

Nicholas Bedford

List of Publications by Year in descending order

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85
papers

3,540
citations

109137

35
h-index

149479

56
g-index

85
all docs

85
docs citations

85
times ranked

5405
citing authors

#	ARTICLE	IF	CITATIONS
1	Direct insights into the role of epoxy groups on cobalt sites for acidic H ₂ O ₂ production. <i>Nature Communications</i> , 2020, 11, 4181.	5.8	204
2	Multi-Component Fe–Ni Hydroxide Nanocatalyst for Oxygen Evolution and Methanol Oxidation Reactions under Alkaline Conditions. <i>ACS Catalysis</i> , 2017, 7, 365-379.	5.5	154
3	Photocatalytic Self Cleaning Textile Fibers by Coaxial Electrospinning. <i>ACS Applied Materials & Interfaces</i> , 2010, 2, 2448-2455.	4.0	138
4	High-Performance, Long-Life, Rechargeable Li–CO ₂ Batteries based on a 3D Holey Graphene Cathode Implanted with Single Iron Atoms. <i>Advanced Materials</i> , 2020, 32, e1907436.	11.1	133
5	A single-Pt-atom-on-Ru-nanoparticle electrocatalyst for CO-resilient methanol oxidation. <i>Nature Catalysis</i> , 2022, 5, 231-237.	16.1	133
6	A Fully Reversible Water Electrolyzer Cell Made Up from FeCoNi (Oxy)hydroxide Atomic Layers. <i>Advanced Energy Materials</i> , 2019, 9, 1901312.	10.2	106
7	Elucidation of Peptide-Directed Palladium Surface Structure for Biologically Tunable Nanocatalysts. <i>ACS Nano</i> , 2015, 9, 5082-5092.	7.3	96
8	Engineered Multifunctional Nanocarriers for Cancer Diagnosis and Therapeutics. <i>Small</i> , 2011, 7, 2549-2567.	5.2	94
9	Light-Activated Tandem Catalysis Driven by Multicomponent Nanomaterials. <i>Journal of the American Chemical Society</i> , 2014, 136, 32-35.	6.6	94
10	Modulating Activity through Defect Engineering of Tin Oxides for Electrochemical CO ₂ Reduction. <i>Advanced Science</i> , 2019, 6, 1900678.	5.6	92
11	Unlocking the potential of the formate pathway in the photo-assisted Sabatier reaction. <i>Nature Catalysis</i> , 2020, 3, 1034-1043.	16.1	90
12	Exploiting Localized Surface Binding Effects to Enhance the Catalytic Reactivity of Peptide-Capped Nanoparticles. <i>Journal of the American Chemical Society</i> , 2013, 135, 11048-11054.	6.6	86
13	Promoting sulfur adsorption using surface Cu sites in metal-organic frameworks for lithium sulfur batteries. <i>Journal of Materials Chemistry A</i> , 2018, 6, 4811-4821.	5.2	85
14	Sequence-Dependent Structure/Function Relationships of Catalytic Peptide-Enabled Gold Nanoparticles Generated under Ambient Synthetic Conditions. <i>Journal of the American Chemical Society</i> , 2016, 138, 540-548.	6.6	84
15	An Exceptionally Mild and Scalable Solution-Phase Synthesis of Molybdenum Carbide Nanoparticles for Thermocatalytic CO ₂ Hydrogenation. <i>Journal of the American Chemical Society</i> , 2020, 142, 1010-1019.	6.6	79
16	Tunable Syngas Production through CO ₂ Electroreduction on Cobalt–Carbon Composite Electrocatalyst. <i>ACS Applied Materials & Interfaces</i> , 2020, 12, 9307-9315.	4.0	79
17	Periodicity and Atomic Ordering in Nanosized Particles of Crystals. <i>Journal of Physical Chemistry C</i> , 2008, 112, 8907-8911.	1.5	70
18	Nanofiber-Based Bulk Heterojunction Organic Solar Cells Using Coaxial Electrospinning. <i>Advanced Energy Materials</i> , 2012, 2, 1136-1144.	10.2	70

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19	Tungsten Oxide/Carbide Surface Heterojunction Catalyst with High Hydrogen Evolution Activity. ACS Energy Letters, 2020, 5, 3560-3568.	8.8	70
20	Introducing Nonstructural Ligands to Zirconia-like Metal-Organic Framework Nodes To Tune the Activity of Node-Supported Nickel Catalysts for Ethylene Hydrogenation. ACS Catalysis, 2019, 9, 3198-3207.	5.5	68
21	Mixed-Metal MOF-74 Templated Catalysts for Efficient Carbon Dioxide Capture and Methanation. Advanced Functional Materials, 2021, 31, 2007624.	7.8	65
22	Electronically Modified Atomic Sites Within a Multicomponent Co/Cu Composite for Efficient Oxygen Electroreduction. Advanced Energy Materials, 2021, 11, 2100303.	10.2	61
23	Peptide-Directed PdAu Nanoscale Surface Segregation: Toward Controlled Bimetallic Architecture for Catalytic Materials. ACS Nano, 2016, 10, 8645-8659.	7.3	58
24	Preserving the Exposed Facets of Pt ₃ Sn Intermetallic Nanocubes During an Order to Disorder Transition Allows the Elucidation of the Effect of the Degree of Alloy Ordering on Electrocatalysis. Journal of the American Chemical Society, 2020, 142, 3231-3239.	6.6	57
25	Keratin-based antimicrobial textiles, films, and nanofibers. Journal of Materials Chemistry B, 2013, 1, 5505.	2.9	54
26	Enhanced Electrochemical CO ₂ Reduction of Cu@Cu _x O Nanoparticles Decorated on 3D Vertical Graphene with Intrinsic sp ³ -type Defect. Advanced Functional Materials, 2020, 30, 1910118.	7.8	54
27	Uncovering Atomic-Scale Stability and Reactivity in Engineered Zinc Oxide Electrocatalysts for Controllable Syngas Production. Advanced Energy Materials, 2020, 10, 2001381.	10.2	51
28	Establishing structure/property relationships in atomically dispersed Co-Fe dual site Mn _x catalysts on microporous carbon for the oxygen reduction reaction. Journal of Materials Chemistry A, 2021, 9, 13044-13055.	5.2	49
29	Refilling Nitrogen to Oxygen Vacancies in Ultrafine Tungsten Oxide Clusters for Superior Lithium Storage. Advanced Energy Materials, 2019, 9, 1902148.	10.2	48
30	Atomic-scale identification of Pd leaching in nanoparticle catalyzed C-C coupling: effects of particle surface disorder. Chemical Science, 2015, 6, 6413-6419.	3.7	44
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.	1.5	43
32	Doped Silicon Nanocrystal Plasmonics. ACS Photonics, 2017, 4, 963-970.	3.2	43
33	Strategic Design of MoO ₂ Nanoparticles Supported by Carbon Nanowires for Enhanced Electrocatalytic Nitrogen Reduction. ACS Energy Letters, 2020, 5, 3237-3243.	8.8	43
34	Valence Alignment of Mixed Ni-Fe Hydroxide Electrocatalysts through Preferential Templating on Graphene Edges for Enhanced Oxygen Evolution. ACS Nano, 2020, 14, 11327-11340.	7.3	42
35	Light-Induced Synergistic Multidefect Sites on TiO ₂ /SiO ₂ Composites for Catalytic Dehydrogenation. ACS Catalysis, 2019, 9, 2674-2684.	5.5	41
36	Pt Single Atom Electrocatalysts at Graphene Edges for Efficient Alkaline Hydrogen Evolution. Advanced Functional Materials, 2022, 32, .	7.8	38

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37	3-D Structure of Nanosized Catalysts by High-Energy X-ray Diffraction and Reverse Monte Carlo Simulations:â€% Study of Ru. <i>Journal of Physical Chemistry C</i> , 2007, 111, 18214-18219.	1.5	36
38	Hierarchically Structured Co(OH) ₂ /CoPt/N-CN Air Cathodes for Rechargeable Zincâ€“Air Batteries. <i>ACS Applied Materials & Interfaces</i> , 2019, 11, 4983-4994.	4.0	35
39	Direct Synthetic Control over the Size, Composition, and Photocatalytic Activity of Octahedral Copper Oxide Materials: Correlation Between Surface Structure and Catalytic Functionality. <i>ACS Applied Materials & Interfaces</i> , 2015, 7, 13238-13250.	4.0	34
40	Molecularly Heterogeneous Structure of a Nonionic Deep Eutectic Solvent Composed of <i>N</i> -Methylacetamide and Lauric Acid. <i>Journal of Physical Chemistry B</i> , 2019, 123, 3984-3993.	1.2	33
41	Nature of peptide wrapping onto metal nanoparticle catalysts and driving forces for size control. <i>Nanoscale</i> , 2017, 9, 8401-8409.	2.8	29
42	Identifying the Atomic-Level Effects of Metal Composition on the Structure and Catalytic Activity of Peptide-Templated Materials. <i>ACS Nano</i> , 2015, 9, 11968-11979.	7.3	28
43	Structural Evolution of Molybdenum Disulfide Prepared by Atomic Layer Deposition for Realization of Large Scale Films in Microelectronic Applications. <i>ACS Applied Nano Materials</i> , 2018, 1, 4028-4037.	2.4	28
44	Effects of substrate porosity in carbon aerogel supported copper for electrocatalytic carbon dioxide reduction. <i>Electrochimica Acta</i> , 2019, 297, 545-552.	2.6	24
45	Reconstructing Cu Nanoparticle Supported on Vertical Graphene Surfaces via Electrochemical Treatment to Tune the Selectivity of CO ₂ Reduction toward Valuable Products. <i>ACS Catalysis</i> , 2022, 12, 4792-4805.	5.5	24
46	Unifying double flame spray pyrolysis with lanthanum doping to restrict cobaltâ€“aluminate formation in Co/Al ₂ O ₃ catalysts for the dry reforming of methane. <i>Catalysis Science and Technology</i> , 2019, 9, 4970-4980.	2.1	23
47	Probing the Atomic-Scale Structure of Amorphous Aluminum Oxide Grown by Atomic Layer Deposition. <i>ACS Applied Materials & Interfaces</i> , 2020, 12, 22804-22814.	4.0	23
48	Immobilization of Stable Thylakoid Vesicles in Conductive Nanofibers by Electrospinning. <i>Biomacromolecules</i> , 2011, 12, 778-784.	2.6	21
49	Oxidation behavior of zero-valent iron nanoparticles in mixed matrix water purification membranes. <i>Environmental Science: Water Research and Technology</i> , 2015, 1, 146-152.	1.2	21
50	Programmable Mechanical Properties from a Worm Jaw-Derived Biopolymer through Hierarchical Ion Exposure. <i>ACS Applied Materials & Interfaces</i> , 2018, 10, 31928-31937.	4.0	20
51	Fabricating Ceramic Nanostructures with Ductile-like Compression Behavior via Rapid Self-Assembly of Block Copolymer and Pre ceramic Polymer Blends. <i>ACS Applied Nano Materials</i> , 2019, 2, 250-257.	2.4	20
52	Highly Selective Metalâ€“Free Electrochemical Production of Hydrogen Peroxide on Functionalized Vertical Graphene Edges. <i>Small</i> , 2022, 18, e2105082.	5.2	20
53	Photocatalytic cellulosic electrospun fibers for the degradation of potent cyanobacteria toxin microcystin-LR. <i>Journal of Materials Chemistry</i> , 2012, 22, 12666.	6.7	19
54	Effects of Metal Composition and Ratio on Peptide-Templated Multimetallic PdPt Nanomaterials. <i>ACS Applied Materials & Interfaces</i> , 2017, 9, 8030-8040.	4.0	19

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55	High yield electrooxidation of 5-hydroxymethyl furfural catalysed by unsaturated metal sites in CoFe Prussian Blue Analogue films. <i>Green Chemistry</i> , 2021, 23, 4333-4337.	4.6	19
56	Semiconductor-Based, Solar-Driven Photochemical Cells for Fuel Generation from Carbon Dioxide in Aqueous Solutions. <i>ChemSusChem</i> , 2016, 9, 3188-3195.	3.6	17
57	Effect of a protein corona on the fibrinogen induced cellular oxidative stress of gold nanoparticles. <i>Nanoscale</i> , 2020, 12, 5898-5905.	2.8	17
58	Peptide-Modified Dendrimers as Templates for the Production of Highly Reactive Catalytic Nanomaterials. <i>Chemistry of Materials</i> , 2014, 26, 4082-4091.	3.2	16
59	Plasma Treating Mixed Metal Oxides to Improve Oxidative Performance via Defect Generation. <i>Materials</i> , 2019, 12, 2756.	1.3	15
60	Operando Converting BiOCl into Bi ₂ O ₂ (CO ₃) _x Cl _y for Efficient Electrocatalytic Reduction of Carbon Dioxide to Formate. <i>Nano-Micro Letters</i> , 2022, 14, 121.	14.4	15
61	Defective Sn-Zn perovskites through bio-directed routes for modulating CO ₂ RR. <i>Nano Energy</i> , 2022, 101, 107593.	8.2	14
62	Characterization and catalytic behavior of Fischer-Tropsch catalysts derived from different cobalt precursors. <i>Catalysis Today</i> , 2019, 338, 40-51.	2.2	13
63	Probing the Amorphous State of Pharmaceutical Compounds Within Mesoporous Material Using Pair Distribution Function Analysis. <i>Journal of Pharmaceutical Sciences</i> , 2018, 107, 2216-2224.	1.6	12
64	Chiral Restructuring of Peptide Enantiomers on Gold Nanomaterials. <i>ACS Biomaterials Science and Engineering</i> , 2020, 6, 2612-2620.	2.6	12
65	Nanoporous Zirconium Phosphonate Materials with Enhanced Chemical and Thermal Stability for Sorbent Applications. <i>ACS Applied Nano Materials</i> , 2020, 3, 3717-3729.	2.4	12
66	Toward a modular multi-material nanoparticle synthesis and assembly strategy via bionanocombinatorics: bifunctional peptides for linking Au and Ag nanomaterials. <i>Physical Chemistry Chemical Physics</i> , 2016, 18, 30845-30856.	1.3	10
67	Discovery of Anion Insertion Electrochemistry in Layered Hydroxide Nanomaterials. <i>Scientific Reports</i> , 2019, 9, 2462.	1.6	10
68	<i>In situ</i> electrochemical high-energy X-ray diffraction using a capillary working electrode cell geometry. <i>Journal of Synchrotron Radiation</i> , 2017, 24, 787-795.	1.0	9
69	Enhanced elasticity in poly(acrylic acid) gels via synthesis in the presence of high concentrations of select salts. <i>Soft Matter</i> , 2019, 15, 7596-7604.	1.2	9
70	Tailorable Micelle Morphology in Self-Assembling Block Copolymer Gels for Templating Nanoporous Ceramics. <i>Macromolecules</i> , 2020, 53, 7528-7536.	2.2	9
71	Recombinant peptide fusion construction for protein-templated catalytic palladium nanoparticles. <i>Biotechnology Progress</i> , 2020, 36, e2956.	1.3	7
72	Probing Dopant Locations in Silicon Nanocrystals via High Energy X-ray Diffraction and Reverse Monte Carlo Simulation. <i>Nano Letters</i> , 2020, 20, 852-859.	4.5	7

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73	Two Steps Back, One Leap Forward: Synergistic Energy Conversion in Plasmonic and Plasma Catalysis. ACS Energy Letters, 2022, 7, 300-309.	8.8	7
74	Structurally colored protease responsive nanoparticle hydrogels with degradation-directed assembly. Nanoscale, 2019, 11, 17904-17912.	2.8	6
75	On the growth of the soft and hard protein corona of mesoporous silica particles with varying morphology. Journal of Colloid and Interface Science, 2022, 612, 467-478.	5.0	6
76	Analysis of 3D structures of platinum nanoparticles by high energy X-ray diffraction and reverse Monte Carlo simulations. Solid State Communications, 2010, 150, 1505-1508.	0.9	5
77	Disordered TiO _x SiO _x Nanocatalysts Using Bioinspired Synthetic Routes. ACS Applied Energy Materials, 2021, 4, 7691-7701.	2.5	5
78	Proteins and peptides for functional nanomaterials: Current efforts and new opportunities. MRS Bulletin, 2020, 45, 1005-1016.	1.7	4
79	Amino-acid conjugated protein Au nanoclusters with tuneable fluorescence properties. JPhys Materials, 2020, 3, 045002.	1.8	4
80	Towards the identification of the gold binding region within trypsin stabilized nanoclusters using microwave synthesis routes. Nanoscale, 2021, 13, 1061-1068.	2.8	3
81	Oxygen Reduction Reaction: Electronically Modified Atomic Sites Within a Multicomponent Co/Cu Composite for Efficient Oxygen Electroreduction (Adv. Energy Mater. 17/2021). Advanced Energy Materials, 2021, 11, 2170067.	10.2	2
82	Structural and dynamical changes observed when transitioning from an ionic liquid to a deep eutectic solvent. Journal of Chemical Physics, 2021, 155, 054507.	1.2	2
83	Peptide Binding for Bio-Based Nanomaterials. Methods in Enzymology, 2016, 580, 581-598.	0.4	0
84	Extracting nanoscale structures from experimental and synthetic data with reverse Monte Carlo. Nano Futures, 2021, 5, 022502.	1.0	0
85	Probing the Atomic-Scale Structure of Thin Films Grown By Atomic Layer Deposition. ECS Meeting Abstracts, 2019, , .	0.0	0