Alicia Valero

List of Publications by Year
in descending order

80 papers	1,917 citations	236925 25 h-index	265206 42 g-index
84 all docs	84 docs citations	84 times ranked	1251 citing authors

#	Article	IF	Citations
1	Material bottlenecks in the future development of green technologies. Renewable and Sustainable Energy Reviews, 2018, 93, 178-200.	16.4	202
2	Decreasing Ore Grades in Global Metallic Mining: A Theoretical Issue or a Global Reality?. Resources, 2016, 5, 36.	3.5	193
3	Mineral resources in life cycle impact assessmentâ€"part I: a critical review of existing methods. International Journal of Life Cycle Assessment, 2020, 25, 784-797.	4.7	95
4	Mineral resources in life cycle impact assessment: part II â€" recommendations on application-dependent use of existing methods and on future method development needs. International Journal of Life Cycle Assessment, 2020, 25, 798-813.	4.7	84
5	Assessing maximum production peak and resource availability of non-fuel mineral resources: Analyzing the influence of extractable global resources. Resources, Conservation and Recycling, 2017, 125, 208-217.	10.8	79
6	Global material requirements for the energy transition. An exergy flow analysis of decarbonisation pathways. Energy, 2018, 159, 1175-1184.	8.8	78
7	Physical geonomics: Combining the exergy and Hubbert peak analysis for predicting mineral resources depletion. Resources, Conservation and Recycling, 2010, 54, 1074-1083.	10.8	66
8	Strategic mineral resources: Availability and future estimations for the renewable energy sector. Environmental Development, 2022, 41, 100640.	4.1	66
9	The crepuscular planet. A model for the exhausted continental crust. Energy, 2011, 36, 694-707.	8.8	50
10	Application of Thermoeconomics to Industrial Ecology. Entropy, 2010, 12, 591-612.	2.2	49
11	Thermoeconomic tools for the analysis of eco-industrial parks. Energy, 2013, 62, 62-72.	8.8	42
12	The crepuscular planet. A model for the exhausted atmosphere and hydrosphere. Energy, 2011, 36, 3745-3753.	8.8	41
13	Vehicles and Critical Raw Materials: A Sustainability Assessment Using Thermodynamic Rarity. Journal of Industrial Ecology, 2018, 22, 1005-1015.	5.5	40
14	Inventory of the exergy resources on earth including its mineral capital. Energy, 2010, 35, 989-995.	8.8	39
15	Downcycling in automobile recycling process: A thermodynamic assessment. Resources, Conservation and Recycling, 2018, 136, 24-32.	10.8	39
16	A prediction of the exergy loss of the world's mineral reserves in the 21st century. Energy, 2011, 36, 1848-1854.	8.8	38
17	Assessment of strategic raw materials in the automobile sector. Resources, Conservation and Recycling, 2020, 161, 104968.	10.8	37
18	Material flow analysis for Europe: An exergoecological approach. Ecological Indicators, 2016, 60, 603-610.	6.3	32

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19	From Grave to Cradle. Journal of Industrial Ecology, 2013, 17, 43-52.	5.5	31
20	Thermodynamic Approach to Evaluate the Criticality of Raw Materials and Its Application through a Material Flow Analysis in Europe. Journal of Industrial Ecology, 2018, 22, 839-852.	5.5	30
21	Exergoecology: A thermodynamic approach for accounting the Earth's mineral capital. The case of bauxiteâ€"aluminium and limestoneâ€"lime chains. Energy, 2010, 35, 229-238.	8.8	29
22	Exergy accounting applied to metallurgical systems: The case of nickel processing. Energy, 2013, 62, 37-45.	8.8	28
23	Evolution of the decrease in mineral exergy throughout the 20th century. The case of copper in the US. Energy, 2008, 33, 107-115.	8.8	27
24	Using thermodynamics to improve the resource efficiency indicator GDP/DMC. Resources, Conservation and Recycling, 2015, 94, 110-117.	10.8	27
25	Exergy cost allocation of by-products in the mining and metallurgical industry. Resources, Conservation and Recycling, 2015, 102, 128-142.	10.8	25
26	Exergy of comminution and the Thanatia Earth's model. Energy, 2012, 44, 1085-1093.	8.8	24
27	What are the clean reserves of fossil fuels?. Resources, Conservation and Recycling, 2012, 68, 126-131.	10.8	24
28	Raw material use in a battery electric car â€" a thermodynamic rarity assessment. Resources, Conservation and Recycling, 2020, 158, 104820.	10.8	24
29	Exergy Replacement Cost of Mineral Resources. Journal of Environmental Accounting and Management, 2013, 1, 147-158.	0.5	24
30	The thermodynamic properties of the upper continental crust: Exergy, Gibbs free energy and enthalpy. Energy, 2012, 41, 121-127.	8.8	20
31	Thermodynamic Rarity and the Loss of Mineral Wealth. Energies, 2015, 8, 821-836.	3.1	20
32	Thermodynamic Rarity and Recyclability of Raw Materials in the Energy Transition: The Need for an In-Spiral Economy. Entropy, 2019, 21, 873.	2.2	20
33	How to account for mineral depletion. The exergy and economic mineral balance of Spain as a case study. Ecological Indicators, 2014, 46, 548-559.	6.3	19
34	The cost of mineral depletion in Latin America: An exergoecology view. Resources Policy, 2018, 59, 117-124.	9.6	19
35	Physical Hydronomics: Application of the exergy analysis to the assessment of environmental costs of water bodies. The case of the inland basins of Catalonia. Energy, 2009, 34, 2101-2107.	8.8	18
36	Colombian mineral resources: An analysis from a Thermodynamic Second Law perspective. Resources Policy, 2015, 45, 23-28.	9.6	16

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37	The energy needed to concentrate minerals from common rocks: The case of copper ore. Energy, 2019, 181, 494-503.	8.8	15
38	Environmental costs of a river watershed within the European water framework directive: Results from physical hydronomics. Energy, 2010, 35, 1008-1016.	8.8	14
39	Assessing the exergy degradation of the natural capital: From Szargut's updated reference environment to the new thermoecological-cost methodology. Energy, 2018, 163, 1140-1149.	8.8	14
40	Avoided energy cost of producing minerals: The case of iron ore. Energy Reports, 2019, 5, 364-374.	5.1	14
41	Exergoecology as a tool for ecological modelling. The case of the US food production chain. Ecological Modelling, 2013, 255, 21-28.	2.5	12
42	Physical Assessment of the Mineral Capital of a Nation: The Case of an Importing and an Exporting Country. Resources, 2015, 4, 857-870.	3.5	11
43	An exergoecological analysis of the mineral economy in Spain. Energy, 2015, 88, 2-8.	8.8	11
44	How can strategic metals drive the economy? Tungsten and tin production in Spain during periods of war. The Extractive Industries and Society, 2019, 6, 8-14.	1.2	11
45	GLOBAL GOLD MINING: Is technological learning overcoming the declining in ore grades?. Journal of Environmental Accounting and Management, 2013, 1, 85-101.	0.5	11
46	Toward Material Efficient Vehicles: Ecodesign Recommendations Based on Metal Sustainability Assessments. SAE International Journal of Materials and Manufacturing, 0, 11, 213-228.	0.3	10
47	Exergoecology Assessment of Mineral Exports from Latin America: Beyond a Tonnage Perspective. Sustainability, 2018, 10, 723.	3.2	10
48	Thermo-ecological and exergy replacement costs of nickel processing. Energy, 2014, 72, 103-114.	8.8	8
49	Producing metals from common rocks: The case of gold. Resources, Conservation and Recycling, 2019, 148, 23-35.	10.8	8
50	Exergy-Based Assessment of Polymers Production and Recycling: An Application to the Automotive Sector. Energies, 2021, 14, 363.	3.1	8
51	The influence of ore grade decline on energy consumption and GhG emissions: The case of gold. Environmental Development, 2022, 41, 100683.	4.1	8
52	Environmental Impacts of Promoting New Public Transport Systems in Urban Mobility: A Case Study. Journal of Sustainable Development of Energy, Water and Environment Systems, 2017, 5, 377-395.	1.9	7
53	Mining energy consumption as a function of ore grade decline: the case of lead and zinc. Journal of Sustainable Mining, 2021, 20, 109-121.	0.2	7
54	Simulation to Recover Niobium and Tantalum from the Tin Slags of the Old Penouta Mine: A Case Study. Minerals (Basel, Switzerland), 2021, 11, 1123.	2.0	6

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55	A New Approach for Static NOx Measurement in PTI. Sustainability, 2021, 13, 13424.	3.2	5
56	Exergy assessment of topsoil fertility. Ecological Modelling, 2022, 464, 109802.	2.5	4
57	Resumen y anÃ¡lisis crÃtico del informe especial de la Agencia Internacional de la EnergÃa: El Rol de los minerales crÃticos en la transiciÃ³n hacia energÃas limpias. Revista De Metalurgia, 2021, 57, e197.	0.5	3
58	The Energy Cost of Extracting Critical Raw Materials from Tailings: The Case of Coltan. Geosciences (Switzerland), 2022, 12, 214.	2.2	3
59	Exergy and the Hubbert Peak: Assessment of the Scarcity of Minerals on Earth. , 2008, , .		2
60	Thermodynamic Methods to Evaluate Resources. Green Energy and Technology, 2017, , 131-165.	0.6	2
61	Unfortunately, the amount of gold on earth is not infinite, a response to Wellmer and Scholz (2017). Resources, Conservation and Recycling, 2018, 133, 155-156.	10.8	2
62	Resources. Production. Depletion. Green Energy and Technology, 2017, , 7-36.	0.6	2
63	Assessing Energy Descent Scenarios for the Ecological Transition in Spain 2020â€“2030. Sustainability, 2021, 13, 11867.	3.2	2
64	Thermodynamic Rarity Assessment of Mobile Phone PCBs: A Physical Criticality Indicator in Times of Shortage. Entropy, 2022, 24, 100.	2.2	2
65	Exergy Evaluation of the Mineral Capital on Earth: Influence of the Reference Environment. , 2005, , 235.		1
66	Sankey and Grassmann Diagrams for Mineral Trade in the EU-28. Green Energy and Technology, 2018, , 103-113.	0.6	1
67	Eco-credit system to incentivise the recycling of waste electric and electronic equipment based on a thermodynamic approach. International Journal of Exergy, 2021, 35, 132.	0.4	1
68	Integrating the Thermo-ecological and Exergy Replacement Costs to Assess Mineral Processing. Green Energy and Technology, 2017, , 337-352.	0.6	1
69	The Thermodynamic Rarity Concept for the Evaluation of Mineral Resources. Green Energy and Technology, 2017, , 203-232.	0.6	1
70	Hydropowerâ€™s Contribution to the Environmental Integrity of the Embryonic Chinese Carbon Market. Journal of Environmental Accounting and Management, 2014, 2, 91-103.	0.5	1
71	Exergy as an Indicator for Resources Scarcity: The Exergy Loss of Australian Mineral Capital â€” A Case Study. , 2006, , 301.		0
72	Looking into the Future. , 2021, , 207-242.		0

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73	The Mineral Voracity of Human Beings. , 2021, , 13-32.		0
74	The (Thermodynamic) Value of Scarcity. , 2021, , 67-118.		0
75	On the Availability of Resources on Earth. , 2021, , 33-66.		0
76	Material Limits of the Energy Transition. , 2021, , 147-187.		0
77	What Is This Book About?. , 2021, , 1-12.		0
78	Thermodynamic Assessment of the Loss of Mineral Wealth. , 2021, , 119-146.		0
79	The Hidden Cost of Technologies. , 2021, , 189-205.		0
80	Accounting for Mineral Depletion Under the UN-SEEA Framework. , 0, , .		0