R Lee Penn

List of Publications by Year
in descending order

100 papers	10,270 citations	57758 44 h-index	34986 98 g-index
102 all docs	102 docs citations	102 times ranked	12691 citing authors

#	Article	IF	Citations
1	Aggregation-Based Crystal Growth and Microstructure Development in Natural Iron Oxyhydroxide Biomineralization Products. Science, 2000, 289, 751-754.	12.6	1,650
2	Crystallization by particle attachment in synthetic, biogenic, and geologic environments. Science, 2015, 349, aaa6760.	12.6	1,467
3	Nanominerals, Mineral Nanoparticles, and Earth Systems. Science, 2008, 319, 1631-1635.	12.6	768
4	Hierarchical nanofabricationÂofÂmicroporous crystals with ordered mesoporosity. Nature Materials, 2008, 7, 984-991.	27.5	553
5	Kinetics of Oriented Aggregation. Journal of Physical Chemistry B, 2004, 108, 12707-12712.	2.6	445
6	Mechanistic principles of nanoparticle evolution to zeolite crystals. Nature Materials, 2006, 5, 400-408.	27.5	416
7	The Adsorption of Perfluorooctane Sulfonate onto Sand, Clay, and Iron Oxide Surfaces. Journal of Chemical & Engineering Data, 2007, 52, 1165-1170.	1.9	290
8	Oriented Aggregation: Formation and Transformation of Mesocrystal Intermediates Revealed. Journal of the American Chemical Society, 2010, 132, 2163-2165.	13.7	286
9	Enhanced Adsorption of Molecules on Surfaces of Nanocrystalline Particles. Journal of Physical Chemistry B, 1999, 103, 4656-4662.	2.6	238
10	Two-Step Growth of Goethite from Ferrihydrite. Langmuir, 2006, 22, 402-409.	3.5	189
11	Crystal growth by oriented attachment: kinetic models and control factors. CrystEngComm, 2014, 16, 1419.	2.6	162
12	The Influence of Anion on the Coarsening Kinetics of ZnO Nanoparticles. Journal of Physical Chemistry B, 2003, 107, 3124-3130.	2.6	135
13	Selective Methane Oxidation to Methanol on Cu-Oxo Dimers Stabilized by Zirconia Nodes of an NU-1000 Metalâ€“Organic Framework. Journal of the American Chemical Society, 2019, 141, 9292-9304.	13.7	131
14	Towards data-driven next-generation transmission electron microscopy. Nature Materials, 2021, 20, 274-279.	27.5	130
15	Organic matter and iron oxide nanoparticles: aggregation, interactions, and reactivity. Environmental Science: Nano, 2016, 3, 494-505.	4.3	111
16	A Structural Resolution Cryo-TEM Study of the Early Stages of MFI Growth. Journal of the American Chemical Society, 2008, 130, 17284-17286.	13.7	110
17	From Nanodots to Nanorods: Oriented aggregation and magnetic evolution of nanocrystalline goethite. Geophysical Research Letters, 2003, 30, n/a-n/a.	4.0	108
18	Characterizing crystal growth by oriented aggregation. CrystEngComm, 2014, 16, 1409.	2.6	104

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19	Reduction of crystalline iron(III) oxyhydroxides using hydroquinone: Influence of phase and particle size. Geochemical Transactions, 2005, 6, 1.	0.7	99
20	Magnetic properties of synthetic six-line ferrihydrite nanoparticles. Physics of the Earth and Planetary Interiors, 2006, 154, 222-233.	1.9	98
21	Controlled growth of alpha-FeOOH nanorods by exploiting-oriented aggregation. Journal of Crystal Growth, 2006, 293, 1-4.	1.5	95
22	Reductive dissolution of arsenic-bearing ferrihydrite. Geochimica Et Cosmochimica Acta, 2010, 74, 3382-3395.	3.9	90
23	Nucleation of FAU and LTA Zeolites from Heterogeneous Aluminosilicate Precursors. Chemistry of Materials, 2016, 28, 4906-4916.	6.7	90
24	Effect of Ionic Strength on the Kinetics of Crystal Growth by Oriented Aggregation. Crystal Growth and Design, 2012, 12, 4787-4797.	3.0	89
25	Introducing Colorimetric Analysis with Camera Phones and Digital Cameras: An Activity for High School or General Chemistry. Journal of Chemical Education, 2013, 90, 1191-1195.	2.3	88
26	Sinterâ€Resistant Platinum Catalyst Supported by Metalâ€“Organic Framework. Angewandte Chemie - International Edition, 2018, 57, 909-913.	13.8	88
27	Well-Defined Rhodiumâ€“Gallium Catalytic Sites in a Metalâ€“Organic Framework: Promoter-Controlled Selectivity in Alkyne Semihydrogenation to E-Alkenes. Journal of the American Chemical Society, 2018, 140, 15309-15318.	13.7	88
28	Aggregative Growth of Silicalite-1. Journal of Physical Chemistry B, 2007, 111, 3398-3403.	2.6	87
29	Thermal Stabilization of Metalâ€“Organic Framework-Derived Single-Site Catalytic Clusters through Nanocasting. Journal of the American Chemical Society, 2016, 138, 2739-2748.	13.7	83
30	Effect of pH on the Kinetics of Crystal Growth by Oriented Aggregation. Crystal Growth and Design, 2013, 13, 3396-3403.	3.0	78
31	Size-Dependent Anatase to Rutile Phase Transformation and Particle Growth. Chemistry of Materials, 2013, 25, 1408-1415.	6.7	78
32	Kinetic and Microscopic Studies of Reductive Transformations of Organic Contaminants on Goethite. Environmental Science & Technology, 2006, 40, 3299-3304.	10.0	76
33	Size dependent kinetics of oriented aggregation. Journal of Crystal Growth, 2007, 309, 97-102.	1.5	68
34	Size-Dependent Bandgap of Nanogoethite. Journal of Physical Chemistry C, 2011, 115, 17704-17710.	3.1	66
35	Titanium Dioxide Nanoparticles:â€‰Effect of Solâ€“Gel pH on Phase Composition, Particle Size, and Particle Growth Mechanism. Journal of Physical Chemistry C, 2008, 112, 4469-4474.	3.1	65
36	Influence of Size on Reductive Dissolution of Six-Line Ferrihydrite. Journal of Physical Chemistry C, 2008, 112, 12127-12133.	3.1	64

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37	Defects and Disorder:Â Probing the Surface Chemistry of Heterogenite (CoOOH) by Dissolution Using Hydroquinone and Iminodiacetic Acid. Journal of Physical Chemistry B, 2001, 105, 4690-4697.	2.6	63
38	Role of a Modulator in the Synthesis of Phase-Pure NU-1000. ACS Applied Materials & Interfaces, 2017, 9, 39342-39346.	8.0	62
39	High crystallinity Si-ferrihydrite: An insight into its NÃ©el temperature and size dependence of magnetic properties. Journal of Geophysical Research, 2007, 112, .	3.3	56
40	Installing Heterobimetallic Cobaltâ€“Aluminum Single Sites on a Metal Organic Framework Support. Chemistry of Materials, 2016, 28, 6753-6762.	6.7	56
41	Character of Humic Substances as a Predictor for Goethite Nanoparticle Reactivity and Aggregation. Environmental Science & Technology, 2016, 50, 1200-1208.	10.0	52
42	Aggregation of ferrihydrite nanoparticles in aqueous systems. Faraday Discussions, 2012, 159, 235.	3.2	49
43	Phase Transformation and Particle-Mediated Growth in the Formation of Hematite from 2-Line Ferrihydrite. Crystal Growth and Design, 2016, 16, 922-932.	3.0	48
44	Influence of Aluminum Doping on Ferrihydrite Nanoparticle Reactivity. Journal of Physical Chemistry B, 2006, 110, 11746-11750.	2.6	45
45	A Fresh Look at the Crystal Violet Lab with Handheld Camera Colorimetry. Journal of Chemical Education, 2015, 92, 1692-1695.	2.3	45
46	A disordered nanoparticle model for 6-line ferrihydrite. American Mineralogist, 2013, 98, 1465-1476.	1.9	43
47	Quantifying Protein Concentrations Using Smartphone Colorimetry: A New Method for an Established Test. Journal of Chemical Education, 2017, 94, 941-945.	2.3	43
48	Goethite nanoparticle aggregation: effects of buffers, metal ions, and 4-chloronitrobenzene reduction. Environmental Science: Nano, 2014, 1, 478-487.	4.3	42
49	Quantifying Gold Nanoparticle Concentration in a Dietary Supplement Using Smartphone Colorimetry and Google Applications. Journal of Chemical Education, 2016, 93, 318-321.	2.3	38
50	Effects of magnetic interactions in antiferromagnetic ferrihydrite particles. Journal of Physics Condensed Matter, 2009, 21, 176005.	1.8	36
51	Xâ€ray magnetic circular dichroÃ¯sm provides strong evidence for tetrahedral iron in ferrihydrite. Geochemistry, Geophysics, Geosystems, 2012, 13, .	2.5	36
52	Synthesis of Cu₂(Zn_{1â^'x}Co_x)SnS₄ nanocrystals and formation of polycrystalline thin films from their aqueous dispersions. Journal of Materials Chemistry A, 2018, 6, 999-1008.	10.3	36
53	On the nucleation and crystallization of silicalite-1 from a dilute clear sol. Microporous and Mesoporous Materials, 2011, 144, 74-81.	4.4	35
54	Cation-Dependent Hierarchical Assembly of U60 Nanoclusters into Macro-Ion Assemblies Imaged via Cryogenic Transmission Electron Microscopy. Journal of the American Chemical Society, 2016, 138, 191-198.	13.7	35

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55	The Synthesis Science of Targeted Vapor-Phase Metalâ€“Organic Framework Postmodification. Journal of the American Chemical Society, 2020, 142, 242-250.	13.7	32
56	Size Control of the MOF NU-1000 through Manipulation of the Modulator/Linker Competition. Crystal Growth and Design, 2020, 20, 2965-2972.	3.0	31
57	Facet-Dependent Oxidative Goethite Growth As a Function of Aqueous Solution Conditions. Environmental Science & Technology, 2016, 50, 10406-10412.	10.0	30
58	Crystalline nanoparticle aggregation in non-aqueous solvents. CrystEngComm, 2014, 16, 1472-1481.	2.6	28
59	Controlling Nanosized ZnO Growth Kinetics Using Various Zn:OH Concentration Ratios. Journal of Physical Chemistry C, 2007, 111, 14098-14104.	3.1	27
60	Selective removal of Cu_{2â^'x}(S,Se) phases from Cu₂ZnSn(S,Se)₄ thin films. Green Chemistry, 2016, 18, 5814-5821.	9.0	27
61	Quantitative Dissolution of Environmentally Accessible Iron Residing in Iron-Rich Minerals: A Review. ACS Earth and Space Chemistry, 2019, 3, 1371-1392.	2.7	25
62	Two-step phase transformation of anatase to rutile in aqueous suspension. CrystEngComm, 2014, 16, 1488-1495.	2.6	23
63	Nanocrystal growth via oriented attachment. CrystEngComm, 2014, 16, 1407.	2.6	22
64	Electron Mobility and Trapping in Ferrihydrite Nanoparticles. ACS Earth and Space Chemistry, 2017, 1, 216-226.	2.7	21
65	Assembly of dicobalt and cobaltâ€“aluminum oxide clusters on metalâ€“organic framework and nanocast silica supports. Faraday Discussions, 2017, 201, 287-302.	3.2	21
66	Controlling Cu₂ZnSnS₄ (CZTS) phase in microwave solvothermal synthesis. Journal of Materials Chemistry A, 2017, 5, 23179-23189.	10.3	21
67	Application and Limitations of Nanocasting in Metalâ€“Organic Frameworks. Inorganic Chemistry, 2018, 57, 2782-2790.	4.0	21
68	Facile Synthesis of Monodispersed Ag NPs in Ethylene Glycol Using Mixed Capping Agents. ACS Omega, 2020, 5, 6069-6073.	3.5	21
69	Zinc oxide nanoparticle growth from homogenous solution: Influence of Zn:OH, water concentration, and surfactant additives. Materials Research Bulletin, 2009, 44, 993-998.	5.2	20
70	Elucidating the Role of AgCl in the Nucleation and Growth of Silver Nanoparticles in Ethylene Glycol. Crystal Growth and Design, 2018, 18, 324-330.	3.0	20
71	Zero-Valent Iron: Impact of Anions Present during Synthesis on Subsequent Nanoparticle Reactivity. Journal of Environmental Engineering, ASCE, 2011, 137, 889-896.	1.4	18
72	Building a Successful Middle School Outreach Effort: Microscopy Camp. Journal of Chemical Education, 2007, 84, 955.	2.3	17

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73	Potentiometric in Situ Monitoring of Anions in the Synthesis of Copper and Silver Nanoparticles Using the Polyol Process. ACS Nano, 2015, 9, 12104-12114.	14.6	17
74	Simulation of Natural Iron Oxide Alteration in Soil: Conversion of Synthetic Ferrihydrite to Hematite Without Artificial Dopants, Observed With Magnetic Methods. Geochemistry, Geophysics, Geosystems, 2020, 21, e2020GC009037.	2.5	16
75	CHEMISTRY: Resolving an Elusive Structure. Science, 2007, 316, 1704-1705.	12.6	14
76	Controlling heterogenite particle morphology and microstructure by varying synthetic conditions. Materials Research Bulletin, 2011, 46, 649-657.	5.2	14
77	Synthesis of Cu2ZnSnS4 thin films directly onto conductive substrates via selective thermolysis using microwave energy. Chemical Communications, 2014, 50, 5902.	4.1	14
78	Effect of nonreactive kaolinite on 4-chloronitrobenzene reduction by Fe(<scp>ii</scp>) in goethiteâ€“kaolinite heterogeneous suspensions. Environmental Science: Nano, 2017, 4, 325-334.	4.3	13
79	Redox-induced nucleation and growth of goethite on synthetic hematite nanoparticles. American Mineralogist, 2018, 103, 1021-1029.	1.9	13
80	TEM investigation of Lewiston, Idaho, fibrolite; microstructure and grain boundary energetics. American Mineralogist, 1999, 84, 152-159.	1.9	13
81	Evolving Surface Reactivity of Cobalt Oxyhydroxide Nanoparticles. Journal of Physical Chemistry C, 2007, 111, 10597-10602.	3.1	12
82	Impact of Pahokee Peat humic acid and buffer identity on goethite aggregation and reactivity. Environmental Science: Nano, 2015, 2, 509-517.	4.3	11
83	Accessible reactive surface area and abiotic redox reactivity of iron oxyhydroxides in acidic brines. Geochimica Et Cosmochimica Acta, 2017, 197, 345-355.	3.9	11
84	Extending the Compositional Range of Nanocasting in the Oxozirconium Cluster-Based Metalâ€“Organic Framework NU-1000â€”A Comparative Structural Analysis. Chemistry of Materials, 2018, 30, 1301-1315.	6.7	10
85	Effects of Phase Purity and Pore Reinforcement on Mechanical Behavior of NU-1000 and Silica-Infiltrated NU-1000 Metalâ€“Organic Frameworks. ACS Applied Materials & Interfaces, 2020, 12, 49971-49981.	8.0	10
86	A Perspective on the Particle-Based Crystal Growth of Ferric Oxides, Oxyhydroxides, and Hydrous Oxides. , 2017, , 257-273.		10
87	Controlling oriented aggregation using increasing reagent concentrations and trihalo acetic acid surfactants. Journal of Solid State Chemistry, 2008, 181, 1600-1608.	2.9	9
88	Using Polyvinylpyrrolidone and Citrate Ions To Modify the Stability of Ag NPs in Ethylene Glycol. Journal of Physical Chemistry C, 2019, 123, 12444-12450.	3.1	9
89	Temperature-dependent mechanical behavior of three-dimensionally ordered macroporous tungsten. Journal of Materials Research, 2020, 35, 2556-2566.	2.6	8
90	Interface-mediated phase transformation in nanocrystalline particles: the case of the TiO₂allotropes. CrystEngComm, 2015, 17, 2062-2069.	2.6	5

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91	Controlled Growth of Silver Nanoparticle Seeds Using Green Solvents. Crystal Growth and Design, 2019, 19, 4332-4339.	3.0	5
92	3D Periodic and Interpenetrating Tungstenâ€“Silicon Oxycarbide Nanocomposites Designed for Mechanical Robustness. ACS Applied Materials & Interfaces, 2021, 13, 32126-32135.	8.0	4
93	Sinterâ€Resistant Platinum Catalyst Supported by Metalâ€“Organic Framework. Angewandte Chemie, 2018, 130, 921-925.	2.0	3
94	Anisotropic oxidative growth of goethite-coated sand particles in column reactors during 4-chloronitrobenzene reduction by Fe(<scp>ii</scp>)/goethite. Environmental Science: Nano, 2022, 9, 275-288.	4.3	3
95	Using Microemulsion Phase Behavior as a Predictive Model for Lecithinâ€“Tween 80 Marine Oil Dispersant Effectiveness. Langmuir, 2021, 37, 8115-8128.	3.5	2
96	Organic Matter Inhibits Redox Activity and Impacts Heterogeneous Growth of Iron (Oxyhydr)oxides on Nano-Hematite. ACS Earth and Space Chemistry, 2022, 6, 847-860.	2.7	2
97	Synthesis of Nanoporous Rutile Nanocrystals under Mild Conditions. Materials Research Society Symposia Proceedings, 2015, 1721, 13.	0.1	1
98	Cation-Dependent Hierarchical Assembly of U60 Nanoclusters into Blackberries Imaged via Cryogenic Transmission Electron Microscopy. Microscopy and Microanalysis, 2016, 22, 1468-1469.	0.4	1
99	A kinetic model for two-step phase transformation of hydrothermally treated nanocrystalline anatase. CrystEngComm, 2016, 18, 3033-3039.	2.6	1
100	Sustainability: GEOCâ€™s Perspective. ACS Symposium Series, 2015, , 105-117.	0.5	0