Catherine A Peters

List of Publications by Year
in descending order

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102

papers

4,776

citations

117625

34

h-index

102487

66

g-index

103

all docs

103

docs citations

103

times ranked

4033

citing authors

#	Article	IF	Citations
1	Forsterite dissolution and magnesite precipitation at conditions relevant for deep saline aquifer storage and sequestration of carbon dioxide. Chemical Geology, 2005, 217, 257-276.	3.3	322
2	Wastewater treatment for carbon capture and utilization. Nature Sustainability, 2018, 1, 750-758.	23.7	299
3	Upscaling geochemical reaction rates using pore-scale network modeling. Advances in Water Resources, 2006, 29, 1351-1370.	3.8	283
4	Homogenization of the terrestrial water cycle. Nature Geoscience, 2020, 13, 656-658.	12.9	242
5	Peer Reviewed: Safe Storage of CO2 in Deep Saline Aquifiers. Environmental Science & Technology, 2002, 36, 240A-245A.	10.0	220
6	Long-Term Composition Dynamics of PAH-Containing NAPLs and Implications for Risk Assessment. Environmental Science & Technology, 1999, 33, 4499-4507.	10.0	184
7	Remediating tar-contaminated soils at manufactured gas plant sites. Environmental Science & Technology, 1994, 28, 266A-276A.	10.0	170
8	Coal tar dissolution in water-miscible solvents: experimental evaluation. Environmental Science & Technology, 1993, 27, 2831-2843.	10.0	150
9	Thermal drawdown-induced flow channeling in a single fracture in EGS. Geothermics, 2016, 61, 46-62.	3.4	138
10	Accessibilities of reactive minerals in consolidated sedimentary rock: An imaging study of three sandstones. Chemical Geology, 2009, 265, 198-208.	3.3	129
11	Permeability evolution due to dissolution and precipitation of carbonates using reactive transport modeling in pore networks. Water Resources Research, 2013, 49, 6006-6021.	4.2	127
12	Solubilization of PAH Mixtures by a Nonionic Surfactant. Environmental Science & Technology, 1998, 32, 930-935.	10.0	125
13	Dissolution-Driven Permeability Reduction of a Fractured Carbonate Caprock. Environmental Engineering Science, 2013, 30, 187-193.	1.6	113
14	Polycyclic Aromatic Hydrocarbon Biodegradation Rates:Â A Structure-Based Study. Environmental Science & Technology, 2005, 39, 2571-2578.	10.0	112
15	Deterioration of a fractured carbonate caprock exposed to CO₂â€acidified brine flow. , 2011, 1, 248-260.		106
16	Multisubstrate biodegradation kinetics of naphthalene, phenanthrene, and pyrene mixtures. , 1999, 65, 491-499.		101
17	Alterations of Fractures in Carbonate Rocks by CO₂-Acidified Brines. Environmental Science & Technology, 2015, 49, 10226-10234.	10.0	93
18	Mass Transfer of Polynuclear Aromatic Hydrocarbons from Complex DNAPL Mixtures. Environmental Science & Technology, 1997, 31, 416-423.	10.0	89

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19	Bioavailability of Mixtures of PAHs Partitioned into the Micellar Phase of a Nonionic Surfactant. Environmental Science & Technology, 1998, 32, 2317-2324.	10.0	87
20	Modifications of Carbonate Fracture Hydrodynamic Properties by CO₂-Acidified Brine Flow. Energy & Fuels, 2013, 27, 4221-4231.	5.1	83
21	Effects of mineral spatial distribution on reaction rates in porous media. Water Resources Research, 2007, 43, .	4.2	82
22	2D and 3D imaging resolution trade-offs in quantifying pore throats for prediction of permeability. Advances in Water Resources, 2013, 62, 1-12.	3.8	70
23	Caprock Fracture Dissolution and CO2 Leakage. Reviews in Mineralogy and Geochemistry, 2013, 77, 459-479.	4.8	64
24	Dissolution Potential of SO₂ Co-Injected with CO₂ in Geologic Sequestration. Environmental Science & Technology, 2010, 44, 349-355.	10.0	58
25	Upscaling geochemical reaction rates accompanying acidic CO₂â€saturated brine flow in sandstone aquifers. Water Resources Research, 2011, 47, .	4.2	58
26	Quantifying fracture geometry with X-ray tomography: Technique of Iterative Local Thresholding (TILT) for 3D image segmentation. Computational Geosciences, 2016, 20, 231-244.	2.4	57
27	Risk Assessment for Polycyclic Aromatic Hydrocarbon NAPLs Using Component Fractions. Environmental Science & Technology, 1999, 33, 4357-4363.	10.0	56
28	Limitations for brine acidification due to SO2 co-injection in geologic carbon sequestration. International Journal of Greenhouse Gas Control, 2010, 4, 575-582.	4.6	55
29	Leakage risks of geologic CO2 storage and the impacts on the global energy system and climate change mitigation. Climatic Change, 2017, 144, 151-163.	3.6	54
30	Phase Stability of Multicomponent NAPLs Containing PAHs. Environmental Science & Technology, 1997, 31, 2540-2546.	10.0	52
31	Scale formation in porous media and its impact on reservoir performance during water flooding. Journal of Natural Gas Science and Engineering, 2017, 39, 188-202.	4.4	52
32	Statistical analysis of nonlinear parameter estimation for monod biodegradation kinetics using bivariate data. , 2000, 69, 160-170.		51
33	Aqueous Phase Biodegradation Kinetics of 10 PAH Compounds. Environmental Engineering Science, 2003, 20, 207-218.	1.6	44
34	Applicability of averaged concentrations in determining geochemical reaction rates in heterogeneous porous media. Numerische Mathematik, 2007, 307, 1146-1166.	1.4	42
35	Causes and financial consequences of geologic CO2 storage reservoir leakage and interference with other subsurface resources. International Journal of Greenhouse Gas Control, 2014, 20, 272-284.	4.6	39
36	An examination of geologic carbon sequestration policies in the context of leakage potential. International Journal of Greenhouse Gas Control, 2015, 37, 61-75.	4.6	39

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37	The Leakage Risk Monetization Model for Geologic CO₂ Storage. Environmental Science & Technology, 2016, 50, 4923-4931.	10.0	39
38	MULTISUBSTRATE BIODEGRADATION KINETICS FOR BINARY AND COMPLEX MIXTURES OF POLYCYCLIC AROMATIC HYDROCARBONS. Environmental Toxicology and Chemistry, 2006, 25, 1746.	4.3	36
39	Changes in the pore network structure of Hanford sediment after reaction with caustic tank wastes. Journal of Contaminant Hydrology, 2012, 131, 89-99.	3.3	36
40	Advancing ecohydrology in the 21st century: A convergence of opportunities. Ecohydrology, 2020, 13, e2208.	2.4	34
41	Changes in microbiological metabolism under chemical stress. Chemosphere, 2008, 71, 474-483.	8.2	32
42	3D Mapping of calcite and a demonstration of its relevance to permeability evolution in reactive fractures. Advances in Water Resources, 2016, 95, 246-253.	3.8	30
43	Semiempirical Thermodynamic Modeling of Liquid-Liquid Phase Equilibria: Coal Tar Dissolution in Water-Miscible Solvents. Environmental Science & Technology, 1994, 28, 1331-1340.	10.0	28
44	Influence of Rock Mineralogy on Reactive Fracture Evolution in Carbonate-Rich Caprocks. Environmental Science & Technology, 2018, 52, 10144-10152.	10.0	28
45	Multicomponent NAPL Solidification Thermodynamics. Transport in Porous Media, 2000, 38, 57-77.	2.6	27
46	Unifac modeling of multicomponent nonaqueous phase liquids containing polycyclic aromatic hydrocarbons. Environmental Toxicology and Chemistry, 1999, 18, 426-429.	4.3	23
47	Metals Coprecipitation with Barite: Nano-XRF Observation of Enhanced Strontium Incorporation. Environmental Engineering Science, 2020, 37, 235-245.	1.6	22
48	UNIFAC Modeling of Cosolvent Phase Partitioning in Nonaqueous Phase Liquid-Water Systems. Journal of Environmental Engineering, ASCE, 2004, 130, 478-483.	1.4	21
49	Changes in caprock integrity due to vertical migration of CO2 -enriched brine. Energy Procedia, 2011, 4, 5327-5334.	1.8	21
50	Nanospectroscopy Captures Nanoscale Compositional Zonation in Barite Solid Solutions. Scientific Reports, 2018, 8, 13041.	3.3	21
51	Impacts of Diffusive Transport on Carbonate Mineral Formation from Magnesium Silicate-CO₂-Water Reactions. Environmental Science & Technology, 2014, 48, 14344-14351.	10.0	20
52	GIS analysis of urban schoolyard landcover in three U.S. cities. Urban Ecosystems, 2008, 11, 65-80.	2.4	19
53	Reactive Transport Simulation of Fracture Channelization and Transmissivity Evolution. Environmental Engineering Science, 2019, 36, 90-101.	1.6	19
54	SMART mineral mapping: Synchrotron-based machine learning approach for 2D characterization with coupled micro XRF-XRD. Computers and Geosciences, 2021, 156, 104898.	4.2	19

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55	A MOLECULAR MODELING ANALYSIS OF POLYCYCLIC AROMATIC HYDROCARBON BIODEGRADATION BY NAPHTHALENE DIOXYGENASE. Environmental Toxicology and Chemistry, 2006, 25, 912.	4.3	17
56	Coprecipitation of Heavy Metals in Calcium Carbonate from Coal Fly Ash Leachate. ACS ES&T Water, 2021, 1, 339-345.	4.6	17
57	Calcium Silicate Crystal Structure Impacts Reactivity with CO₂ and Precipitate Chemistry. Environmental Science and Technology Letters, 2018, 5, 558-563.	8.7	16
58	Acid Erosion of Carbonate Fractures and Accessibility of Arsenic-Bearing Minerals: In Operando Synchrotron-Based Microfluidic Experiment. Environmental Science & Technology, 2020, 54, 12502-12510.	10.0	16
59	Collapse of Reacted Fracture Surface Decreases Permeability and Frictional Strength. Journal of Geophysical Research: Solid Earth, 2019, 124, 12799-12811.	3.4	15
60	Reply to â€œComment on upscaling geochemical reaction rates using pore-scale network modelingâ€•by Peter C. Lichtner and Qinjun Kang. Advances in Water Resources, 2007, 30, 691-695.	3.8	14
61	Simulations of longâ€column flow experiments related to geologic carbon sequestration: effects of outer wall boundary condition on upward flow and formation of liquid CO₂. , 2012, 2, 279-303.		14
62	The Leakage Impact Valuation (LIV) Method for Leakage from Geologic CO2 Storage Reservoirs. Energy Procedia, 2013, 37, 2819-2827.	1.8	13
63	Mitigating Climate Change at the Carbon Water Nexus: A Call to Action for the Environmental Engineering Community. Environmental Engineering Science, 2016, 33, 719-724.	1.6	12
64	Citizen Science for Dissolved Oxygen Monitoring: Case Studies from Georgia and Rhode Island. Environmental Engineering Science, 2018, 35, 362-372.	1.6	12
65	Peak grain forecasts for the US High Plains amid withering waters. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 26145-26150.	7.1	12
66	The Foodâ€“Energyâ€“Water Nexus: Security, Sustainability, and Systems Perspectives. Environmental Engineering Science, 2019, 36, 761-762.	1.6	11
67	Targeted Permeability Control in the Subsurface via Calcium Silicate Carbonation. Environmental Science & Technology, 2019, 53, 7136-7144.	10.0	10
68	Addressing Water and Energy Challenges with Reactive Transport Modeling. Environmental Engineering Science, 2021, 38, 109-114.	1.6	10
69	Educating Heads, Hands, and Hearts in the COVID-19 Classroom. Environmental Engineering Science, 2020, 37, 303-303.	1.6	9
70	Fieldâ€Scale Modeling of CO₂ Mineral Trapping in Reactive Rocks: A Vertically Integrated Approach. Water Resources Research, 2022, 58, e2021WR030626.	4.2	8
71	A Methodology for Monetizing Basin-Scale Leakage Risk and Stakeholder Impacts. Energy Procedia, 2013, 37, 4665-4672.	1.8	7
72	Sealing Porous Media through Calcium Silicate Reactions with CO₂ to Enhance the Security of Geologic Carbon Sequestration. Environmental Engineering Science, 2021, 38, 127-142.	1.6	7

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73	Global Environmental Engineering for and with Historically Marginalized Communities. Environmental Engineering Science, 2021, 38, 285-287.	1.6	7
74	Quantification of mineral reactivity using machine learning interpretation of micro-XRF data. Applied Geochemistry, 2022, 136, 105162.	3.0	7
75	Think-Pair-Listen in the Online COVID-19 Classroom. Environmental Engineering Science, 2020, 37, 647-648.	1.6	6
76	Feasibility of using reactive silicate particles with temperature-responsive coatings to enhance the security of geologic carbon storage. International Journal of Greenhouse Gas Control, 2020, 95, 102976.	4.6	5
77	Adaptations in microbiological populations exposed to dinitrophenol and other chemical stressors. Environmental Toxicology and Chemistry, 2010, 29, 2161-2168.	4.3	3
78	Public policy model for the indoor radon problem. Mathematical and Computer Modelling, 1988, 10, 349-358.	2.0	2
79	LUCI: A facility at DUSEL for large-scale experimental study of geologic carbon sequestration. Energy Procedia, 2011, 4, 5050-5057.	1.8	2
80	Tomographic Investigations Relevant to the Rhizosphere. SSSA Special Publication Series, 2015, , 23-38.	0.2	2
81	Policy implications of Monetized Leakage Risk from Geologic CO2 Storage Reservoirs. Energy Procedia, 2014, 63, 6852-6863.	1.8	1
82	AEESP Journal Spotlight: Early 2016. Environmental Engineering Science, 2016, 33, 148-148.	1.6	0
83	<i>Book Review: Pore-Scale Geochemical Processes, RIMG Volume 80</i>, ed. by Carl I. Steefel, Simon Emmanuel, and Lawrence M. Anovitz. American Mineralogist, 2016, 101, 2574-2575.	1.9	0
84	AEESP Journal Spotlight: Late 2016. Environmental Engineering Science, 2016, 33, 839-839.	1.6	0
85	AEESP Journal Spotlight: Early 2017. Environmental Engineering Science, 2017, 34, 138-138.	1.6	0
86	AEESP Journal Spotlight: Mid 2017. Environmental Engineering Science, 2017, 34, 460-460.	1.6	0
87	Monetizing Leakage Risk with Secondary Trapping in Intervening Stratigraphic Layers. Energy Procedia, 2017, 114, 4256-4261.	1.8	0
88	AEESP Journal Spotlight: Late 2017. Environmental Engineering Science, 2017, 34, 771-771.	1.6	0
89	AEESP Journal Spotlight: Late 2018. Environmental Engineering Science, 2018, 35, 1148-1149.	1.6	0
90	AEESP Journal Spotlight: Mid 2018. Environmental Engineering Science, 2018, 35, 662-662.	1.6	0

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91	AEESP Journal Spotlight: Early 2018. Environmental Engineering Science, 2018, 35, 141-141.	1.6	0
92	AEESP Journal Spotlight: Mid-2019. Environmental Engineering Science, 2019, 36, 760-760.	1.6	0
93	AEESP Journal Spotlight: Early 2019. Environmental Engineering Science, 2019, 36, 262-263.	1.6	0
94	AEESP Journal Spotlight: Late 2019. Environmental Engineering Science, 2019, 36, 1367-1368.	1.6	0
95	AEESP Journal Spotlight: Early 2020. Environmental Engineering Science, 2020, 37, 169-170.	1.6	0
96	AEESP Spotlight: Mid 2020. Environmental Engineering Science, 2020, 37, 457-458.	1.6	0
97	AEESP Spotlight: Early 2021. Environmental Engineering Science, 2021, 38, 107-108.	1.6	0
98	AEESP Spotlight: Mid 2021. Environmental Engineering Science, 2021, 38, 575-576.	1.6	0
99	AEESP Spotlight: Late 2021. Environmental Engineering Science, 2021, 38, 1010-1011.	1.6	0
100	AEESP Spotlight: Late 2020. Environmental Engineering Science, 2020, 37, 715-716.	1.6	0
101	AEESP Spotlight: Early 2022. Environmental Engineering Science, 2022, 39, 193-194.	1.6	0
102	AEESP Spotlight: Mid 2022. Environmental Engineering Science, 2022, 39, 584-585.	1.6	0