

# Carolyn I Pearce

## List of Publications by Year in descending order

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90  
papers

2,215  
citations

218592

26  
h-index

254106

43  
g-index

92  
all docs

92  
docs citations

92  
times ranked

2387  
citing authors

#	ARTICLE	IF	CITATIONS
1	Redox cycling of Fe(II) and Fe(III) in magnetite by Fe-metabolizing bacteria. <i>Science</i> , 2015, 347, 1473-1476.	6.0	239
2	Successful Decontamination of $^{99}\text{TcO}_4^-$ in Groundwater at Legacy Nuclear Sites by a Cationic Metal-Organic Framework with Hydrophobic Pockets. <i>Angewandte Chemie - International Edition</i> , 2019, 58, 4968-4972.	7.2	177
3	Polystyrene nano- and microplastic accumulation at Arabidopsis and wheat root cap cells, but no evidence for uptake into roots. <i>Environmental Science: Nano</i> , 2020, 7, 1942-1953.	2.2	102
4	Size and Morphology Controlled Synthesis of Boehmite Nanoplates and Crystal Growth Mechanisms. <i>Crystal Growth and Design</i> , 2018, 18, 3596-3606.	1.4	82
5	Boehmite and Gibbsite Nanoplates for the Synthesis of Advanced Alumina Products. <i>ACS Applied Nano Materials</i> , 2018, 1, 7115-7128.	2.4	79
6	The Role of Defects in Fe(II)-Goethite Electron Transfer. <i>Environmental Science &amp; Technology</i> , 2018, 52, 2751-2759.	4.6	76
7	Fe site occupancy in magnetite-ulvospinel solid solutions: A new approach using X-ray magnetic circular dichroism. <i>American Mineralogist</i> , 2010, 95, 425-439.	0.9	75
8	Labile Fe(III) from sorbed Fe(II) oxidation is the key intermediate in Fe(II)-catalyzed ferrihydrite transformation. <i>Geochimica Et Cosmochimica Acta</i> , 2020, 272, 105-120.	1.6	72
9	Reduction and Simultaneous Removal of $^{99}\text{Tc}$ and Cr by $\text{Fe}(\text{OH})_2(\text{s})$ Mineral Transformation. <i>Environmental Science &amp; Technology</i> , 2017, 51, 8635-8642.	4.6	68
10	Iodine immobilization by materials through sorption and redox-driven processes: A literature review. <i>Science of the Total Environment</i> , 2020, 716, 132820.	3.9	59
11	Fast Synthesis of Gibbsite Nanoplates and Process Optimization using Box-Behnken Experimental Design. <i>Crystal Growth and Design</i> , 2017, 17, 6801-6808.	1.4	47
12	Thermodynamics of the magnetite-ulvospinel ( $\text{Fe}_3\text{O}_4\text{-Fe}_2\text{TiO}_4$ ) solid solution. <i>American Mineralogist</i> , 2012, 97, 1330-1338.	0.9	45
13	$\text{Fe}_3\text{TiO}_4$ Nanoparticles as Tunable Probes of Microbial Metal Oxidation. <i>Journal of the American Chemical Society</i> , 2013, 135, 8896-8907.	6.6	43
14	Cr(III) Adsorption by Cluster Formation on Boehmite Nanoplates in Highly Alkaline Solution. <i>Environmental Science &amp; Technology</i> , 2019, 53, 11043-11055.	4.6	42
15	Transitions in Al Coordination during Gibbsite Crystallization Using High-Field $^{27}\text{Al}$ and $^{23}\text{Na}$ MAS NMR Spectroscopy. <i>Journal of Physical Chemistry C</i> , 2017, 121, 27555-27562.	1.5	41
16	Tc(VII) and Cr(VI) Interaction with Naturally Reduced Ferruginous Smectite from a Redox Transition Zone. <i>Environmental Science &amp; Technology</i> , 2017, 51, 9042-9052.	4.6	38
17	Successful Decontamination of $^{99}\text{TcO}_4^-$ in Groundwater at Legacy Nuclear Sites by a Cationic Metal-Organic Framework with Hydrophobic Pockets. <i>Angewandte Chemie</i> , 2019, 131, 5022-5026.	1.6	37
18	Technetium Stabilization in Low-Solubility Sulfide Phases: A Review. <i>ACS Earth and Space Chemistry</i> , 2018, 2, 532-547.	1.2	36

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19	Forty years of durability assessment of nuclear waste glass by standard methods. <i>Npj Materials Degradation</i> , 2021, 5, .	2.6	35
20	Ab Initio Molecular Dynamics Reveal Spectroscopic Siblings and Ion Pairing as New Challenges for Elucidating Prenucleation Aluminum Speciation. <i>Journal of Physical Chemistry B</i> , 2018, 122, 7394-7402.	1.2	34
21	In Situ <sup>27</sup> Al NMR Spectroscopy of Aluminate in Sodium Hydroxide Solutions above and below Saturation with Respect to Gibbsite. <i>Inorganic Chemistry</i> , 2018, 57, 11864-11873.	1.9	33
22	Incorporation of Technetium into Spinel Ferrites. <i>Environmental Science &amp; Technology</i> , 2016, 50, 13160-13168.	4.6	32
23	Reaction of U <sup>VI</sup> with Titanium-Substituted Magnetite: Influence of Ti on U <sup>IV</sup> Speciation. <i>Environmental Science &amp; Technology</i> , 2013, 47, 4121-4130.	4.6	30
24	First-Principles Fe L <sub>2,3</sub> -Edge and O K-Edge XANES and XMCD Spectra for Iron Oxides. <i>Journal of Physical Chemistry A</i> , 2017, 121, 7613-7618.	1.1	30
25	Radiolytic stability of gibbsite and boehmite with adsorbed water. <i>Journal of Nuclear Materials</i> , 2018, 501, 224-233.	1.3	30
26	Unraveling Gibbsite Transformation Pathways into LiAl-LDH in Concentrated Lithium Hydroxide. <i>Inorganic Chemistry</i> , 2019, 58, 12385-12394.	1.9	29
27	Getters for improved technetium containment in cementitious waste forms. <i>Journal of Hazardous Materials</i> , 2018, 341, 238-247.	6.5	25
28	A Closer Look at Fe(II) Passivation of Goethite. <i>ACS Earth and Space Chemistry</i> , 2019, 3, 2717-2725.	1.2	22
29	Stability, Composition, and Core-Shell Particle Structure of Uranium(IV)-Silicate Colloids. <i>Environmental Science &amp; Technology</i> , 2018, 52, 9118-9127.	4.6	21
30	Nanoscale observations of Fe( <sup>ii</sup> )-induced ferrihydrite transformation. <i>Environmental Science: Nano</i> , 2020, 7, 2953-2967.	2.2	21
31	Reversible Fe( <sup>ii</sup> ) uptake/release by magnetite nanoparticles. <i>Environmental Science: Nano</i> , 2018, 5, 1545-1555.	2.2	20
32	Transformation of Gibbsite to Boehmite in Caustic Aqueous Solution at Hydrothermal Conditions. <i>Crystal Growth and Design</i> , 2019, 19, 5557-5567.	1.4	19
33	Counteractions Control Local Specific Bonding Interactions and Nucleation Mechanisms in Concentrated Water-in-Salt Solutions. <i>Journal of Physical Chemistry Letters</i> , 2019, 10, 3318-3325.	2.1	19
34	Technetium immobilization by materials through sorption and redox-driven processes: A literature review. <i>Science of the Total Environment</i> , 2020, 716, 132849.	3.9	19
35	Ion-ion interactions enhance aluminum solubility in alkaline suspensions of nano-gibbsite (Al(OH) <sub>3</sub> ) with sodium nitrite/nitrate. <i>Physical Chemistry Chemical Physics</i> , 2020, 22, 4368-4378.	1.3	19
36	Hybrid Sorbents for <sup>129</sup> I Capture from Contaminated Groundwater. <i>ACS Applied Materials &amp; Interfaces</i> , 2020, 12, 26113-26126.	4.0	19

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37	Redistribution of Electron Equivalents between Magnetite and Aqueous Fe <sup>2+</sup> Induced by a Model Quinone Compound AQDS. <i>Environmental Science &amp; Technology</i> , 2019, 53, 1863-1873.	4.6	18
38	The role of surface hydroxyls on the radiolysis of gibbsite and boehmite nanoplatelets. <i>Journal of Hazardous Materials</i> , 2020, 398, 122853.	6.5	18
39	Evaluation of materials for iodine and technetium immobilization through sorption and redox-driven processes. <i>Science of the Total Environment</i> , 2020, 716, 136167.	3.9	16
40	<sup>27</sup> Al Pulsed Field Gradient, Diffusion- <sup>19</sup> F NMR Spectroscopy of Solvation Dynamics and Ion Pairing in Alkaline Aluminate Solutions. <i>Journal of Physical Chemistry B</i> , 2018, 122, 10907-10912.	1.2	15
41	Crystallization and Phase Transformations of Aluminum (Oxy)hydroxide Polymorphs in Caustic Aqueous Solution. <i>Inorganic Chemistry</i> , 2021, 60, 9820-9832.	1.9	15
42	Resolving local configurational contributions to X-ray and neutron radial distribution functions within solutions of concentrated electrolytes – a case study of concentrated NaOH. <i>Physical Chemistry Chemical Physics</i> , 2019, 21, 6828-6838.	1.3	14
43	Pre-Viking Swedish hillfort glass: A prospective long-term alteration analogue for vitrified nuclear waste. <i>International Journal of Applied Glass Science</i> , 2018, 9, 540-554.	1.0	13
44	Coupled Multimodal Dynamics of Hydrogen-Containing Ion Networks in Water-Deficient, Sodium Hydroxide-Aluminate Solutions. <i>Journal of Physical Chemistry B</i> , 2018, 122, 12097-12106.	1.2	12
45	Cr(VI) Effect on Tc-99 Removal from Hanford Low-Activity Waste Simulant by Ferrous Hydroxide. <i>Environmental Science &amp; Technology</i> , 2018, 52, 11752-11759.	4.6	11
46	Solid-State Recrystallization Pathways of Sodium Aluminate Hydroxy Hydrates. <i>Inorganic Chemistry</i> , 2020, 59, 6857-6865.	1.9	11
47	Impact of Ti Incorporation on Hydroxylation and Wetting of Fe <sub>3</sub> O <sub>4</sub> . <i>Journal of Physical Chemistry C</i> , 2017, 121, 19288-19295.	1.5	10
48	Characterisation and heat treatment of chloride-contaminated and humidified PuO <sub>2</sub> samples. <i>Journal of Nuclear Materials</i> , 2018, 509, 654-666.	1.3	10
49	Spectroscopic Characterization of Aqua [ <i>fac</i> ]-Tc(CO) <sub>3</sub> <sup>+</sup> Complexes at High Ionic Strength. <i>Inorganic Chemistry</i> , 2018, 57, 6903-6912.	1.9	10
50	Silicate stabilisation of colloidal UO <sub>2</sub> produced by uranium metal corrosion. <i>Journal of Nuclear Materials</i> , 2019, 526, 151751.	1.3	10
51	Two-step route to size and shape controlled gibbsite nanoplates and the crystal growth mechanism. <i>CrystEngComm</i> , 2020, 22, 2555-2565.	1.3	10
52	Intermediate Species in the Crystallization of Sodium Aluminate Hydroxy Hydrates. <i>Journal of Physical Chemistry C</i> , 2020, 124, 12337-12345.	1.5	10
53	Inference of principal species in caustic aluminate solutions through solid-state spectroscopic characterization. <i>Dalton Transactions</i> , 2020, 49, 5869-5880.	1.6	10
54	Magnetization Measurements and XMCD Studies on Ion Irradiated Iron Oxide and Core-Shell Iron/Iron-Oxide Nanomaterials. <i>IEEE Transactions on Magnetics</i> , 2014, 50, 1-5.	1.2	9

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55	Anticorrelated Contributions to Pre-edge Features of Aluminate Near-Edge X-ray Absorption Spectroscopy in Concentrated Electrolytes. <i>Journal of Physical Chemistry Letters</i> , 2018, 9, 2444-2449.	2.1	9
56	Reproduction of melting behavior for vitrified hillforts based on amphibolite, granite, and basalt lithologies. <i>Scientific Reports</i> , 2021, 11, 1272.	1.6	9
57	Characterizing Technetium in Subsurface Sediments for Contaminant Remediation. <i>ACS Earth and Space Chemistry</i> , 2018, 2, 1145-1160.	1.2	8
58	Interactions of HCl and H <sub>2</sub> O with the surface of PuO <sub>2</sub> . <i>Journal of Nuclear Materials</i> , 2019, 518, 256-264.	1.3	8
59	Mechanisms of Al <sup>3+</sup> Dimerization in Alkaline Solutions. <i>Inorganic Chemistry</i> , 2020, 59, 18181-18189.	1.9	8
60	Effect of Cr(III) Adsorption on the Dissolution of Boehmite Nanoparticles in Caustic Solution. <i>Environmental Science &amp; Technology</i> , 2020, 54, 6375-6384.	4.6	8
61	Hydroxide promotes ion pairing in the NaNO <sub>2</sub> -NaOH-H <sub>2</sub> O system. <i>Physical Chemistry Chemical Physics</i> , 2021, 23, 112-122.	1.3	8
62	Radiolysis and Radiation-Driven Dynamics of Boehmite Dissolution Observed by In Situ Liquid-Phase TEM. <i>Environmental Science &amp; Technology</i> , 2022, 56, 5029-5036.	4.6	8
63	Radiation damage in biotite mica by accelerated $\alpha$ -particles: A synchrotron microfocus X-ray diffraction and X-ray absorption spectroscopy study. <i>American Mineralogist</i> , 2016, 101, 928-942.	0.9	7
64	Influence of soluble oligomeric aluminum on precipitation in the Al-KOH-H <sub>2</sub> O system. <i>Physical Chemistry Chemical Physics</i> , 2020, 22, 24677-24685.	1.3	7
65	Structure, Magnetism, and the Interaction of Water with Ti-Doped Fe <sub>3</sub> O <sub>4</sub> Surfaces. <i>Langmuir</i> , 2019, 35, 13872-13879.	1.6	6
66	Long-term accumulation, depth distribution, and speciation of silver nanoparticles in biosolids-amended soils. <i>Journal of Environmental Quality</i> , 2020, 49, 1679-1689.	1.0	6
67	Molecular Examination of Ion-Pair Competition in Alkaline Aluminate Solutions Using In Situ Liquid SIMS. <i>Analytical Chemistry</i> , 2021, 93, 1068-1075.	3.2	6
68	Extending Zavitsas™ hydration model to the thermodynamics of solute mixtures in water. <i>Journal of Molecular Liquids</i> , 2022, 347, 118309.	2.3	6
69	A Review of Bismuth(III)-Based Materials for Remediation of Contaminated Sites. <i>ACS Earth and Space Chemistry</i> , 2022, 6, 883-908.	1.2	6
70	Surface speciation and interactions between adsorbed chloride and water on cerium dioxide. <i>Journal of Solid State Chemistry</i> , 2018, 262, 16-25.	1.4	5
71	Kinetics of Co-Mingled <sup>99</sup> Tc and Cr Removal during Mineral Transformation of Ferrous Hydroxide. <i>ACS Earth and Space Chemistry</i> , 2020, 4, 218-228.	1.2	5
72	Niche Partitioning of Microbial Communities at an Ancient Vitrified Hillfort: Implications for Vitrified Radioactive Waste Disposal. <i>Geomicrobiology Journal</i> , 2021, 38, 36-56.	1.0	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. <i>Fluid Phase Equilibria</i> , 2021, 532, 112922.	1.4	5
74	Cluster defects in gibbsite nanoplates grown at acidic to neutral pH. <i>Nanoscale</i> , 2021, 13, 17373-17385.	2.8	5
75	Applying laboratory methods for durability assessment of vitrified material to archaeological samples. <i>Npj Materials Degradation</i> , 2021, 5, .	2.6	5
76	Influences on Subsurface Plutonium and Americium Migration. <i>ACS Earth and Space Chemistry</i> , 2021, 5, 279-294.	1.2	4
77	Theory-Guided Inelastic Neutron Scattering of Crystalline Alkaline Aluminate Salts Bearing Principal Motifs of Solution-State Species. <i>Inorganic Chemistry</i> , 2021, 60, 16223-16232.	1.9	4
78	Pu distribution among mixed waste components at the Hanford legacy site, USA and implications to long-term migration. <i>Applied Geochemistry</i> , 2022, , 105304.	1.4	4
79	Al <sup>27</sup> NMR chemical shift of Al(OH) <sub>4</sub> <sup>-</sup> calculated from first principles: Assessment of error cancellation in chemically distinct reference and target systems. <i>Journal of Chemical Physics</i> , 2020, 152, 134303.	1.2	3
80	<sup>27</sup> Al NMR diffusometry of Al <sub>13</sub> Keggin nanoclusters. <i>Magnetic Resonance in Chemistry</i> , 2022, 60, 226-238.	1.1	3
81	Sorption of Strontium to Uraninite and Uranium(IV)-Silicate Nanoparticles. <i>Langmuir</i> , 2022, 38, 3090-3097.	1.6	3
82	Ion hydration controls self-diffusion in multicomponent aqueous electrolyte solutions of NaNO <sub>2</sub> -NaOH-H <sub>2</sub> O. <i>Journal of Molecular Liquids</i> , 2022, 360, 119441.	2.3	3
83	Characterization of Glass Alterations in Ancient Glass from Various Environments from Broborg, a Vitrified Swedish Hillfort. <i>Microscopy and Microanalysis</i> , 2020, 26, 2592-2593.	0.2	2
84	Photon-In/Photon-Out X-ray Free-Electron Laser Studies of Radiolysis. <i>Applied Sciences (Switzerland)</i> , 2021, 11, 701.	1.3	1
85	The controlling role of atmosphere in dawsonite <i>versus</i> gibbsite precipitation from tetrahedral aluminate species. <i>Dalton Transactions</i> , 2021, 50, 13438-13446.	1.6	1
86	Isotopic Substitution Reveals the Importance of Aluminate Diffusion Dynamics in Gibbsite (Al(OH) <sub>3</sub> ) Crystallization from Alkaline Aqueous Solution. <i>ACS Earth and Space Chemistry</i> , 0, , .	1.2	1
87	Assessment of the reason for the vitrification of a wall at a hillfort. The example of Broborg in Sweden. <i>Journal of Archaeological Science: Reports</i> , 2022, 43, 103459.	0.2	1
88	Sodium site occupancy and phosphate speciation in natrophosphate are invariant to changes in NaF and Na <sub>3</sub> PO <sub>4</sub> concentration. <i>Inorganic Chemistry Frontiers</i> , 0, , .	3.0	1
89	Radiation Damage Effects in Chlorite Investigated Using Microfocus Synchrotron Techniques. <i>ACS Earth and Space Chemistry</i> , 2019, 3, 652-662.	1.2	0
90	Solubility controls on plutonium and americium release in subsurface environments exposed to acidic processing wastes. <i>Applied Geochemistry</i> , 2023, 153, 105241.	1.4	0