James J De Yoreo

List of Publications by Year
in descending order

81 papers	8,947 citations	94433 37 h-index	66911 78 g-index
95 all docs	95 docs citations	95 times ranked	9559 citing authors

#	Article	IF	Citations
1	Crystallization by particle attachment in synthetic, biogenic, and geologic environments. Science, 2015, 349, aaa6760.	12.6	1,467
2	Direction-Specific Interactions Control Crystal Growth by Oriented Attachment. Science, 2012, 336, 1014-1018.	12.6	958
3	Principles of Crystal Nucleation and Growth. Reviews in Mineralogy and Geochemistry, 2003, 54, 57-93.	4.8	883
4	Ion-association complexes unite classical and non-classical theories for the biomimetic nucleation of calcium phosphate. Nature Communications, 2013, 4, 1507.	12.8	602
5	In situ TEM imaging of CaCO ₃ nucleation reveals coexistence of direct and indirect pathways. Science, 2014, 345, 1158-1162.	12.6	584
6	Microscopic Evidence for Liquid-Liquid Separation in Supersaturated CaCO ₃ Solutions. Science, 2013, 341, 885-889.	12.6	433
7	Calcium carbonate nucleation driven by ion binding in a biomimetic matrix revealed by in situ electron microscopy. Nature Materials, 2015, 14, 394-399.	27.5	353
8	The thermodynamics of calcite nucleation at organic interfaces: Classical vs. non-classical pathways. Faraday Discussions, 2012, 159, 509.	3.2	189
9	A classical view on nonclassical nucleation. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, E7882-E7890.	7.1	181
10	Polysaccharide chemistry regulates kinetics of calcite nucleation through competition of interfacial energies. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 9261-9266.	7.1	173
11	Self-catalyzed growth of S layers via an amorphous-to-crystalline transition limited by folding kinetics. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 16536-16541.	7.1	160
12	Building two-dimensional materials one row at a time: Avoiding the nucleation barrier. Science, 2018, 362, 1135-1139.	12.6	155
13	Investigating materials formation with liquid-phase and cryogenic TEM. Nature Reviews Materials, 2016, 1, .	48.7	153
14	Reconciling disparate views of template-directed nucleation through measurement of calcite nucleation kinetics and binding energies. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 1304-1309.	7.1	122
15	A Unified Description of Attachment-Based Crystal Growth. ACS Nano, 2014, 8, 6526-6530.	14.6	121
16	Tuning crystallization pathways through sequence engineering of biomimetic polymers. Nature Materials, 2017, 16, 767-774.	27.5	116
17	Supersaturated calcium carbonate solutions are classical. Science Advances, 2018, 4, eaao6283.	10.3	116
18	De novo design of self-assembling helical protein filaments. Science, 2018, 362, 705-709.	12.6	112

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19	Engineered Biomimetic Polymers as Tunable Agents for Controlling CaCO₃ Mineralization. Journal of the American Chemical Society, 2011, 133, 5214-5217.	13.7	103
20	Direction-specific van der Waals attraction between rutile TiO ₂ nanocrystals. Science, 2017, 356, 434-437.	12.6	103
21	Self-similar mesocrystals form via interface-driven nucleation and assembly. Nature, 2021, 590, 416-422.	27.8	98
22	Shape-preserving amorphous-to-crystalline transformation of CaCO ₃ revealed by in situ TEM. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 3397-3404.	7.1	97
23	Investigating Processes of Nanocrystal Formation and Transformation via Liquid Cell TEM. Microscopy and Microanalysis, 2014, 20, 425-436.	0.4	94
24	Structural Development of Mercaptophenol Self-Assembled Monolayers and the Overlying Mineral Phase during Templated CaCO₃ Crystallization from a Transient Amorphous Film. Journal of the American Chemical Society, 2007, 129, 10370-10381.	13.7	89
25	Controlling protein assembly on inorganic crystals through designed protein interfaces. Nature, 2019, 571, 251-256.	27.8	85
26	Design of biologically active binary protein 2D materials. Nature, 2021, 589, 468-473.	27.8	85
27	Direct observation of kinetic traps associated with structural transformations leading to multiple pathways of S-layer assembly. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 12968-12973.	7.1	77
28	Controlled synthesis of highly-branched plasmonic gold nanoparticles through peptoid engineering. Nature Communications, 2018, 9, 2327.	12.8	74
29	Connecting energetics to dynamics in particle growth by oriented attachment using real-time observations. Nature Communications, 2020, 11, 1045.	12.8	74
30	Tuning calcite morphology and growth acceleration by a rational design of highly stable protein-mimetics. Scientific Reports, 2014, 4, 6266.	3.3	65
31	Surface-Directed Assembly of Sequence-Defined Synthetic Polymers into Networks of Hexagonally Patterned Nanoribbons with Controlled Functionalities. ACS Nano, 2016, 10, 5314-5320.	14.6	57
32	Trends in micaâ€"mica adhesion reflect the influence of molecular details on long-range dispersion forces underlying aggregation and coalignment. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 7537-7542.	7.1	56
33	Selfâ€Repair and Patterning of 2D Membraneâ€Like Peptoid Materials. Advanced Functional Materials, 2016, 26, 8960-8967.	14.9	50
34	Near surface nucleation and particle mediated growth of colloidal Au nanocrystals. Nanoscale, 2018, 10, 11907-11912.	5.6	48
35	Physical Controls on Directed Virus Assembly at Nanoscale Chemical Templates. Journal of the American Chemical Society, 2006, 128, 10801-10807.	13.7	47
36	Organicâ€"mineral interfacial chemistry drives heterogeneous nucleation of Sr-rich (Ba <sub> <i>x</i>) Tj ETQq0 0 0 rgBT /Overlock 10 T the National Academy of Sciences of the United States of America, 2019, 116, 13221-13226.	7.1	45

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37	Impact of Solution Chemistry and Particle Anisotropy on the Collective Dynamics of Oriented Aggregation. ACS Nano, 2018, 12, 10114-10122.	14.6	40
38	Self-Assembling 2D Arrays with <i>de Novo</i> Protein Building Blocks. Journal of the American Chemical Society, 2019, 141, 8891-8895.	13.7	37
39	Hierarchical Assembly of Peptoidâ€Based Cylindrical Micelles Exhibiting Efficient Resonance Energy Transfer in Aqueous Solution. Angewandte Chemie - International Edition, 2019, 58, 12223-12230.	13.8	34
40	Assembly of a patchy protein into variable 2D lattices via tunable multiscale interactions. Nature Communications, 2020, 11, 3770.	12.8	31
41	Moving beyond the Solvent-Tip Approximation to Determine Site-Specific Variations of Interfacial Water Structure through 3D Force Microscopy. Journal of Physical Chemistry C, 2021, 125, 1282-1291.	3.1	31
42	Control of Calcium Phosphate Nucleation and Transformation through Interactions of Enamelin and Amelogenin Exhibits the â€œGoldilocks Effectâ€ Crystal Growth and Design, 2018, 18, 7391-7400.	3.0	29
43	Phase Transformation Mechanism of Amorphous Calcium Phosphate to Hydroxyapatite Investigated by Liquid-Cell Transmission Electron Microscopy. Crystal Growth and Design, 2021, 21, 5126-5134.	3.0	29
44	A Mechanistic Understanding of Nonclassical Crystal Growth in Hydrothermally Synthesized Sodium Yttrium Fluoride Nanowires. Chemistry of Materials, 2020, 32, 2753-2763.	6.7	27
45	Engineering Biomolecular Selfâ€Assembly at Solidâ€"Liquid Interfaces. Advanced Materials, 2021, 33, e1905784.	21.0	25
46	Sequence-Defined Energetic Shifts Control the Disassembly Kinetics and Microstructure of Amelogenin Adsorbed onto Hydroxyapatite (100). Langmuir, 2015, 31, 10451-10460.	3.5	24
47	A Microkinetic Model of Calcite Step Growth. Angewandte Chemie - International Edition, 2016, 55, 11086-11090.	13.8	24
48	Addressing some of the technical challenges associated with liquid phase S/TEM studies of particle nucleation, growth and assembly. Micron, 2019, 118, 35-42.	2.2	24
49	Sequenceâ€"Structureâ€"Binding Relationships Reveal Adhesion Behavior of the Car9 Solid-Binding Peptide: An Integrated Experimental and Simulation Study. Journal of the American Chemical Society, 2020, 142, 2355-2363.	13.7	21
50	Solvent-mediated repair and patterning of surfaces by AFM. Nanotechnology, 2008, 19, 105304.	2.6	20
51	<i>In Situ</i> TEM and AFM Investigation of Morphological Controls during the Growth of Single Crystal BaWO₄. Crystal Growth and Design, 2018, 18, 1367-1375.	3.0	20
52	Programmable two-dimensional nanocrystals assembled from POSS-containing peptoids as efficient artificial light-harvesting systems. Science Advances, 2021, 7, .	10.3	20
53	Nucleation and phase transformation pathways in electrolyte solutions investigated by in situ microscopy techniques. Current Opinion in Colloid and Interface Science, 2018, 34, 74-88.	7.4	19
54	Disentangling Rotational Dynamics and Ordering Transitions in a System of Self-Organizing Protein Nanorods <i>via</i> Rotationally Invariant Latent Representations. ACS Nano, 2021, 15, 6471-6480.	14.6	19

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55	Amyloid-like amelogenin nanoribbons template mineralization via a low-energy interface of ion binding sites. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, e2106965119.	7.1	19
56	Effect of Hydrophilicity and Interfacial Water Structure on Particle Attachment. Journal of Physical Chemistry C, 2020, 124, 5480-5488.	3.1	18
57	Peptoid-directed assembly of CdSe nanoparticles. Nanoscale, 2021, 13, 1273-1282.	5.6	18
58	In situ imaging of amorphous intermediates during brucite carbonation in supercritical CO2. Nature Materials, 2022, 21, 345-351.	27.5	18
59	Quantifying the Dynamics of Protein Self-Organization Using Deep Learning Analysis of Atomic Force Microscopy Data. Nano Letters, 2021, 21, 158-165.	9.1	17
60	Highly Bright and Photostable Two-Dimensional Nanomaterials Assembled from Sequence-Defined Peptoids. , 2021, 3, 420-427.		16
61	Scanning Probeâ€based Fabrication of 3D Nanostructures via Affinity Templates, Functional RNA, and Meniscusâ€mediated Surface Remodeling. Scanning, 2008, 30, 159-171.	1.5	15
62	Surface Selectivity of Calcite on Self-Assembled Monolayers. Journal of Physical Chemistry C, 2013, 117, 5154-5163.	3.1	14
63	Early-Stage Aggregation and Crystalline Interactions of Peptoid Nanomembranes. Journal of Physical Chemistry Letters, 2021, 12, 6126-6133.	4.6	14
64	The energetics of prenucleation clusters in lattice solutions. Journal of Chemical Physics, 2016, 145, 211921.	3.0	13
65	Ion-dependent proteinâ€"surface interactions from intrinsic solvent response. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	10
66	Spiers Memorial Lecture: Assembly-based pathways of crystallization. Faraday Discussions, 2022, 235, 9-35.	3.2	10
67	Monitoring solvent dynamics and ion associations in the formation of cubic octamer polyanion in tetramethylammonium silicate solutions. Physical Chemistry Chemical Physics, 2019, 21, 4717-4720.	2.8	9
68	Particle-based hematite crystallization is invariant to initial particle morphology. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, e2112679119.	7.1	9
69	Impact of Nanoparticle Size and Surface Chemistry on Peptoid Self-Assembly. ACS Nano, 2022, 16, 8095-8106.	14.6	9
70	Role of the Solventâ€"Surfactant Duality of Ionic Liquids in Directing Two-Dimensional Particle Assembly. Journal of Physical Chemistry C, 2020, 124, 24215-24222.	3.1	8
71	Rotational dynamics and transition mechanisms of surface-adsorbed proteins. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, e2020242119.	7.1	6
72	Peptoidâ€Directed Formation of Fiveâ€Fold Twinned Au Nanostars through Particle Attachment and Facet Stabilization. Angewandte Chemie - International Edition, 2022, 61, .	13.8	5

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73	Organothiol Monolayer Formation Directly on Muscovite Mica. Angewandte Chemie - International Edition, 2020, 59, 2323-2327.	13.8	4
74	Growth of Au and ZnS nanostructures via engineered peptide and M13 bacteriophage templates. Soft Matter, 2018, 14, 2996-3002.	2.7	2
75	What atoms do when they get together. Nature Chemistry, 2020, 12, 883-885.	13.6	2
76	Peptoidâ€Directed Formation of Fiveâ€Fold Twinned Au Nanostars through Particle Attachment and Facet Stabilization. Angewandte Chemie, 2022, 134, .	2.0	2
77	Hierarchical Assembly of Peptoidâ€Based Cylindrical Micelles Exhibiting Efficient Resonance Energy Transfer in Aqueous Solution. Angewandte Chemie, 2019, 131, 12351-12358.	2.0	1
78	Organothiol Monolayer Formation Directly on Muscovite Mica. Angewandte Chemie, 2020, 132, 2343-2347.	2.0	1
79	Frontispiece: Peptoidâ€Directed Formation of Fiveâ€Fold Twinned Au Nanostars through Particle Attachment and Facet Stabilization. Angewandte Chemie - International Edition, 2022, 61, .	13.8	1
80	Frontispiz: Peptoidâ€Directed Formation of Fiveâ€Fold Twinned Au Nanostars through Particle Attachment and Facet Stabilization. Angewandte Chemie, 2022, 134, .	2.0	0
81	Nonclassical Crystallization Pathways in Biomolecular Self-Assembly. ACS Symposium Series, 0, , 89-103.	0.5	0