

Vasilis M Fthenakis

List of Publications by Year in descending order

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Version: 2024-02-01

102
papers

7,379
citations

61945

43
h-index

54882

84
g-index

107
all docs

107
docs citations

107
times ranked

6828
citing authors

#	ARTICLE	IF	CITATIONS
1	Emissions from Photovoltaic Life Cycles. <i>Environmental Science & Technology</i> , 2008, 42, 2168-2174.	4.6	463
2	Land use and electricity generation: A life-cycle analysis. <i>Renewable and Sustainable Energy Reviews</i> , 2009, 13, 1465-1474.	8.2	385
3	Sustainability of photovoltaics: The case for thin-film solar cells. <i>Renewable and Sustainable Energy Reviews</i> , 2009, 13, 2746-2750.	8.2	348
4	Environmental impacts from the installation and operation of large-scale solar power plants. <i>Renewable and Sustainable Energy Reviews</i> , 2011, 15, 3261-3270.	8.2	301
5	Life-cycle uses of water in U.S. electricity generation. <i>Renewable and Sustainable Energy Reviews</i> , 2010, 14, 2039-2048.	8.2	297
6	Hazard and operability (HAZOP) analysis. A literature review. <i>Journal of Hazardous Materials</i> , 2010, 173, 19-32.	6.5	295
7	GIS-based wind farm site selection using spatial multi-criteria analysis (SMCA): Evaluating the case for New York State. <i>Renewable and Sustainable Energy Reviews</i> , 2011, 15, 3332-3340.	8.2	287
8	End-of-life management and recycling of PV modules. <i>Energy Policy</i> , 2000, 28, 1051-1058.	4.2	268
9	The technical, geographical, and economic feasibility for solar energy to supply the energy needs of the US. <i>Energy Policy</i> , 2009, 37, 387-399.	4.2	259
10	Life cycle analysis in the construction sector: Guiding the optimization of conventional Italian buildings. <i>Energy and Buildings</i> , 2013, 64, 73-89.	3.1	258
11	Photovoltaics energy payback times, greenhouse gas emissions and external costs: 2004â€“early 2005 status. <i>Progress in Photovoltaics: Research and Applications</i> , 2006, 14, 275-280.	4.4	243
12	Life cycle impact analysis of cadmium in CdTe PV production. <i>Renewable and Sustainable Energy Reviews</i> , 2004, 8, 303-334.	8.2	218
13	Life Cycle Greenhouse Gas Emissions of Crystalline Silicon Photovoltaic Electricity Generation. <i>Journal of Industrial Ecology</i> , 2012, 16, S122.	2.8	204
14	The energy return on energy investment (EROI) of photovoltaics: Methodology and comparisons with fossil fuel life cycles. <i>Energy Policy</i> , 2012, 45, 576-582.	4.2	184
15	Greenhouse-gas emissions from solar electric- and nuclear power: A life-cycle study. <i>Energy Policy</i> , 2007, 35, 2549-2557.	4.2	180
16	A Solar Grand Plan. <i>Scientific American</i> , 2008, 298, 64-73.	1.0	145
17	Life Cycle Greenhouse Gas Emissions of Thinâ€“film Photovoltaic Electricity Generation. <i>Journal of Industrial Ecology</i> , 2012, 16, S110.	2.8	125
18	Crystalline silicon photovoltaic recycling planning: macro and micro perspectives. <i>Journal of Cleaner Production</i> , 2014, 66, 443-449.	4.6	124

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19	The Energy and Environmental Performance of Ground-Mounted Photovoltaic Systemsâ€”A Timely Update. <i>Energies</i> , 2016, 9, 622.	1.6	117
20	Life-cycle analysis of flow-assisted nickel zinc-, manganese dioxide-, and valve-regulated lead-acid batteries designed for demand-charge reduction. <i>Renewable and Sustainable Energy Reviews</i> , 2015, 43, 478-494.	8.2	108
21	Life cycle inventory analysis of the production of metals used in photovoltaics. <i>Renewable and Sustainable Energy Reviews</i> , 2009, 13, 493-517.	8.2	104
22	Assessing the Economic Benefits of Compressed Air Energy Storage for Mitigating Wind Curtailment. <i>IEEE Transactions on Sustainable Energy</i> , 2015, 6, 1021-1028.	5.9	102
23	Comparative evaluation of lead emissions and toxicity potential in the life cycle of lead halide perovskite photovoltaics. <i>Energy</i> , 2019, 166, 1089-1096.	4.5	83
24	Energy policy and financing options to achieve solar energy grid penetration targets: Accounting for external costs. <i>Renewable and Sustainable Energy Reviews</i> , 2014, 32, 854-868.	8.2	82
25	Major challenges and opportunities in silicon solar module recycling. <i>Progress in Photovoltaics: Research and Applications</i> , 2020, 28, 1077-1088.	4.4	82
26	Life cycle assessment of cadmium telluride photovoltaic (CdTe PV) systems. <i>Solar Energy</i> , 2014, 103, 78-88.	2.9	79
27	The energy payback time of advanced crystalline silicon PV modules in 2020: a prospective study. <i>Progress in Photovoltaics: Research and Applications</i> , 2014, 22, 1180-1194.	4.4	77
28	Life Cycle Energy and Climate Change Implications of Nanotechnologies. <i>Journal of Industrial Ecology</i> , 2013, 17, 528-541.	2.8	75
29	Class needs for a growing photovoltaics industry. <i>Solar Energy Materials and Solar Cells</i> , 2015, 132, 455-459.	3.0	74
30	Empirical assessment of short-term variability from utility-scale solar PV plants. <i>Progress in Photovoltaics: Research and Applications</i> , 2014, 22, 548-559.	4.4	69
31	Kinetics study on separation of cadmium from tellurium in acidic solution media using ion-exchange resins. <i>Journal of Hazardous Materials</i> , 2005, 125, 80-88.	6.5	66
32	Life cycle assessment of high-concentration photovoltaic systems. <i>Progress in Photovoltaics: Research and Applications</i> , 2013, 21, 379-388.	4.4	65
33	Economic Feasibility of Recycling Photovoltaic Modules. <i>Journal of Industrial Ecology</i> , 2010, 14, 947-964.	2.8	60
34	Design and Optimization of Photovoltaics Recycling Infrastructure. <i>Environmental Science & Technology</i> , 2010, 44, 8678-8683.	4.6	59
35	Energy Return on Energy Invested (ERoEI) for photovoltaic solar systems in regions of moderate insolation: A comprehensive response. <i>Energy Policy</i> , 2017, 102, 377-384.	4.2	59
36	The optimum mix of electricity from wind- and solar-sources in conventional power systems: Evaluating the case for New York State. <i>Energy Policy</i> , 2011, 39, 6972-6980.	4.2	58

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37	Sustainability metrics for extending thin-film photovoltaics to terawatt levels. <i>MRS Bulletin</i> , 2012, 37, 425-430.	1.7	58
38	CdTe photovoltaics: Life cycle environmental profile and comparisons. <i>Thin Solid Films</i> , 2007, 515, 5961-5963.	0.8	55
39	Toxic materials released from photovoltaic modules during fires: Health risks. <i>Solar Cells</i> , 1990, 29, 63-71.	0.6	54
40	Façade-integrated photovoltaics: a life cycle and performance assessment case study. <i>Progress in Photovoltaics: Research and Applications</i> , 2012, 20, 975-990.	4.4	51
41	An energy storage algorithm for ramp rate control of utility scale PV (photovoltaics) plants. <i>Energy</i> , 2015, 91, 894-902.	4.5	50
42	Failure Modes, Effects and Criticality Analysis for Wind Turbines Considering Climatic Regions and Comparing Geared and Direct Drive Wind Turbines. <i>Energies</i> , 2018, 11, 2317.	1.6	49
43	Critical metals in strategic photovoltaic technologies: abundance versus recyclability. <i>Progress in Photovoltaics: Research and Applications</i> , 2013, 21, 1253-1259.	4.4	45
44	Sustainability evaluation of CdTe PV: An update. <i>Renewable and Sustainable Energy Reviews</i> , 2020, 123, 109776.	8.2	45
45	Updated sustainability status of crystalline silicon-based photovoltaic systems: Life-cycle energy and environmental impact reduction trends. <i>Progress in Photovoltaics: Research and Applications</i> , 2021, 29, 1068-1077.	4.4	44
46	Cadmium flows and emissions from CdTe PV: future expectations. <i>Energy Policy</i> , 2010, 38, 5223-5228.	4.2	43
47	Nanoparticle emissions from residential wood combustion: A critical literature review, characterization, and recommendations. <i>Renewable and Sustainable Energy Reviews</i> , 2019, 103, 515-528.	8.2	42
48	Coupling PV and CAES power plants to transform intermittent PV electricity into a dispatchable electricity source. <i>Progress in Photovoltaics: Research and Applications</i> , 2008, 16, 649-668.	4.4	40
49	On the spatial decorrelation of stochastic solar resource variability at long timescales. <i>Solar Energy</i> , 2015, 117, 46-58.	2.9	36
50	Pathways for minimal and zero liquid discharge with enhanced reverse osmosis technologies: Module-scale modeling and techno-economic assessment. <i>Desalination</i> , 2021, 509, 115069.	4.0	36
51	New prospects for PV powered water desalination plants: case studies in Saudi Arabia. <i>Progress in Photovoltaics: Research and Applications</i> , 2016, 24, 543-550.	4.4	35
52	What Are the Energy and Environmental Impacts of Adding Battery Storage to Photovoltaics? A Generalized Life Cycle Assessment. <i>Energy Technology</i> , 2020, 8, 1901146.	1.8	35
53	Energy Return on Investment (EROI) of Solar PV: An Attempt at Reconciliation [Point of View]. <i>Proceedings of the IEEE</i> , 2015, 103, 995-999.	16.4	30
54	Net energy analysis and life cycle energy assessment of electricity supply in Chile: Present status and future scenarios. <i>Energy</i> , 2018, 162, 659-668.	4.5	30

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55	Life-cycle environmental impacts of single-junction and tandem perovskite PVs: a critical review and future perspectives. <i>Progress in Energy</i> , 2020, 2, 032002.	4.6	30
56	Optimal stochastic scheduling of hydropower-based compensation for combined wind and photovoltaic power outputs. <i>Applied Energy</i> , 2020, 276, 115501.	5.1	29
57	A life cycle framework for the investigation of environmentally benign nanoparticles and products. <i>Physica Status Solidi - Rapid Research Letters</i> , 2011, 5, 312-317.	1.2	28
58	Life-Cycle Carbon Emissions and Energy Return on Investment for 80% Domestic Renewable Electricity with Battery Storage in California (U.S.A.). <i>Energies</i> , 2020, 13, 3934.	1.6	28
59	Rebuttal: "Comments on "Energy intensities, EROIs (energy returned on invested), and energy payback times of electricity generating power plants" " Making clear of quite some confusion" <i>Energy</i> , 2015, 82, 1088-1091.	4.5	27
60	Life cycle energy demand and carbon emissions of scalable single-junction and tandem perovskite PV. <i>Progress in Photovoltaics: Research and Applications</i> , 2021, 29, 1078-1092.	4.4	27
61	Dynamic modeling of cadmium substance flow with zinc and steel demand in Japan. <i>Resources, Conservation and Recycling</i> , 2012, 61, 83-90.	5.3	25
62	Energy efficiency and renewable energy utilization in desalination systems. <i>Progress in Energy</i> , 2020, 2, 022003.	4.6	25
63	Life-Cycle Nitrogen Trifluoride Emissions from Photovoltaics. <i>Environmental Science & Technology</i> , 2010, 44, 8750-8757.	4.6	24
64	Mitigation of hydrofluoric acid releases: simulation of the performance of water spraying systems. <i>Journal of Loss Prevention in the Process Industries</i> , 1993, 6, 209-218.	1.7	22
65	Minimizing the cost of hydrogen production through dynamic polymer electrolyte membrane electrolyzer operation. <i>Cell Reports Physical Science</i> , 2022, 3, 100935.	2.8	22
66	Considering the Total Cost of Electricity From Sunlight and the Alternatives [Point of View]. <i>Proceedings of the IEEE</i> , 2015, 103, 283-286.	16.4	19
67	Substance flow analysis of cadmium in Korea. <i>Resources, Conservation and Recycling</i> , 2013, 71, 31-39.	5.3	18
68	Active-salinity-control reverse osmosis desalination as a flexible load resource. <i>Desalination</i> , 2019, 468, 114062.	4.0	18
69	THE FEASIBILITY OF CONTROLLING UNCONFINED RELEASES OF TOXIC GASES BY LIQUID SPRAYING. <i>Chemical Engineering Communications</i> , 1989, 83, 173-189.	1.5	17
70	Direct Te Mining: Resource Availability and Impact on Cumulative Energy Demand of CdTe PV Life Cycles. <i>IEEE Journal of Photovoltaics</i> , 2013, 3, 433-438.	1.5	14
71	Multilayer protection analysis for photovoltaic manufacturing facilities. <i>Process Safety Progress</i> , 2001, 20, 87-94.	0.4	13
72	Integrating Solar Energy, Desalination, and Electrolysis. <i>Solar Rrl</i> , 2022, 6, .	3.1	13

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73	HGSPRAY: A complete model of spraying unconfined gaseous releases. Journal of Loss Prevention in the Process Industries, 1993, 6, 327-331.	1.7	12
74	Prevention and control of accidental releases of hazardous materials in PV facilities. Progress in Photovoltaics: Research and Applications, 1998, 6, 91-98.	4.4	12
75	Water-spray systems for mitigating accidental indoor releases of water-soluble gases. Journal of Loss Prevention in the Process Industries, 2001, 14, 205-211.	1.7	11
76	Security risk analysis for chemical process facilities. Process Safety Progress, 2003, 22, 153-162.	0.4	11
77	Prospects for photovoltaics in sunny and arid regions: A solar grand plan for Chile -Part I-investigation of PV and wind penetration. , 2014, , .		11
78	The Value of Compressed Air Energy Storage for Enhancing Variable Renewable Energy Integration: The Case of Ireland. Energy Technology, 2017, 5, 2026-2038.	1.8	10
79	Assessing the Factors Impacting on the Reliability of Wind Turbines via Survival Analysis – A Case Study. Energies, 2018, 11, 3034. HGSYSTEM 1 Program: HGSYSTEM version 3.0, 1995 with enhancements, 1997. Source: HGSYSTEM Custodian, Shell Research Ltd, Shell Research Centre Thornton, PO Box 1, Chester, CH1 3SH, UK, e-mail: HGSYSTEM@OPC.shell.com. System: a 486 or faster microprocessor runs in DOS3.3 or later. Calculations require about 3 MB in hard drive and 4 MB of RAM. Cost: free downloading from http://www.users.virtual-chester.com/hgssystem . Documentation: a user's manual and a technical reference manual can be downloaded for free from. Journal of Loss Prevention in the Process Industries, 2001, 14, 205-211.	1.6	10
80	Calculations require about 3 MB in hard drive and 4 MB of RAM. Cost: free downloading from http://www.users.virtual-chester.com/hgssystem . Documentation: a user's manual and a technical reference manual can be downloaded for free from. Journal of Loss Prevention in the Process Industries, 2001, 14, 205-211.	1.7	9
81	Conducting HAZOPs in continuous chemical processes: Part I. Criteria, tools and guidelines for selecting nodes. Chemical Engineering Research and Design, 2011, 89, 214-223.	2.7	9
82	Utility scale PV plant variability and energy storage for ramp rate control. , 2013, , .		8
83	The energy performance of potential scenarios with large-scale PV deployment in Chile – a dynamic analysis. , 2018, , .		8
84	MMSOILS, Version 2.2. Risk Analysis, 1993, 13, 575-579.	1.5	7
85	Conducting HAZOPs in continuous chemical processes: Part II. A new model for estimating HAZOP time and a standardized approach for examining nodes. Chemical Engineering Research and Design, 2011, 89, 224-233.	2.7	7
86	Compressed Air Energy Storage Models for Energy Arbitrage and Ancillary Services: Comparison Using Mixed Integer Programming Optimization with Market Data from the Irish Power System. Energy Technology, 2018, 6, 1290-1301.	1.8	7
87	Impacts of long-timescale variability in solar resources at high PV penetrations: Quantification. , 2012, , .		6
88	Predicting Frequency, Time-To-Repair and Costs of Wind Turbine Failures. Energies, 2020, 13, 1149.	1.6	6
89	Realistic operation of two residential cordwood-fired outdoor hydronic heater appliances – Part 1: Particulate and gaseous emissions. Journal of the Air and Waste Management Association, 2022, 72, 738-761.	0.9	6
90	Comment on Seibert, M.K.; Rees, W.E. Through the Eye of a Needle: An Eco-Heterodox Perspective on the Renewable Energy Transition. Energies 2021, 14, 4508. Energies, 2022, 15, 971.	1.6	5

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91	Long-distance interconnection as solar resource intermittency solution: Optimizing the use of energy storage and the geographic dispersion + interconnection of solar generating facilities. , 2013, , .		4
92	Critical Review of Perovskite Photovoltaic Life Cycle Environmental Impact Studies. , 2019, , .		4
93	A solar energy desalination analysis tool, sedat, with data and models for selecting technologies and regions. Scientific Data, 2022, 9, .	2.4	4
94	Life-Cycle Analysis of Tandem PV Perovskite-Modules and Systems. , 2021, , .		3
95	Life-Cycle Carbon Emissions and Energy Implications of High Penetration of Photovoltaics and Electric Vehicles in California. Energies, 2021, 14, 5165.	1.6	3
96	Electrical and electromagnetic hazards in the manufacture of thin film solar cells. Solar Cells, 1986, 19, 45-58.	0.6	2
97	Guidelines for hazard evaluation procedures (1985). Environment International, 1988, 14, 65-66.	4.8	2
98	Grid Flexibility and the Cost of Integrating Variable Renewable Energy: Toward a Renewable Energy Integration Adder for San Diego Gas and Electric Service Territory and the California Electric Grid. , 2018, , .		2
99	Floating Photovoltaic Systems. , 2021, , .		1
100	Source Term and Consequence Modeling. Risk Analysis, 1987, 7, 405-407.	1.5	0
101	Controls of accidental releases of hazardous gases. Journal of Loss Prevention in the Process Industries, 1990, 3, 186.	1.7	0
102	Solar Power in the USA“Status and Outlook. , 2018, , 53-80.		0