

Thomas E Graedel

List of Publications by Citations

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

267
papers

16,555
citations

74
h-index

120
g-index

288
ext. papers

18,690
ext. citations

8.7
avg, IF

7.1
L-index

#	Paper	IF	Citations
267	Challenges in metal recycling. <i>Science</i> , 2012 , 337, 690-5	33.3	443
266	Metal stocks and sustainability. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2006 , 103, 1209-14	11.5	435
265	Global gridded inventories of anthropogenic emissions of sulfur and nitrogen. <i>Journal of Geophysical Research</i> , 1996 , 101, 29239-29253		410
264	What Do We Know About Metal Recycling Rates?. <i>Journal of Industrial Ecology</i> , 2011 , 15, 355-366	7.2	377
263	Methodology of metal criticality determination. <i>Environmental Science & Technology</i> , 2012 , 46, 1063-70	10.3	367
262	Criticality of metals and metalloids. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015 , 112, 4257-62	11.5	351
261	Organic films on atmospheric aerosol particles, fog droplets, cloud droplets, raindrops, and snowflakes. <i>Reviews of Geophysics</i> , 1983 , 21, 903	23.1	336
260	Chemistry within aqueous atmospheric aerosols and raindrops. <i>Reviews of Geophysics</i> , 1981 , 19, 505	23.1	315
259	Global in-use stocks of the rare Earth elements: a first estimate. <i>Environmental Science & Technology</i> , 2011 , 45, 4096-101	10.3	280
258	Composite global emissions of reactive chlorine from anthropogenic and natural sources: Reactive Chlorine Emissions Inventory. <i>Journal of Geophysical Research</i> , 1999 , 104, 8429-8440		272
257	On the materials basis of modern society. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015 , 112, 6295-300	11.5	265
256	Criticality of non-fuel minerals: a review of major approaches and analyses. <i>Environmental Science & Technology</i> , 2011 , 45, 7620-30	10.3	260
255	The kinetic chemistry of dense interstellar clouds. <i>Astrophysical Journal, Supplement Series</i> , 1982 , 48, 321	8	257
254	Corrosion Mechanisms for Silver Exposed to the Atmosphere. <i>Journal of the Electrochemical Society</i> , 1992 , 139, 1963-1970	3.9	254
253	Tropospheric budget of reactive chlorine. <i>Global Biogeochemical Cycles</i> , 1995 , 9, 47-77	5.9	243
252	Forging the anthropogenic iron cycle. <i>Environmental Science & Technology</i> , 2007 , 41, 5120-9	10.3	215
251	Corrosion Mechanisms for Zinc Exposed to the Atmosphere. <i>Journal of the Electrochemical Society</i> , 1989 , 136, 193C-203C	3.9	211

250	Multilevel cycle of anthropogenic copper. <i>Environmental Science & Technology</i> , 2004 , 38, 1242-52	10.3	207
249	Industrial ecology: concepts and approaches. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 1992 , 89, 793-7	11.5	205
248	Exploring the engine of anthropogenic iron cycles. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2006 , 103, 16111-6	11.5	189
247	Kinetic model studies of atmospheric droplet chemistry: 2. Homogeneous transition metal chemistry in raindrops. <i>Journal of Geophysical Research</i> , 1986 , 91, 5205		186
246	Copper patinas formed in the atmosphere— Introduction. <i>Corrosion Science</i> , 1987 , 27, 639-657	6.8	177
245	The corrosion of silver by atmospheric sulfurous gases. <i>Corrosion Science</i> , 1985 , 25, 133-143	6.8	170
244	Anthropogenic cycles of the elements: a critical review. <i>Environmental Science & Technology</i> , 2012 , 46, 8574-86	10.3	169
243	Copper demand, supply, and associated energy use to 2050. <i>Global Environmental Change</i> , 2016 , 39, 305-315	11.5	163
242	By-product metals are technologically essential but have problematic supply. <i>Science Advances</i> , 2015 , 1, e1400180	14.3	162
241	The contemporary anthropogenic chromium cycle. <i>Environmental Science & Technology</i> , 2006 , 40, 7060-9	10.3	159
240	Sunday and workday variations in photochemical air pollutants in new jersey and new york. <i>Science</i> , 1974 , 186, 1037-8	33.3	158
239	In-use stocks of metals: status and implications. <i>Environmental Science & Technology</i> , 2008 , 42, 7038-45	11.5	156
238	Twentieth century copper stocks and flows in North America: A dynamic analysis. <i>Ecological Economics</i> , 2005 , 54, 37-51	5.6	154
237	Buildings as a global carbon sink. <i>Nature Sustainability</i> , 2020 , 3, 269-276	22.1	151
236	Anthropogenic nickel cycle: insights into use, trade, and recycling. <i>Environmental Science & Technology</i> , 2008 , 42, 3394-400	10.3	151
235	On the mechanism of silver and copper sulfidation by atmospheric H ₂ S and OCS. <i>Corrosion Science</i> , 1985 , 25, 1163-1180	6.8	141
234	Global Rare Earth In-Use Stocks in NdFeB Permanent Magnets. <i>Journal of Industrial Ecology</i> , 2011 , 15, 836-843	7.2	139
233	The contemporary European copper cycle: waste management subsystem. <i>Ecological Economics</i> , 2002 , 42, 43-57	5.6	136

232	Kinetic studies of raindrop chemistry: 1. Inorganic and organic processes. <i>Journal of Geophysical Research</i> , 1983 , 88, 10865		135
231	A half-century of global phosphorus flows, stocks, production, consumption, recycling, and environmental impacts. <i>Global Environmental Change</i> , 2016 , 36, 139-152	10.1	132
230	Global emissions of hydrogen chloride and chloromethane from coal combustion, incineration and industrial activities: Reactive Chlorine Emissions Inventory. <i>Journal of Geophysical Research</i> , 1999 , 104, 8391-8403		130
229	Dynamic analysis of the global metals flows and stocks in electricity generation technologies. <i>Journal of Cleaner Production</i> , 2013 , 59, 260-273	10.3	128
228	Criticality of the geological copper family. <i>Environmental Science & Technology</i> , 2012 , 46, 1071-8	10.3	124
227	ON THE CONCEPT OF INDUSTRIAL ECOLOGY. <i>Annual Review of Environment and Resources</i> , 1996 , 21, 69-98		124
226	Silver emissions and their environmental impacts: a multilevel assessment. <i>Environmental Science & Technology</i> , 2007 , 41, 6283-9	10.3	123
225	Speciation, photosensitivity, and reactions of transition metal ions in atmospheric droplets. <i>Journal of Geophysical Research</i> , 1986 , 91, 5189		122
224	Criticality of the Rare Earth Elements. <i>Journal of Industrial Ecology</i> , 2015 , 19, 1044-1054	7.2	120
223	Lost by Design. <i>Environmental Science & Technology</i> , 2015 , 49, 9443-51	10.3	112
222	Terpenoids in the atmosphere. <i>Reviews of Geophysics</i> , 1979 , 17, 937	23.1	112
221	Corrosion Mechanisms for Aluminum Exposed to the Atmosphere. <i>Journal of the Electrochemical Society</i> , 1989 , 136, 204C-212C	3.9	111
220	On the Future Availability of the Energy Metals. <i>Annual Review of Materials Research</i> , 2011 , 41, 323-335	12.8	110
219	Copper patinas formed in the atmosphere. A qualitative assessment of mechanisms. <i>Corrosion Science</i> , 1987 , 27, 721-740	6.8	110
218	The energy benefit of stainless steel recycling. <i>Energy Policy</i> , 2008 , 36, 181-192	7.2	109
217	ELEMENTAL CYCLES: A Status Report on Human or Natural Dominance. <i>Annual Review of Environment and Resources</i> , 2004 , 29, 69-107	17.2	107
216	Corrosion Mechanisms for Iron and Low Alloy Steels Exposed to the Atmosphere. <i>Journal of the Electrochemical Society</i> , 1990 , 137, 2385-2394	3.9	107
215	Resource Demand Scenarios for the Major Metals. <i>Environmental Science & Technology</i> , 2018 , 52, 2491-2497	10.3	99

214	Dining at the periodic table: metals concentrations as they relate to recycling. <i>Environmental Science & Technology</i> , 2007 , 41, 1759-65	10.3	99
213	The contemporary European copper cycle: The characterization of technological copper cycles. <i>Ecological Economics</i> , 2002 , 42, 9-26	5.6	97
212	A compilation of inventories of emissions to the atmosphere. <i>Global Biogeochemical Cycles</i> , 1993 , 7, 1-26	5.9	95
211	Influence of transition metal complexes on atmospheric droplet acidity. <i>Nature</i> , 1985 , 317, 240-242	50.4	95
210	Dynamic analysis of aluminum stocks and flows in the United States: 1900-2009. <i>Ecological Economics</i> , 2012 , 81, 92-102	5.6	94
209	The Multilevel Cycle of Anthropogenic Zinc. <i>Journal of Industrial Ecology</i> , 2005 , 9, 67-90	7.2	94
208	Contemporary anthropogenic silver cycle: a multilevel analysis. <i>Environmental Science & Technology</i> , 2005 , 39, 4655-65	10.3	93
207	Quantifying the recoverable resources of by-product metals: The case of cobalt. <i>Ore Geology Reviews</i> , 2013 , 55, 87-98	3.2	92
206	The contemporary European copper cycle: 1 year stocks and flows. <i>Ecological Economics</i> , 2002 , 42, 27-42	5.6	92
205	Matrix Approaches to Abridged Life Cycle Assessment. <i>Environmental Science & Technology</i> , 1995 , 29, 134A-139A	10.3	92
204	Industrial Ecosystems as Food Webs. <i>Journal of Industrial Ecology</i> , 2002 , 6, 29-38	7.2	90
203	The homogeneous chemistry of atmospheric sulfur. <i>Reviews of Geophysics</i> , 1977 , 15, 421	23.1	90
202	In-use product stocks link manufactured capital to natural capital. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015 , 112, 6265-70	11.5	86
201	Six Years of Criticality Assessments: What Have We Learned So Far?. <i>Journal of Industrial Ecology</i> , 2016 , 20, 692-699	7.2	84
200	Uncovering the end uses of the rare earth elements. <i>Science of the Total Environment</i> , 2013 , 461-462, 781-4	10.2	80
199	Industrial Ecology: The role of manufactured capital in sustainability. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015 , 112, 6260-4	11.5	78
198	Kinetic studies of the photochemistry of the urban troposphere. <i>Atmospheric Environment</i> , 1976 , 10, 1095-1116		77
197	The characterization of patina components by X-ray diffraction and evolved gas analysis. <i>Corrosion Science</i> , 1987 , 27, 669-684	6.8	76

196	The omnivorous diet of modern technology. <i>Resources, Conservation and Recycling</i> , 2013 , 74, 1-7	11.9	75
195	The Budget and Cycle of Earth's Natural Chlorine. <i>Pure and Applied Chemistry</i> , 1996 , 68, 1689-1697	2.1	75
194	The contemporary European copper cycle: statistical entropy analysis. <i>Ecological Economics</i> , 2002 , 42, 59-72	5.6	74
193	Criticality of iron and its principal alloying elements. <i>Environmental Science & Technology</i> , 2014 , 48, 4171-7	10.3	71
192	Spatial characterisation of multi-level in-use copper and zinc stocks in Australia. <i>Journal of Cleaner Production</i> , 2007 , 15, 849-861	10.3	71
191	Tracking the metal of the goblins: cobalt's cycle of use. <i>Environmental Science & Technology</i> , 2012 , 46, 1079-86	10.3	69
190	The characterization of technological zinc cycles. <i>Resources, Conservation and Recycling</i> , 2003 , 39, 107-135	5.9	69
189	Uncovering the global life cycles of the rare earth elements. <i>Scientific Reports</i> , 2011 , 1, 145	4.9	68
188	Metal spectra as indicators of development. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2010 , 107, 20905-10	11.5	66
187	Getting serious about sustainability. <i>Environmental Science & Technology</i> , 2002 , 36, 523-9	10.3	65
186	Copper mines above and below the ground. <i>Environmental Science & Technology</i> , 2006 , 40, 3135-41	10.3	64
185	The potential for mining trace elements from phosphate rock. <i>Journal of Cleaner Production</i> , 2015 , 91, 337-346	10.3	61
184	Reduced sulfur emission from the open oceans. <i>Geophysical Research Letters</i> , 1979 , 6, 329-331	4.9	61
183	Photochemical air pollution in the northeast United States. <i>Science</i> , 1979 , 204, 1273-8	33.3	61
182	Gildes model studies of aqueous chemistry. I. Formulation and potential applications of the multi-regime model. <i>Corrosion Science</i> , 1996 , 38, 2153-2180	6.8	58
181	The reaction of simulated rain with copper, copper patina, and some copper compounds. <i>Corrosion Science</i> , 1987 , 27, 703-719	6.8	56
180	Dysprosium, the balance problem, and wind power technology. <i>Applied Energy</i> , 2014 , 136, 548-559	10.7	55
179	Copper patinas formed in the atmosphereIII. A semi-quantitative assessment of rates and constraints in the greater New York metropolitan area. <i>Corrosion Science</i> , 1987 , 27, 741-769	6.8	54

178	Degradation of materials in the atmosphere. <i>Environmental Science & Technology</i> , 1986 , 20, 1093-1100	3	54
177	Criticality of the Geological Zinc, Tin, and Lead Family. <i>Journal of Industrial Ecology</i> , 2015 , 19, 628-644	7.2	53
176	The multilevel cycle of anthropogenic lead. <i>Resources, Conservation and Recycling</i> , 2008 , 52, 1050-1057	11.9	53
175	Exploratory data analysis in the geophysical sciences. <i>Reviews of Geophysics</i> , 1980 , 18, 699	23.1	53
174	Anthropogenic emissions of trichloromethane (chloroform, CHCl ₃) and chlorodifluoromethane (HCFC-22): Reactive Chlorine Emissions Inventory. <i>Journal of Geophysical Research</i> , 1999 , 104, 8405-8415		52
173	On the possible increase of the atmospheric methane and carbon monoxide concentrations during the last decade. <i>Geophysical Research Letters</i> , 1980 , 7, 977-979	4.9	50
172	Material Flow Analysis from Origin to Evolution. <i>Environmental Science & Technology</i> , 2019 , 53, 12188-12196	88.3	49
171	Global stainless steel cycle exemplifies China's rise to metal dominance. <i>Environmental Science & Technology</i> , 2010 , 44, 3940-6	10.3	49
170	The kinetic photochemistry of the marine atmosphere. <i>Journal of Geophysical Research</i> , 1979 , 84, 273		49
169	The contemporary European zinc cycle: 1-year stocks and flows. <i>Resources, Conservation and Recycling</i> , 2003 , 39, 137-160	11.9	47
168	Global Emissions and Models of Photochemically Active Compounds 1994 , 223-247		47
167	Anthropogenic nickel supply, demand, and associated energy and water use. <i>Resources, Conservation and Recycling</i> , 2017 , 125, 300-307	11.9	46
166	Solar cell metals and their hosts: A tale of oversupply and undersupply. <i>Applied Energy</i> , 2015 , 158, 167-177	17.7	44
165	Where has all the copper gone: The stocks and flows project, part 1. <i>Jom</i> , 2002 , 54, 21-26	2.1	44
164	. <i>Tellus, Series B: Chemical and Physical Meteorology</i> , 1988 , 40B, 335-339	3.3	44
163	Statistical analysis of Salmonella test data and comparison to results of animal cancer tests. <i>Mutation Research - Genetic Toxicology Testing and Biomonitoring of Environmental Or Occupational Exposure</i> , 1988 , 205, 183-95		44
162	Ozone concentrations in new jersey and new york: statistical association with related variables. <i>Science</i> , 1974 , 186, 257-9	33.3	44
161	On the sustainability of metal supplies: A response to Tilton and Lagos. <i>Resources Policy</i> , 2007 , 32, 24-28	7.2	42

160	Lead In-Use Stock. <i>Journal of Industrial Ecology</i> , 2009 , 13, 112-126	7.2	41
159	Impact of the establishment of US offshore wind power on neodymium flows. <i>Nature Sustainability</i> , 2019 , 2, 332-338	22.1	40
158	Will metal scarcity impede routine industrial use?. <i>MRS Bulletin</i> , 2012 , 37, 325-331	3.2	40
157	Industrial ecology: a teenager's progress. <i>Technology in Society</i> , 2004 , 26, 433-445	6.3	40
156	Carbonyl sulfide: potential agent of atmospheric sulfur corrosion. <i>Science</i> , 1981 , 212, 663-5	33.3	40
155	Global anthropogenic tellurium cycles for 1940-2010. <i>Resources, Conservation and Recycling</i> , 2013 , 76, 21-26	11.9	39
154	Metal Dissipation and Inefficient Recycling Intensify Climate Forcing. <i>Environmental Science & Technology</i> , 2016 , 50, 11394-11402	10.3	39
153	Implications of Emerging Vehicle Technologies on Rare Earth Supply and Demand in the United States. <i>Resources</i> , 2018 , 7, 9	3.7	38
152	The multilevel cycle of anthropogenic lead. <i>Resources, Conservation and Recycling</i> , 2008 , 52, 1058-1064	11.9	38
151	Exploratory data analysis of the multilevel anthropogenic copper cycle. <i>Environmental Science & Technology</i> , 2004 , 38, 1253-61	10.3	38
150	The corrosion of copper by atmospheric sulphurous gases. <i>Corrosion Science</i> , 1983 , 23, 1141-1152	6.8	37
149	Deriving the Metal and Alloy Networks of Modern Technology. <i>Environmental Science & Technology</i> , 2016 , 50, 4082-90	10.3	36
148	Metal capital sustaining a North American city: Iron and copper in New Haven, CT. <i>Resources, Conservation and Recycling</i> , 2007 , 49, 406-420	11.9	36
147	Field measurements of submicron aerosol washout by snow. <i>Geophysical Research Letters</i> , 1975 , 2, 325-328	3.7	36
146	Urban formaldehyde: Observed correlation with source emissions and photochemistry. <i>Atmospheric Environment</i> , 1977 , 11, 357-360		36
145	Building the Material Flow Networks of Aluminum in the 2007 U.S. Economy. <i>Environmental Science & Technology</i> , 2016 , 50, 3905-12	10.3	36
144	Gildes model studies of aqueous chemistry. III. Initial SO ₂ -induced atmospheric corrosion of copper. <i>Corrosion Science</i> , 1996 , 38, 2201-2224	6.8	35
143	Global anthropogenic selenium cycles for 1940-2010. <i>Resources, Conservation and Recycling</i> , 2013 , 73, 17-22	11.9	34

142	Exploring the Global Journey of Nickel with Markov Chain Models. <i>Journal of Industrial Ecology</i> , 2012 , 16, 334-342	7.2	33
141	Life-Cycle Assessment in the Service Industries. <i>Journal of Industrial Ecology</i> , 1997 , 1, 57-70	7.2	33
140	Earth's anthrobiogeochemical copper cycle. <i>Global Biogeochemical Cycles</i> , 2007 , 21, n/a-n/a	5.9	33
139	Gildes model studies of aqueous chemistry. II. The corrosion of zinc in gaseous exposure chambers. <i>Corrosion Science</i> , 1996 , 38, 2181-2199	6.8	32
138	Life cycle carbon benefits of aerospace alloy recycling. <i>Journal of Cleaner Production</i> , 2014 , 80, 38-45	10.3	31
137	The criticality of four nuclear energy metals. <i>Resources, Conservation and Recycling</i> , 2015 , 95, 193-201	11.9	31
136	Aluminium in-use stocks in the state of Connecticut. <i>Resources, Conservation and Recycling</i> , 2008 , 52, 1271-1282	11.9	31
135	The contemporary European silver cycle. <i>Resources, Conservation and Recycling</i> , 2006 , 46, 27-43	11.9	31
134	Losses to the environment from the multilevel cycle of anthropogenic lead. <i>Environmental Pollution</i> , 2009 , 157, 2670-7	9.3	30
133	Quantitative guidelines for urban sustainability. <i>Technology in Society</i> , 2006 , 28, 45-61	6.3	30
132	The contemporary copper cycle of Asia. <i>Journal of Material Cycles and Waste Management</i> , 2003 , 5, 143-156	11.9	30
131	Photochemistry of the "Sunday Effect". <i>Environmental Science & Technology</i> , 1977 , 11, 690-694	10.3	30
130	Structural Investigation of Aluminum in the U.S. Economy using Network Analysis. <i>Environmental Science & Technology</i> , 2016 , 50, 4091-101	10.3	30
129	Anthropogenic metal cycles in China. <i>Journal of Material Cycles and Waste Management</i> , 2008 , 10, 188-197	11.9	29
128	Bottom-up study of in-use nickel stocks in New Haven, CT. <i>Resources, Conservation and Recycling</i> , 2007 , 50, 58-70	11.9	28
127	The contemporary Latin American and Caribbean copper cycle: 1 year stocks and flows. <i>Resources, Conservation and Recycling</i> , 2004 , 41, 23-46	11.9	28
126	Mapping supply chain risk by network analysis of product platforms. <i>Sustainable Materials and Technologies</i> , 2016 , 10, 14-22	5.3	27
125	Employing Considerations of Criticality in Product Design. <i>Jom</i> , 2014 , 66, 2360-2366	2.1	27

124	Improved alternatives for estimating in-use material stocks. <i>Environmental Science & Technology</i> , 2015 , 49, 3048-55	10.3	27
123	Early solar mass loss: A potential solution to the weak sun paradox. <i>Geophysical Research Letters</i> , 1991 , 18, 1881-1884	4.9	27
122	Peer reviewed: the evolution of industrial ecology. <i>Environmental Science & Technology</i> , 2000 , 34, 28A-31A	10.3	26
121	Criticality of Seven Specialty Metals. <i>Journal of Industrial Ecology</i> , 2016 , 20, 837-853	7.2	26
120	Illuminating tungsten's life cycle in the United States: 1975-2000. <i>Environmental Science & Technology</i> , 2008 , 42, 3835-42	10.3	25
119	Graphical presentation of results from scientific computer models. <i>Science</i> , 1982 , 215, 1191-8	33.3	25
118	Toward Financially Viable Phytoextraction and Production of Plant-Based Palladium Catalysts. <i>Environmental Science & Technology</i> , 2017 , 51, 2992-3000	10.3	24
117	Copper and zinc recycling in Australia: potential quantities and policy options. <i>Journal of Cleaner Production</i> , 2007 , 15, 862-877	10.3	24
116	Hierarchical metrics for sustainability. <i>Environmental Quality Management</i> , 2002 , 12, 21-30	0.8	24
115	The Atmospheric Sulfidation of Copper Single Crystals. <i>Journal of the Electrochemical Society</i> , 1987 , 134, 1632-1635	3.9	24
114	United States plastics: Large flows, short lifetimes, and negligible recycling. <i>Resources, Conservation and Recycling</i> , 2021 , 167, 105440	11.9	23
113	Regional development or resource preservation? A perspective from Japanese appliance exports. <i>Ecological Economics</i> , 2011 , 70, 788-797	5.6	22
112	Mechanisms for the Atmospheric Corrosion of Carbonate Stone. <i>Journal of the Electrochemical Society</i> , 2000 , 147, 1006	3.9	22
111	Ozone- and photon-enhanced atmospheric sulfidation of copper. <i>Science</i> , 1984 , 224, 599-601	33.3	22
110	Research issues in sustainable consumption: toward an analytical framework for materials and the environment. <i>Environmental Science & Technology</i> , 2003 , 37, 5383-8	10.3	21
109	Global emissions inventories of acid-related compounds. <i>Water, Air, and Soil Pollution</i> , 1995 , 85, 25-36	2.6	21
108	Explanatory Variables for per Capita Stocks and Flows of Copper and Zinc. <i>Journal of Industrial Ecology</i> , 2008 , 10, 111-132	7.2	20
107	Making Metals Count: Applications of Material Flow Analysis. <i>Environmental Engineering Science</i> , 2006 , 23, 493-506	2	20

106	How Black swan disruptions impact minor metals. <i>Resources Policy</i> , 2017 , 54, 88-96	7.2	19
105	Potential Corrosion of Metals by Atmospheric Organic Acids. <i>Journal of the Electrochemical Society</i> , 1986 , 133, 452-453	3.9	19
104	Exploring future copper demand, recycling and associated greenhouse gas emissions in the EU-28. <i>Global Environmental Change</i> , 2020 , 63, 102093	10.1	19
103	Metal Criticality Determination for Australia, the US, and the Planet—Comparing 2008 and 2012 Results. <i>Resources</i> , 2016 , 5, 29	3.7	19
102	Aluminum in-use stocks in China: a bottom-up study. <i>Journal of Material Cycles and Waste Management</i> , 2010 , 12, 66-82	3.4	18
101	The Hidden Trade of Metals in the United States. <i>Journal of Industrial Ecology</i> , 2008 , 12, 739-753	7.2	18
100	Carbon dioxide in the urban atmosphere: Dependencies and trends. <i>Journal of Geophysical Research</i> , 1979 , 84, 5011		18
99	The oxidation of ammonia, hydrogen sulfide, and methane in nonurban tropospheres. <i>Journal of Geophysical Research</i> , 1977 , 82, 5917-5922		18
98	The contemporary Asian silver cycle: 1-year stocks and flows. <i>Journal of Material Cycles and Waste Management</i> , 2005 , 7, 93-103	3.4	17
97	Quantitative sustainability in a college or university setting. <i>International Journal of Sustainability in Higher Education</i> , 2002 , 3, 346-358	3.9	17
96	Conditioned Air—Evaluating an Environmentally Preferable Service. <i>Environmental Science & Technology</i> , 2000 , 34, 541-545	10.3	17
95	Preface [to special section on Reactive Chlorine Emissions Inventory (RCEI)]. <i>Journal of Geophysical Research</i> , 1999 , 104, 8331-8332		17
94	. <i>At&T Technical Journal</i> , 1995 , 74, 17-25		17
93	Corrosion-Related Aspects of the Chemistry and Frequency of Occurrence of Precipitation. <i>Journal of the Electrochemical Society</i> , 1986 , 133, 2476-2482	3.9	17
92	On the Spatial Dimension of the Circular Economy. <i>Resources</i> , 2019 , 8, 32	3.7	16
91	On the corrosion resistance of certain ancient chinese bronze artifacts. <i>Corrosion Science</i> , 1983 , 23, 241-250	7.5	16
90	Should we mine the deep seafloor?. <i>Earth's Future</i> , 2017 , 5, 655-658	7.9	16
89	Global Human Appropriation of Net Primary Production and Associated Resource Decoupling: 2010-2050. <i>Environmental Science & Technology</i> , 2018 , 52, 1208-1215	10.3	15

88	Material substitution: a resource supply perspective. <i>Resources, Conservation and Recycling</i> , 2002 , 34, 107-115	11.9	15
87	Green Chemistry and Sustainable Development 56-61		15
86	Atmospheric Sulfidation of Copper Alloys: I. Brasses and Bronzes. <i>Journal of the Electrochemical Society</i> , 1984 , 131, 505-511	3.9	15
85	Where is all the zinc going: The stocks and flows project, Part 2. <i>Jom</i> , 2004 , 56, 24-29	2.1	14
84	2-D studies of the kinetic photochemistry of the urban troposphere. I. Air stagnation conditions. <i>Atmospheric Environment</i> , 1981 , 15, 163-176		14
83	Sulfur dioxide, sulfate aerosol, and urban ozone. <i>Geophysical Research Letters</i> , 1976 , 3, 181-184	4.9	14
82	Grand Challenges in Metal Life Cycles. <i>Natural Resources Research</i> , 2018 , 27, 181-190	4.9	13
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