 2001, , .		1
86	Fabrication of Ordered Metallic Nanocluster Arrays Using a Focused Ion Beam. <i>Materials Research Society Symposia Proceedings</i> , 2002, 739, 271.	0.1	1
87	Optical nonlinearities and the ultrafast phase transition of VO <sub>2</sub> nanoparticles and thin films. , 2006, 6118, 222.		1
88	Effects of surface asymmetry on femtosecond second-harmonic generation from metal nanoparticle arrays. , 2007, , .		1
89	Efficient high surface area vertically aligned metal oxide nanostructures for dye-sensitized photoanodes by pulsed laser deposition. , 2011, , .		1
90	Minority carrier transport length in electrodeposited Cu <sub>2</sub> O for heterojunction solar cells. <i>Proceedings of SPIE</i> , 2011, , .	0.8	1

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91	Disparity in Optical Charge Generation and Recombination Processes in Upright and Inverted PbS Quantum-Dot Solar Cells. <i>Journal of Physical Chemistry C</i> , 2015, 119, 4606-4611.	3.1	1
92	Fabricating arrays of vanadium dioxide nanodisks by focused ion-beam lithography and pulsed-laser deposition. , 2004, , .		0
93	Reduced second harmonic generation from closely spaced pairs of Au nanoparticles. , 2006, , .		0
94	Second harmonic generation from centrosymmetric arrays of gold nanoparticles. , 2006, , .		0
95	Ultrafast Conductivity and Lattice Dynamics of Insulator-Metal Phase Transition in VO <sub>2</sub> Studied via Multi-Terahertz Spectroscopy. , 2006, , .		0
96	Metal-Insulator Phase Transition in VO <sub>2</sub> : A Look from the Far Infrared Side. <i>Materials Research Society Symposia Proceedings</i> , 2006, 935, 1.	0.1	0
97	Multi-THz conductivity and lattice dynamics during a femtosecond insulator-metal transition in VO <sub>2</sub> . , 2007, , .		0
98	Linear and nonlinear plasmonic effects modulated by a metalinsulator transition. , 2008, , .		0
99	Electro-optical model of photonic crystal bulk heterojunction organic solar cells. , 2010, , .		0
100	Effect of shape, size, and periodicity variations on extraordinary thransmission through symmetric hole arrays in a 4 pair metallo-dielectric tuned metamaterial. , 2011, , .		0
101	Enhanced Performance in PbS Quantum Dots Solar Cells via Pulsed Laser Deposited ZnO Layer. , 2017, , .		0
102	Simple Demonstration of Visible Evanescent-Wave Enhancement with Far-Field Detection. , 2010, , .		0