Lionel Vayssieres

List of Publications by Year
in descending order

104 papers	11,935 citations	101384 36 h-index	82410 72 g-index
111 all docs	111 docs citations	111 times ranked	13681 citing authors

#	Article	IF	Citations
1	On electron loss lowering at hematite photoelectrode interfaces. Journal of the American Ceramic Society, 2023, 106, 79-92.	1.9	6
2	On the Effect of Thermal Processing on Sn Diffusion and Efficiency Enhancement in Hematite/FTO Photoanodes. ECS Journal of Solid State Science and Technology, 2022, 11, 043001.	0.9	5
3	Solution chemistry back-contact FTO/hematite interface engineering for efficient photocatalytic water oxidation. Chinese Journal of Catalysis, 2022, 43, 1247-1257.	6.9	14
4	Light management in photoelectrochemical water splitting â€“ from materials to device engineering. Journal of Materials Chemistry C, 2021, 9, 3726-3748.	2.7	19
5	(Invited) Characterization of Charge Transfer and Recombination Processes at Metal Oxide Semiconductors for Solar Water Splitting. ECS Meeting Abstracts, 2021, MA2021-01, 1251-1251.	0.0	0
6	An intensity modulated photocurrent spectroscopy study of the role of titanium in thick hematite photoanodes. Applied Physics Letters, 2021, 119, .	1.5	11
7	Redox-inactive metal single-site molecular complexes: a new generation of electrocatalysts for oxygen evolution?. Catalysis Science and Technology, 2021, 11, 6411-6424.	2.1	4
8	On the relevance of understanding and controlling the locations of dopants in hematite photoanodes for low-cost water splitting. Applied Physics Letters, 2021, 119, .	1.5	16
9	Engineering hematite/plasmonic nanoparticle interfaces for efficient photoelectrochemical water splitting. Journal of Applied Physics, 2020, 128, 063103.	1.1	7
10	Interaction of Polyoxometalates and Nanoparticles with Collector Surfacesâ€”Focus on the Use of Streaming Current Measurements at Flat Surfaces. Colloids and Interfaces, 2020, 4, 39.	0.9	1
11	Strategies to improve the photoelectrochemical performance of hematite nanorod-based photoanodes. APL Materials, 2020, 8, .	2.2	29
12	Improvement Strategies for Photoelectrochemical Water Splitting at n-Type Oxide Semiconductors: A Case Study of WO3â€“Based Systems. ECS Meeting Abstracts, 2020, MA2020-02, 3882-3882.	0.0	0
13	Something new under the sun for ultra low-cost single-junction PhotoAnodes for highly efficient photocatalytic water splitting. Solar Energy Materials and Solar Cells, 2019, 201, 110083.	3.0	6
14	Photoelectrochemical water oxidation at FTO|WO3@CuWO4 and FTO|WO3@CuWO4|BiVO4 heterojunction systems: An IMPS analysis. Electrochimica Acta, 2019, 308, 317-327.	2.6	43
15	On the Theoretical and Experimental Control of Defect Chemistry and Electrical and Photoelectrochemical Properties of Hematite Nanostructures. ACS Applied Materials & Interfaces, 2019, 11, 2031-2041.	4.0	29
16	Efficient Unassisted Overall Photocatalytic Seawater Splitting on GaN-Based Nanowire Arrays. Journal of Physical Chemistry C, 2018, 122, 13797-13802.	1.5	85
17	In Situ/Operando Xâ€ray Spectroscopies for Advanced Investigation of Energy Materials. Chemistry - A European Journal, 2018, 24, 18356-18373.	1.7	43
18	Atomic-scale understanding of the electronic structure-crystal facets synergy of nanopyramidal CoPi/BiVO4 hybrid photocatalyst for efficient solar water oxidation. Nano Energy, 2018, 53, 483-491.	8.2	31

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19	Making of an Industry-Friendly Artificial Photosynthesis Device. ACS Energy Letters, 2018, 3, 2230-2231.	8.8	48
20	Stability and Performance of Sulfide-, Nitride-, and Phosphide-Based Electrodes for Photocatalytic Solar Water Splitting. Journal of Physical Chemistry Letters, 2017, 8, 5228-5238.	2.1	92
21	A Place in the Sun for Artificial Photosynthesis?. ACS Energy Letters, 2016, 1, 121-135.	8.8	163
22	Spontaneous photoelectric field-enhancement effect prompts the low cost hierarchical growth of highly ordered heteronanostructures for solar water splitting. Nano Research, 2016, 9, 1561-1569.	5.8	51
23	Atomicâ€Scale Origin of Longâ€Term Stability and High Performance of pâ€GaN Nanowire Arrays for Photocatalytic Overall Pure Water Splitting. Advanced Materials, 2016, 28, 8388-8397.	11.1	106
24	Synchrotron-based spectroscopy for solar energy conversion. Proceedings of SPIE, 2015, , .	0.8	1
25	In Situ Electrical Characterization of Anatase TiO₂ Quantum Dots. Advanced Functional Materials, 2014, 24, 4952-4958.	7.8	14
26	Titanium incorporation into hematite photoelectrodes: theoretical considerations and experimental observations. Energy and Environmental Science, 2014, 7, 3100-3121.	15.6	118
27	On the orbital anisotropy in hematite nanorod-based photoanodes. Physical Chemistry Chemical Physics, 2013, 15, 13483.	1.3	18
28	Design of solar cell materials via soft X-ray spectroscopy. Journal of Electron Spectroscopy and Related Phenomena, 2013, 190, 2-11.	0.8	15
29	TiO<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>-SnO<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>:F interfacial electronic structure investigated by soft x-ray absorption spectroscopy. Physical Review B, 2012, 85, .	1.1	39
30	On the Interfacial Electronic Structure Origin of Efficiency Enhancement in Hematite Photoanodes. Journal of Physical Chemistry C, 2012, 116, 22780-22785.	1.5	46
31	Artificial photosynthesis for solar water-splitting. Nature Photonics, 2012, 6, 511-518.	15.6	1,790
32	Electron Enrichment in 3d Transition Metal Oxide Hetero-Nanostructures. Nano Letters, 2011, 11, 3855-3861.	4.5	74
33	A perspective on solar-driven water splitting with all-oxide hetero-nanostructures. Energy and Environmental Science, 2011, 4, 3889.	15.6	219
34	Size effect on the conduction band orbital character of anatase TiO2 nanocrystals. Applied Physics Letters, 2011, 99, 183101.	1.5	32
35	Quantum rods and dots-based structures & devices: Low cost aqueous synthesis and bandgap engineering for solar hydrogen and solar cells applications. Materials Research Society Symposia Proceedings, 2011, 1318, 1.	0.1	0
36	Metal oxide rods and dots-based structures and devices: cost-effective fabrication and surface chemistry control. Materials Research Society Symposia Proceedings, 2009, 1209, 1.	0.1	1

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37	On the Effect of Nanoparticle Size on Water-Oxide Interfacial Chemistry. Journal of Physical Chemistry C, 2009, 113, 4733-4736.	1.5	58
38	Materials Science in the Developing World: Challenges and Perspectives for Africa. Advanced Materials, 2008, 20, 4627-4640.	11.1	13
39	On the fabrication of resistor-shaped ZnO nanowires. Physica E: Low-Dimensional Systems and Nanostructures, 2008, 40, 859-865.	1.3	5
40	Local structural properties and growth mechanism of ZnO nanostrcutures. , 2008, , .		1
41	Rational chemical design of metal oxide nanorod-based materials and devices for gas sensing applications. , 2008, , .		1
42	Nanorods-Based Sensors. Sensor Letters, 2008, 6, 787-791.	0.4	10
43	On the aqueous stabilisation of crystalline metastable nanostructures. International Journal of Nanotechnology, 2007, 4, 750.	0.1	9
44	An aqueous solution approach to advanced metal oxide arrays on substrates. Applied Physics A: Materials Science and Processing, 2007, 89, 1-8.	1.1	49
45	Hydrothermally grown oriented ZnO nanorod arrays for gas sensing applications. Nanotechnology, 2006, 17, 4995-4998.	1.3	636
46	On Aqueous Interfacial Thermodynamics and the Design of Metal-Oxide Nanostructures. , 2006, , 49-78.		0
47	Designing ordered nanoarrays from aqueous solutions. Pure and Applied Chemistry, 2006, 78, 1741-1747.	0.9	7
48	Advanced semiconductor nanostructures. Comptes Rendus Chimie, 2006, 9, 691-701.	0.2	34
49	X-ray absorption and emission spectroscopy of ZnO nanoparticle and highly oriented ZnO microrod arrays. Microelectronics Journal, 2006, 37, 686-689.	1.1	34
50	One-dimensional confinement effect in hematite quantum rod arrays. , 2006, , .		1
51	Water-oxide interfacial control and nanomaterials design. , 2005, 5929, 20.		0
52	One-Dimensional Quantum-Confinement Effect in Î±-Fe2O3 Ultrafine Nanorod Arrays. Advanced Materials, 2005, 17, 2320-2323.	11.1	338
53	Polarization-dependent soft-x-ray absorption of a highly oriented ZnO microrod-array. Journal of Physics Condensed Matter, 2005, 17, 235-240.	0.7	11
54	Hierarchical Design of Metal Oxide Multi-Dimensional Arrays from Solutions. Materials Research Society Symposia Proceedings, 2005, 901, 1.	0.1	0

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55	On the thermodynamic stability of metal oxide nanoparticles in aqueous solutions. International Journal of Nanotechnology, 2005, 2, 411.	0.1	35
56	Highly Ordered SnO2 Nanorod Arrays from Controlled Aqueous Growth. Angewandte Chemie - International Edition, 2004, 43, 3666-3670.	7.2	261
57	Electronic structure of nanostructured ZnO from x-ray absorption and emission spectroscopy and the local density approximation. Physical Review B, 2004, 70, .	1.1	180
58	On the design of advanced metal oxide nanomaterials. International Journal of Nanotechnology, 2004, 1, 1.	0.1	189
59	Proton Insertion in Polycrystalline WO3 Studied with Electron Spectroscopy and Semi-empirical Calculations. Advances in Quantum Chemistry, 2004, 47, 23-36.	0.4	8
60	Growth of Arrayed Nanorods and Nanowires of ZnO from Aqueous Solutions. Advanced Materials, 2003, 15, 464-466.	11.1	2,569
61	2-D Mesoparticulate Arrays of Î±-Cr2O3. Journal of Physical Chemistry B, 2003, 107, 2623-2625.	1.2	46
62	Aqueous purpose-built nanostructured metal oxide thin films. International Journal of Materials and Product Technology, 2003, 18, 330.	0.1	9
63	Multiple Orientation Relationships Among Nanocrystals of Manganese Oxides. Microscopy and Microanalysis, 2003, 9, 402-403.	0.2	5
64	3-D Nanoengineering of Metal Oxides and Oxyhydroxides by Aqueous Chemical Growth. Materials Research Society Symposia Proceedings, 2002, 739, 8101.	0.1	0
65	Aqueous Chemical Route to Ferromagnetic 3-D Arrays of Iron Nanorods. Nano Letters, 2002, 2, 1393-1395.	4.5	90
66	Polarization-dependent soft-x-ray absorption of highly oriented ZnO microrod arrays. Journal of Physics Condensed Matter, 2002, 14, 6969-6974.	0.7	74
67	Aqueous photoelectrochemistry of hematite nanorod array. Solar Energy Materials and Solar Cells, 2002, 71, 231-243.	3.0	281
68	Purpose-Built Anisotropic Metal Oxide Material:Â 3D Highly Oriented Microrod Array of ZnO. Journal of Physical Chemistry B, 2001, 105, 3350-3352.	1.2	903
69	Three-Dimensional Array of Highly Oriented Crystalline ZnO Microtubes. Chemistry of Materials, 2001, 13, 4395-4398.	3.2	890
70	Photoelectrochemical Properties of Nano- to Microstructured ZnO Electrodes. Journal of the Electrochemical Society, 2001, 148, A149.	1.3	96
71	Controlled Aqueous Chemical Growth of Oriented Three-Dimensional Crystalline Nanorod Arrays:â€‰ Application to Iron(III) Oxides. Chemistry of Materials, 2001, 13, 233-235.	3.2	480
72	3D Highly Oriented Nanoparticulate and Microparticulate Array of Metal Oxide Materials. Materials Research Society Symposia Proceedings, 2001, 704, 1031.	0.1	1

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73	Aqueous Chemical Growth of <I>Î±</I>-Fe₂O₃â€“<I>Î±</I>-Cr₂O₃ Nanocomposite Thin Films. Journal of Nanoscience and Nanotechnology, 2001, 1, 385-388.	0.9	31
74	Purpose-Built Anisotropic Metal Oxide Nanomaterials. Materials Research Society Symposia Proceedings, 2000, 635, C7.8.1.	0.1	2
75	Purpose-built metal oxide nanomaterials. The emergence of a new generation of smart materials. Pure and Applied Chemistry, 2000, 72, 47-52.	0.9	111
76	Photoelectrochemical Studies of Oriented Nanorod Thin Films of Hematite. Journal of the Electrochemical Society, 2000, 147, 2456.	1.3	454
77	Nanostructured ZnO electrodes for photovoltaic applications. Scripta Materialia, 1999, 12, 487-490.	0.5	148
78	Adsorption of bi-isonicotinic acid on rutile TiO2(110). Journal of Chemical Physics, 1999, 110, 5913-5918.	1.2	165
79	Electrochromic Properties of bis(phthalocyaninato)lutetium(III) Sensitized Nanostructured Anatase TiO[sub 2] Thin Films. Electrochemical and Solid-State Letters, 1999, 2, 648.	2.2	8
80	Size Tailoring of Magnetite Particles Formed by Aqueous Precipitation: An Example of Thermodynamic Stability of Nanometric Oxide Particles. Journal of Colloid and Interface Science, 1998, 205, 205-212.	5.0	353
81	Wet Chemistry of Spinel Iron oxide Particles. European Physical Journal Special Topics, 1997, 07, C1-573-C1-576.	0.2	15
82	The electronic structure of the cis-bis(4,4â€²-dicarboxy-2,2â€²-bipyridine)-bis(isothiocyanato)ruthenium(II) complex and its ligand 2,2â€²-bipyridyl-4,4â€²-dicarboxylic acid studied with electron spectroscopy. Chemical Physics Letters, 1997, 274, 51-57.	1.2	83
83	Solar Hydrogen Production by Photoelectrochemical Water Splitting: The Promise and Challenge. , 0, , 1-35.		4
84	Ordered Titanium Dioxide Nanotubular Arrays as Photoanodes for Hydrogen Generation. , 0, , 265-290.		3
85	Electrodeposition of Nanostructured ZnO Films and Their Photoelectrochemical Properties. , 0, , 291-331.		1
86	Nanostructured Thin-Film WO3 Photoanodes for Solar Water and Sea-Water Splitting. , 0, , 333-347.		4
87	NanostructuredÎ±-Fe2O3 in PEC Generation of Hydrogen. , 0, , 349-397.		3
88	Photoelectrocatalyst Discovery Using High-Throughput Methods and Combinatorial Chemistry. , 0, , 399-458.		2
89	Multidimensional Nanostructures for Solar Water Splitting: Synthesis, Properties, and Applications. , 0, , 459-505.		0
90	Nanoparticle-Assembled Catalysts for Photochemical Water Splitting. , 0, , 507-521.		2

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91	Quantum-Confined Visible-Light-Active Metal-Oxide Nanostructures for Direct Solar-to-Hydrogen Generation. , 0, , 523-558.		1
92	Effects of Metal-Ion Doping, Removal and Exchange on Photocatalytic Activity of Metal Oxides and Nitrides for Overall Water Splitting. , 0, , 559-588.		2
93	Supramolecular Complexes as Photoinitiated Electron Collectors: Applications in Solar Hydrogen Production. , 0, , 589-620.		1
94	Modeling and Simulation of Photocatalytic Reactions at TiO2 Surfaces. , 0, , 37-75.		0
95	Novel Monolithic Reactors for Solar Thermochemical Water Splitting. , 0, , 621-639.		1
96	Solar Thermal and Efficient Solar Thermal/Electrochemical Photo Hydrogen Generation. , 0, , 641-664.		2
97	Photocatalytic Reactions on Model Single Crystal TiO2 Surfaces. , 0, , 77-89.		1
98	Fundamental Reactions on Rutile TiO2(110) Model Photocatalysts Studied by High-Resolution Scanning Tunneling Microscopy. , 0, , 91-122.		1
99	Electronic Structure Study of Nanostructured Transition Metal Oxides Using Soft X-Ray Spectroscopy. , 0, , 123-142.		3
100	X-ray and Electron Spectroscopy Studies of Oxide Semiconductors for Photoelectrochemical Hydrogen Production. , 0, , 143-161.		0
101	Applications of X-Ray Transient Absorption Spectroscopy in Photocatalysis for Hydrogen Generation. , 0, , 163-187.		0
102	Fourier-Transform Infrared and Raman Spectroscopy of Pure and Doped TiO2 Photocatalysts. , 0, , 189-238.		1
103	Interfacial Electron Transfer Reactions in CdS Quantum Dot Sensitized TiO2 Nanocrystalline Electrodes. , 0, , 239-264.		0
104	Design, Fabrication and Electronic Structure of Oriented Metal Oxide Nanorod-Arrays. , 0, , 187-193.		0