Marc R Knecht

List of Publications by Year
in descending order

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90 papers	4,002 citations	126907 33 h-index	123424 61 g-index
91 all docs	91 docs citations	91 times ranked	4486 citing authors

#	Article	IF	Citations
1	Effect of Pd Nanoparticle Size on the Catalytic Hydrogenation of Allyl Alcohol. Journal of the American Chemical Society, 2006, 128, 4510-4511.	13.7	350
2	Bio-inspired colorimetric detection of Hg2+ and Pb2+ heavy metal ions using Au nanoparticles. Analytical and Bioanalytical Chemistry, 2009, 394, 33-46.	3.7	202
3	Functional analysis of the biomimetic silica precipitating activity of the R5 peptide from Cylindrotheca fusiformisElectronic supplementary information (ESI) available: HPLC and MALDI of peptides (11 pgs); EMs of silica particles (4 pgs); IR data (3 pgs); DLS data (1 pg) and mechanistic detail (1 pg). See http://www.rsc.org/suppdata/cc/b3/b309074d/. Chemical Communications, 2003, , 3038.	4.1	166
4	Biointerface Structural Effects on the Properties and Applications of Bioinspired Peptide-Based Nanomaterials. Chemical Reviews, 2017, 117, 12641-12704.	47.7	162
5	Biomimetic Synthesis of Pd Nanocatalysts for the Stille Coupling Reaction. ACS Nano, 2009, 3, 1288-1296.	14.6	152
6	Biomolecular Recognition Principles for Bionanocombinatorics: An Integrated Approach To Elucidate Enthalpic and Entropic Factors. ACS Nano, 2013, 7, 9632-9646.	14.6	142
7	Amine-Terminated Dendrimers as Biomimetic Templates for Silica Nanosphere Formation. Langmuir, 2004, 20, 4728-4732.	3.5	135
8	Synthesis and Characterization of Pt Dendrimer-Encapsulated Nanoparticles: Effect of the Template on Nanoparticle Formation. Chemistry of Materials, 2008, 20, 5218-5228.	6.7	135
9	Comparative Study of Materials-Binding Peptide Interactions with Gold and Silver Surfaces and Nanostructures: A Thermodynamic Basis for Biological Selectivity of Inorganic Materials. Chemistry of Materials, 2014, 26, 4960-4969.	6.7	118
10	Effects of the Material Structure on the Catalytic Activity of Peptide-Templated Pd Nanomaterials. ACS Catalysis, 2011, 1, 89-98.	11.2	110
11	Peptide-mediated synthesis of gold nanoparticles: effects of peptide sequence and nature of binding on physicochemical properties. Nanoscale, 2014, 6, 3165-3172.	5.6	104
12	Nanotechnology Meets Biology: Peptide-based Methods for the Fabrication of Functional Materials. Journal of Physical Chemistry Letters, 2012, 3, 405-418.	4.6	98
13	Crystallographic Recognition Controls Peptide Binding for Bio-Based Nanomaterials. Journal of the American Chemical Society, 2011, 133, 12346-12349.	13.7	96
14	Elucidation of Peptide-Directed Palladium Surface Structure for Biologically Tunable Nanocatalysts. ACS Nano, 2015, 9, 5082-5092.	14.6	96
15	Light-Activated Tandem Catalysis Driven by Multicomponent Nanomaterials. Journal of the American Chemical Society, 2014, 136, 32-35.	13.7	94
16	Exploiting Localized Surface Binding Effects to Enhance the Catalytic Reactivity of Peptide-Capped Nanoparticles. Journal of the American Chemical Society, 2013, 135, 11048-11054.	13.7	86
17	Sequence-Dependent Structure/Function Relationships of Catalytic Peptide-Enabled Gold Nanoparticles Generated under Ambient Synthetic Conditions. Journal of the American Chemical Society, 2016, 138, 540-548.	13.7	84
18	Elucidation of Peptide Effects that Control the Activity of Nanoparticles. Angewandte Chemie - International Edition, 2010, 49, 3767-3770.	13.8	75

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19	Determining Peptide Sequence Effects That Control the Size, Structure, and Function of Nanoparticles. ACS Nano, 2012, 6, 1625-1636.	14.6	75
20	Pd-decorated m-BiVO₄/BiOBr ternary composite with dual heterojunction for enhanced photocatalytic activity. Journal of Materials Chemistry A, 2017, 5, 529-534.	10.3	72
21	Periodicity and Atomic Ordering in Nanosized Particles of Crystals. Journal of Physical Chemistry C, 2008, 112, 8907-8911.	3.1	70
22	Dendrimer-Mediated Formation of Multicomponent Nanospheres. Chemistry of Materials, 2004, 16, 4890-4895.	6.7	60
23	Size Control of Dendrimer-Templated Silica. Langmuir, 2005, 21, 2058-2061.	3.5	60
24	Remote Optically Controlled Modulation of Catalytic Properties of Nanoparticles through Reconfiguration of the Inorganic/Organic Interface. ACS Nano, 2016, 10, 9470-9477.	14.6	58
25	Stability, surface features, and atom leaching of palladium nanoparticles: toward prediction of catalytic functionality. Physical Chemistry Chemical Physics, 2013, 15, 5488.	2.8	57
26	Peptide template effects for the synthesis and catalytic application of Pdnanoparticle networks. Journal of Materials Chemistry, 2010, 20, 1522-1531.	6.7	52
27	Synthesis, characterization, and catalytic application of networked Au nanostructures fabricated using peptide templates. Catalysis Science and Technology, 2012, 2, 1360.	4.1	45
28	Atomic-scale identification of Pd leaching in nanoparticle catalyzed Câ€“C coupling: effects of particle surface disorder. Chemical Science, 2015, 6, 6413-6419.	7.4	44
29	Reductant and Sequence Effects on the Morphology and Catalytic Activity of Peptide-Capped Au Nanoparticles. ACS Applied Materials & Interfaces, 2015, 7, 8843-8851.	8.0	44
30	Magnetic properties of dendrimer-encapsulated iron nanoparticles containing an average of 55 and 147 atoms. New Journal of Chemistry, 2007, 31, 1349.	2.8	43
31	Structural Control and Catalytic Reactivity of Peptide-Templated Pd and Pt Nanomaterials for Olefin Hydrogenation. Journal of Physical Chemistry C, 2013, 117, 18053-18062.	3.1	43
32	Metal oxide semiconductor nanomaterial for reductive debromination: Visible light degradation of polybrominated diphenyl ethers by Cu2O@Pd nanostructures. Applied Catalysis B: Environmental, 2017, 213, 147-154.	20.2	42
33	Biomolecular Material Recognition in Two Dimensions: Peptide Binding to Graphene, h-BN, and MoS₂ Nanosheets as Unique Bioconjugates. Bioconjugate Chemistry, 2019, 30, 2727-2750.	3.6	38
34	Direct Synthetic Control over the Size, Composition, and Photocatalytic Activity of Octahedral Copper Oxide Materials: Correlation Between Surface Structure and Catalytic Functionality. ACS Applied Materials & Interfaces, 2015, 7, 13238-13250.	8.0	34
35	Reliable computational design of biological-inorganic materials to the large nanometer scale using Interface-FF. Molecular Simulation, 2017, 43, 1394-1405.	2.0	34
36	Tunable assembly of biomimetic peptoids as templates to control nanostructure catalytic activity. Nanoscale, 2018, 10, 12445-12452.	5.6	31

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37	Elucidating the influence of materials-binding peptide sequence on Au surface interactions and colloidal stability of Au nanoparticles. Nanoscale, 2017, 9, 421-432.	5.6	30
38	Mimicking nature's strategies for the design of nanocatalysts. Catalysis Science and Technology, 2012, 2, 256-266.	4.1	29
39	Interrogating the catalytic mechanism of nanoparticle mediated Stille coupling reactions employing bio-inspired Pd nanocatalysts. Nanoscale, 2011, 3, 2194.	5.6	28
40	Identifying the Atomic-Level Effects of Metal Composition on the Structure and Catalytic Activity of Peptide-Templated Materials. ACS Nano, 2015, 9, 11968-11979.	14.6	28
41	Halide Effects in BiVO₄/BiOX Heterostructures Decorated with Pd Nanoparticles for Photocatalytic Degradation of Rhodamine B as a Model Organic Pollutant. ACS Applied Nano Materials, 2021, 4, 3262-3272.	5.0	28
42	Triggering nanoparticle surface ligand rearrangement via external stimuli: light-based actuation of biointerfaces. Nanoscale, 2015, 7, 13638-13645.	5.6	26
43	Optical Actuation of Inorganic/Organic Interfaces: Comparing Peptide-Azobenzene Ligand Reconfiguration on Gold and Silver Nanoparticles. ACS Applied Materials & Interfaces, 2016, 8, 1050-1060.	8.0	26
44	Peptide-Mediated Growth and Dispersion of Au Nanoparticles in Water via Sequence Engineering. Journal of Physical Chemistry C, 2018, 122, 11532-11542.	3.1	26
45	Structure of Arginine Overlayers at the Aqueous Gold Interface: Implications for Nanoparticle Assembly. ACS Applied Materials & Interfaces, 2014, 6, 10524-10533.	8.0	24
46	Peptide Sequence Effects Control the Single Pot Reduction, Nucleation, and Growth of Au Nanoparticles. Journal of Physical Chemistry C, 2016, 120, 18917-18924.	3.1	24
47	Size-Controlled SrTiO₃ Nanoparticles Photodecorated with Pd Cocatalysts for Photocatalytic Organic Dye Degradation. ACS Applied Nano Materials, 2020, 3, 4904-4912.	5.0	23
48	Isolation of Template Effects That Control the Structure and Function of Nonspherical, Biotemplated Pd Nanomaterials. Langmuir, 2012, 28, 8110-8119.	3.5	21
49	Examination of Transmetalation Pathways and Effects in Aqueous Suzuki Coupling Using Biomimetic Pd Nanocatalysts. Journal of Physical Chemistry C, 2014, 118, 18543-18553.	3.1	21
50	Effects of Metal Composition and Ratio on Peptide-Templated Multimetallic PdPt Nanomaterials. ACS Applied Materials & Interfaces, 2017, 9, 8030-8040.	8.0	19
51	Optical Control of Nanoparticle Catalysis Influenced by Photoswitch Positioning in Hybrid Peptide Capping Ligands. ACS Applied Materials & Interfaces, 2018, 10, 33640-33651.	8.0	18
52	Tuning Materials-Binding Peptide Sequences toward Gold- and Silver-Binding Selectivity with Bayesian Optimization. ACS Nano, 2021, 15, 18260-18269.	14.6	18
53	Effects of Substrate Molecular Structure on the Catalytic Activity of Peptide-Templated Pd Nanomaterials. Journal of Physical Chemistry C, 2014, 118, 2518-2527.	3.1	17
54	Molecular-Level Insights into Biologically Driven Graphite Exfoliation for the Generation of Graphene in Aqueous Media. Journal of Physical Chemistry C, 2020, 124, 2219-2228.	3.1	17

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55	Peptide-Modified Dendrimers as Templates for the Production of Highly Reactive Catalytic Nanomaterials. Chemistry of Materials, 2014, 26, 4082-4091.	6.7	16
56	Plasmon-enhanced two-photon-induced isomerization for highly-localized light-based actuation of inorganic/organic interfaces. Nanoscale, 2016, 8, 4194-4202.	5.6	16
57	Exploring the mechanism of Stille Câ€“C coupling viapeptide-capped Pd nanoparticles results in low temperature reagent selectivity. Catalysis Science and Technology, 2013, 3, 745-753.	4.1	14
58	Material composition and peptide sequence affects biomolecule affinity to and selectivity for h-boron nitride and graphene. Chemical Communications, 2020, 56, 8834-8837.	4.1	14
59	Hierarchical Coreâ€“Shell ACOF-1@BiOBr as an Efficient Photocatalyst for the Degradation of Emerging Organic Contaminants. Journal of Physical Chemistry C, 2022, 126, 2503-2516.	3.1	14
60	Cu₂O Cubes Decorated with Azine-Based Covalent Organic Framework Spheres and Pd Nanoparticles as Tandem Photocatalyst for Light-Driven Degradation of Chlorinated Biphenyls. ACS Applied Nano Materials, 2021, 4, 2795-2805.	5.0	13
61	Converting Light Energy to Chemical Energy: A New Catalytic Approach for Sustainable Environmental Remediation. ACS Omega, 2016, 1, 41-51.	3.5	12
62	Solution Effects on Peptide-Mediated Reduction and Stabilization of Au Nanoparticles. Langmuir, 2017, 33, 13757-13765.	3.5	12
63	Employing high-resolution materials characterization to understand the effects of Pd nanoparticle structure on their activity as catalysts for olefin hydrogenation. Analytical and Bioanalytical Chemistry, 2010, 397, 1137-1155.	3.7	11
64	Identifying Affinity Classes of Inorganic Materials Binding Sequences via a Graph-Based Model. IEEE/ACM Transactions on Computational Biology and Bioinformatics, 2015, 12, 193-204.	3.0	11
65	Modulation of Peptideâ€“Graphene Interfaces via Fatty Acid Conjugation. Advanced Materials Interfaces, 2021, 8, .	3.7	11
66	Toward a modular multi-material nanoparticle synthesis and assembly strategy via bionanocombinatorics: bifunctional peptides for linking Au and Ag nanomaterials. Physical Chemistry Chemical Physics, 2016, 18, 30845-30856.	2.8	10
67	Amino Acids for the Sustainable Production of Cu₂O Materials: Effects on Morphology and Photocatalytic Reactivity. ACS Sustainable Chemistry and Engineering, 2019, 7, 17055-17064.	6.7	10
68	Remote controlled optical manipulation of bimetallic nanoparticle catalysts using peptides. Catalysis Science and Technology, 2021, 11, 2386-2395.	4.1	9
69	Applications and advancements of peptides in the design of metallic nanomaterials. Current Opinion in Green and Sustainable Chemistry, 2018, 12, 63-68.	5.9	8
70	Cu2S@Bi2S3 Double-Shelled Hollow Cages as a Nanocatalyst with Substantial Activity in Peroxymonosulfate Activation for Atrazine Degradation. ACS Applied Nano Materials, 2021, 4, 12222-12234.	5.0	8
71	Optical Modulation of Azobenzeneâ€Modified Peptide for Gold Surface Binding. ChemPhysChem, 2016, 17, 3252-3259.	2.1	7
72	Optical Control of Biomimetic Nanoparticle Catalysts Based upon the Metal Component. Journal of Physical Chemistry C, 2018, 122, 28055-28064.	3.1	7

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73	Peptide-Driven Fabrication of Catalytically Reactive Rhodium Nanoplates. ACS Applied Nano Materials, 2018, 1, 7149-7158.	5.0	7
74	Selective manipulation of peptide orientation on hexagonal boron nitride nanosheets. Nanoscale, 2021, 13, 5670-5678.	5.6	7
75	Identification of Parameters Controlling Peptide-Driven Graphene Exfoliation in Aqueous Media. Langmuir, 2021, 37, 1152-1163.	3.5	7
76	Biomimetic strategies to produce catalytically reactive CuS nanodisks. Nanoscale Advances, 2019, 1, 2857-2865.	4.6	6
77	Employing materials assembly to elucidate surface interactions of amino acids with Au nanoparticles. Soft Matter, 2011, 7, 6532.	2.7	5
78	Identification of toxicity effects of Cu₂O materials onC. elegansas a function of environmental ionic composition. Environmental Science: Nano, 2020, 7, 645-655.	4.3	5
79	Identifying inorganic material affinity classes for peptide sequences based on context learning. , 2015, , .		4
80	Design of Pd-Decorated SrTiO₃/BiOBr Heterojunction Materials for Enhanced Visible-Light-Based Photocatalytic Reactivity. Langmuir, 2021, 37, 11986-11995.	3.5	4
81	Mechanistic analysis identifying reaction pathways for rapid reductive photodebromination of polybrominated diphenyl ethers using BiVO₄/BiOBr/Pd heterojunction nanocomposite photocatalyst. Environmental Science: Nano, 2022, 9, 1106-1115.	4.3	4
82	Effect of a Mixed Peptide Ligand Layer on Au Nanoparticles for Optical Control of Catalysis. ACS Applied Nano Materials, 2022, 5, 9379-9388.	5.0	4
83	Controlling the Orientation and Viscoelasticity of Materials-Binding Peptides on Hexagonal Boron Nitride Using Fatty Acids. Journal of Physical Chemistry B, 2021, 125, 10621-10628.	2.6	3
84	Atomically Resolved Characterization of Optically Driven Ligand Reconfiguration on Nanoparticle Catalyst Surfaces. ACS Applied Materials & Interfaces, 2021, 13, 44302-44311.	8.0	3
85	Z-Contrast Enhancement in Auâ€“Pt Nanocatalysts by Correlative X-ray Absorption Spectroscopy and Electron Microscopy: Implications for Composition Determination. ACS Applied Nano Materials, 2022, 5, 8775-8782.	5.0	3
86	Identification of Toxicity Effects of CuO Materials on as a Function of Environmental Ionic Composition. Environmental Science: Nano, 2020, 7, 645-655.	4.3	2
87	A Framework for Identifying Affinity Classes of Inorganic Materials Binding Peptide Sequences. , 2013, , .		1
88	Influence of siloxane on the transport of ZnO nanoparticles from different release pathways inÂsaturated sand. RSC Advances, 2016, 6, 100494-100503.	3.6	1
89	Engendering Materials Directing Peptides with Non-Native Functionalities through Synthetic Sequence Modifications. Journal of Physical Chemistry C, 2018, 122, 26686-26697.	3.1	1
90	Non-specific proteases can produce metal oxide nanoparticles. Journal of Materials Chemistry, 2009, 19, 8276.	6.7	0