Carolyn I Pearce

List of Publications by Year
in descending order

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Version: 2024-02-01

90	2,215	218677	254184
papers	citations	26 h-index	43 g-index

92	92	92	2387
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Redox cycling of Fe(II) and Fe(III) in magnetite by Fe-metabolizing bacteria. Science, 2015, 347, 1473-1476.	12.6	239
2	Successful Decontamination of ⁹⁹TcO₄^{â˜’} in Groundwater at Legacy Nuclear Sites by a Cationic Metalâ€Organic Framework with Hydrophobic Pockets. Angewandte Chemie - International Edition, 2019, 58, 4968-4972.	13.8	177
3	Polystyrene nano- and microplastic accumulation at Arabidopsis and wheat root cap cells, but no evidence for uptake into roots. Environmental Science: Nano, 2020, 7, 1942-1953.	4.3	102
4	Size and Morphology Controlled Synthesis of Boehmite Nanoplates and Crystal Growth Mechanisms. Crystal Growth and Design, 2018, 18, 3596-3606.	3.0	82
5	Boehmite and Gibbsite Nanoplates for the Synthesis of Advanced Alumina Products. ACS Applied Nano Materials, 2018, 1, 7115-7128.	5.0	79
6	The Role of Defects in Fe(II)â€“Goethite Electron Transfer. Environmental Science & Technology, 2018, 52, 2751-2759.	10.0	76
7	Fe site occupancy in magnetite-ulvospinel solid solutions: A new approach using X-ray magnetic circular dichroism. American Mineralogist, 2010, 95, 425-439.	1.9	75
8	Labile Fe(III) from sorbed Fe(II) oxidation is the key intermediate in Fe(II)-catalyzed ferrihydrite transformation. Geochimica Et Cosmochimica Acta, 2020, 272, 105-120.	3.9	72
9	Reduction and Simultaneous Removal of ⁹⁹Tc and Cr by Fe(OH)₂(s) Mineral Transformation. Environmental Science & Technology, 2017, 51, 8635-8642.	10.0	68
10	Iodine immobilization by materials through sorption and redox-driven processes: A literature review. Science of the Total Environment, 2020, 716, 132820.	8.0	59
11	Fast Synthesis of Gibbsite Nanoplates and Process Optimization using Box-Behnken Experimental Design. Crystal Growth and Design, 2017, 17, 6801-6808.	3.0	47
12	Thermodynamics of the magnetite-ulvospinel (Fe3O4-Fe2TiO4) solid solution. American Mineralogist, 2012, 97, 1330-1338.	1.9	45
13	Fe_{3â€“x}Ti_xO₄ Nanoparticles as Tunable Probes of Microbial Metal Oxidation. Journal of the American Chemical Society, 2013, 135, 8896-8907.	13.7	43
14	Cr(III) Adsorption by Cluster Formation on Boehmite Nanoplates in Highly Alkaline Solution. Environmental Science & Technology, 2019, 53, 11043-11055.	10.0	42
15	Transitions in Al Coordination during Gibbsite Crystallization Using High-Field ²⁷Al and ²³Na MAS NMR Spectroscopy. Journal of Physical Chemistry C, 2017, 121, 27555-27562.	3.1	41
16	Tc(VII) and Cr(VI) Interaction with Naturally Reduced Ferruginous Smectite from a Redox Transition Zone. Environmental Science & Technology, 2017, 51, 9042-9052.	10.0	38
17	Successful Decontamination of ⁹⁹TcO₄^{â˜’} in Groundwater at Legacy Nuclear Sites by a Cationic Metalâ€Organic Framework with Hydrophobic Pockets. Angewandte Chemie, 2019, 131, 5022-5026.	2.0	37
18	Technetium Stabilization in Low-Solubility Sulfide Phases: A Review. ACS Earth and Space Chemistry, 2018, 2, 532-547.	2.7	36

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19	Forty years of durability assessment of nuclear waste glass by standard methods. Npj Materials Degradation, 2021, 5, .	5.8	35
20	Ab Initio Molecular Dynamics Reveal Spectroscopic Siblings and Ion Pairing as New Challenges for Elucidating Prenucleation Aluminum Speciation. Journal of Physical Chemistry B, 2018, 122, 7394-7402.	2.6	34
21	In Situ ²⁷Al NMR Spectroscopy of Aluminate in Sodium Hydroxide Solutions above and below Saturation with Respect to Gibbsite. Inorganic Chemistry, 2018, 57, 11864-11873.	4.0	33
22	Incorporation of Technetium into Spinel Ferrites. Environmental Science & Technology, 2016, 50, 13160-13168.	10.0	32
23	Reaction of U^{VI} with Titanium-Substituted Magnetite: Influence of Ti on U^{IV} Speciation. Environmental Science & Technology, 2013, 47, 4121-4130.	10.0	30
24	First-Principles Fe L_{2,3}-Edge and O K-Edge XANES and XMCD Spectra for Iron Oxides. Journal of Physical Chemistry A, 2017, 121, 7613-7618.	2.5	30
25	Radiolytic stability of gibbsite and boehmite with adsorbed water. Journal of Nuclear Materials, 2018, 501, 224-233.	2.7	30
26	Unraveling Gibbsite Transformation Pathways into LiAl-LDH in Concentrated Lithium Hydroxide. Inorganic Chemistry, 2019, 58, 12385-12394.	4.0	29
27	Getters for improved technetium containment in cementitious waste forms. Journal of Hazardous Materials, 2018, 341, 238-247.	12.4	25
28	A Closer Look at Fe(II) Passivation of Goethite. ACS Earth and Space Chemistry, 2019, 3, 2717-2725.	2.7	22
29	Stability, Composition, and Coreâ€“Shell Particle Structure of Uranium(IV)-Silicate Colloids. Environmental Science & Technology, 2018, 52, 9118-9127.	10.0	21
30	Nanoscale observations of Fe(<scp>ii</scp>)-induced ferrihydrite transformation. Environmental Science: Nano, 2020, 7, 2953-2967.	4.3	21
31	Reversible Fe(<scp>ii</scp>) uptake/release by magnetite nanoparticles. Environmental Science: Nano, 2018, 5, 1545-1555.	4.3	20
32	Transformation of Gibbsite to Boehmite in Caustic Aqueous Solution at Hydrothermal Conditions. Crystal Growth and Design, 2019, 19, 5557-5567.	3.0	19
33	Countercations Control Local Specific Bonding Interactions and Nucleation Mechanisms in Concentrated Water-in-Salt Solutions. Journal of Physical Chemistry Letters, 2019, 10, 3318-3325.	4.6	19
34	Technetium immobilization by materials through sorption and redox-driven processes: A literature review. Science of the Total Environment, 2020, 716, 132849.	8.0	19
35	Ionâ€“ion interactions enhance aluminum solubility in alkaline suspensions of nano-gibbsite (Î±-Al(OH)₃) with sodium nitrite/nitrate. Physical Chemistry Chemical Physics, 2020, 22, 4368-4378.	2.8	19
36	Hybrid Sorbents for ¹²⁹I Capture from Contaminated Groundwater. ACS Applied Materials & Interfaces, 2020, 12, 26113-26126.	8.0	19

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37	Redistribution of Electron Equivalents between Magnetite and Aqueous Fe2+ Induced by a Model Quinone Compound AQDS. Environmental Science & Technology, 2019, 53, 1863-1873.	10.0	18
38	The role of surface hydroxyls on the radiolysis of gibbsite and boehmite nanoplatelets. Journal of Hazardous Materials, 2020, 398, 122853.	12.4	18
39	Evaluation of materials for iodine and technetium immobilization through sorption and redox-driven processes. Science of the Total Environment, 2020, 716, 136167.	8.0	16
40	²⁷Al Pulsed Field Gradient, Diffusionâ€“NMR Spectroscopy of Solvation Dynamics and Ion Pairing in Alkaline Aluminate Solutions. Journal of Physical Chemistry B, 2018, 122, 10907-10912.	2.6	15
41	Crystallization and Phase Transformations of Aluminum (Oxy)hydroxide Polymorphs in Caustic Aqueous Solution. Inorganic Chemistry, 2021, 60, 9820-9832.	4.0	15
42	Resolving local configurational contributions to X-ray and neutron radial distribution functions within solutions of concentrated electrolytes â€“ a case study of concentrated NaOH. Physical Chemistry Chemical Physics, 2019, 21, 6828-6838.	2.8	14
43	Preâ€Viking Swedish hillfort glass: A prospective longâ€term alteration analogue for vitrified nuclear waste. International Journal of Applied Glass Science, 2018, 9, 540-554.	2.0	13
44	Coupled Multimodal Dynamics of Hydrogen-Containing Ion Networks in Water-Deficient, Sodium Hydroxide-Aluminate Solutions. Journal of Physical Chemistry B, 2018, 122, 12097-12106.	2.6	12
45	Cr(VI) Effect on Tc-99 Removal from Hanford Low-Activity Waste Simulant by Ferrous Hydroxide. Environmental Science & Technology, 2018, 52, 11752-11759.	10.0	11
46	Solid-State Recrystallization Pathways of Sodium Aluminate Hydroxy Hydrates. Inorganic Chemistry, 2020, 59, 6857-6865.	4.0	11
47	Impact of Ti Incorporation on Hydroxylation and Wetting of Fe₃O₄. Journal of Physical Chemistry C, 2017, 121, 19288-19295.	3.1	10
48	Characterisation and heat treatment of chloride-contaminated and humidified PuO2 samples. Journal of Nuclear Materials, 2018, 509, 654-666.	2.7	10
49	Spectroscopic Characterization of Aqua [fac-Tc(CO)₃]⁺ Complexes at High Ionic Strength. Inorganic Chemistry, 2018, 57, 6903-6912.	4.0	10
50	Silicate stabilisation of colloidal UO2 produced by uranium metal corrosion. Journal of Nuclear Materials, 2019, 526, 151751.	2.7	10
51	Two-step route to size and shape controlled gibbsite nanoplates and the crystal growth mechanism. CrystEngComm, 2020, 22, 2555-2565.	2.6	10
52	Intermediate Species in the Crystallization of Sodium Aluminate Hydroxy Hydrates. Journal of Physical Chemistry C, 2020, 124, 12337-12345.	3.1	10
53	Inference of principal species in caustic aluminate solutions through solid-state spectroscopic characterization. Dalton Transactions, 2020, 49, 5869-5880.	3.3	10
54	Magnetization Measurements and XMCD Studies on Ion Irradiated Iron Oxide and Core-Shell Iron/Iron-Oxide Nanomaterials. IEEE Transactions on Magnetics, 2014, 50, 1-5.	2.1	9

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55	Anticorrelated Contributions to Pre-edge Features of Aluminate Near-Edge X-ray Absorption Spectroscopy in Concentrated Electrolytes. Journal of Physical Chemistry Letters, 2018, 9, 2444-2449.	4.6	9
56	Reproduction of melting behavior for vitrified hillforts based on amphibolite, granite, and basalt lithologies. Scientific Reports, 2021, 11, 1272.	3.3	9
57	Characterizing Technetium in Subsurface Sediments for Contaminant Remediation. ACS Earth and Space Chemistry, 2018, 2, 1145-1160.	2.7	8
58	Interactions of HCl and H2O with the surface of PuO2. Journal of Nuclear Materials, 2019, 518, 256-264.	2.7	8
59	Mechanisms of Al³⁺ Dimerization in Alkaline Solutions. Inorganic Chemistry, 2020, 59, 18181-18189.	4.0	8
60	Effect of Cr(III) Adsorption on the Dissolution of Boehmite Nanoparticles in Caustic Solution. Environmental Science & Technology, 2020, 54, 6375-6384.	10.0	8
61	Hydroxide promotes ion pairing in the NaNO₂â€“NaOHâ€“H₂O system. Physical Chemistry Chemical Physics, 2021, 23, 112-122.	2.8	8
62	Radiolysis and Radiation-Driven Dynamics of Boehmite Dissolution Observed by In Situ Liquid-Phase TEM. Environmental Science & Technology, 2022, 56, 5029-5036.	10.0	8
63	Radiation damage in biotite mica by accelerated Î±-particles: A synchrotron microfocus X-ray diffraction and X-ray absorption spectroscopy studyk. American Mineralogist, 2016, 101, 928-942.	1.9	7
64	Influence of soluble oligomeric aluminum on precipitation in the Alâ€“KOHâ€“H2O system. Physical Chemistry Chemical Physics, 2020, 22, 24677-24685.	2.8	7
65	Structure, Magnetism, and the Interaction of Water with Ti-Doped Fe3O4 Surfaces. Langmuir, 2019, 35, 13872-13879.	3.5	6
66	Longâ€term accumulation, depth distribution, and speciation of silver nanoparticles in biosolidsâ€amended soils. Journal of Environmental Quality, 2020, 49, 1679-1689.	2.0	6
67	Molecular Examination of Ion-Pair Competition in Alkaline Aluminate Solutions Using In Situ Liquid SIMS. Analytical Chemistry, 2021, 93, 1068-1075.	6.5	6
68	Extending Zavitsasâ€™ hydration model to the thermodynamics of solute mixtures in water. Journal of Molecular Liquids, 2022, 347, 118309.	4.9	6
69	A Review of Bismuth(III)-Based Materials for Remediation of Contaminated Sites. ACS Earth and Space Chemistry, 2022, 6, 883-908.	2.7	6
70	Surface speciation and interactions between adsorbed chloride and water on cerium dioxide. Journal of Solid State Chemistry, 2018, 262, 16-25.	2.9	5
71	Kinetics of Co-Mingled ⁹⁹Tc and Cr Removal during Mineral Transformation of Ferrous Hydroxide. ACS Earth and Space Chemistry, 2020, 4, 218-228.	2.7	5
72	Niche Partitioning of Microbial Communities at an Ancient Vitrified Hillfort: Implications for Vitrified Radioactive Waste Disposal. Geomicrobiology Journal, 2021, 38, 36-56.	2.0	5

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73	Nitrate and nitrite incompatibility with hydroxide ions in concentrated NaOH solutions: Implications for hydroxide and gibbsite reactivity in alkaline nuclear waste. Fluid Phase Equilibria, 2021, 532, 112922.	2.5	5
74	Cluster defects in gibbsite nanoplates grown at acidic to neutral pH. Nanoscale, 2021, 13, 17373-17385.	5.6	5
75	Applying laboratory methods for durability assessment of vitrified material to archaeological samples. Npj Materials Degradation, 2021, 5, .	5.8	5
76	Influences on Subsurface Plutonium and Americium Migration. ACS Earth and Space Chemistry, 2021, 5, 279-294.	2.7	4
77	Theory-Guided Inelastic Neutron Scattering of Crystalline Alkaline Aluminate Salts Bearing Principal Motifs of Solution-State Species. Inorganic Chemistry, 2021, 60, 16223-16232.	4.0	4
78	Pu distribution among mixed waste components at the Hanford legacy site, USA and implications to long-term migration. Applied Geochemistry, 2022, , 105304.	3.0	4
79	Al27 NMR chemical shift of Al(OH)4â˜ calculated from first principles: Assessment of error cancellation in chemically distinct reference and target systems. Journal of Chemical Physics, 2020, 152, 134303.	3.0	3
80	²⁷Al NMR diffusometry of Al₁₃ Keggin nanoclusters. Magnetic Resonance in Chemistry, 2022, 60, 226-238.	1.9	3
81	Sorption of Strontium to Uraninite and Uranium(IV)â€“Silicate Nanoparticles. Langmuir, 2022, 38, 3090-3097.	3.5	3
82	Ion hydration controls self-diffusion in multicomponent aqueous electrolyte solutions of NaNO2-NaOH-H2O. Journal of Molecular Liquids, 2022, 360, 119441.	4.9	3
83	Characterization of Glass Alterations in Ancient Glass from Various Environments from Broborg, a Vitrified Swedish Hillfort. Microscopy and Microanalysis, 2020, 26, 2592-2593.	0.4	2
84	Photon-In/Photon-Out X-ray Free-Electron Laser Studies of Radiolysis. Applied Sciences (Switzerland), 2021, 11, 701.	2.5	1
85	The controlling role of atmosphere in dawsonite versus gibbsite precipitation from tetrahedral aluminate species. Dalton Transactions, 2021, 50, 13438-13446.	3.3	1
86	Isotopic Substitution Reveals the Importance of Aluminate Diffusion Dynamics in Gibbsite (Al(OH)₃) Crystallization from Alkaline Aqueous Solution. ACS Earth and Space Chemistry, 0, , .	2.7	1
87	Assessment of the reason for the vitrification of a wall at a hillfort. The example of Broborg in Sweden. Journal of Archaeological Science: Reports, 2022, 43, 103459.	0.5	1
88	Sodium site occupancy and phosphate speciation in natrophosphate are invariant to changes in NaF and Na₃PO₄ concentration. Inorganic Chemistry Frontiers, 0, , .	6.0	1
89	Radiation Damage Effects in Chlorite Investigated Using Microfocus Synchrotron Techniques. ACS Earth and Space Chemistry, 2019, 3, 652-662.	2.7	0
90	Solubility controls on plutonium and americium release in subsurface environments exposed to acidic processing wastes. Applied Geochemistry, 2023, 153, 105241.	3.0	0