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	Highly Selective Metalâ€Free Electrochemical Production of Hydrogen Peroxide on Functionalized Vertical Graphene Edges. Small, 2022, 18, e2105082.	5.2	20
2	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
3	A single-Pt-atom-on-Ru-nanoparticle electrocatalyst for CO-resilient methanol oxidation. Nature Catalysis, 2022, 5, 231-237.	16.1	133
4	Reconstructing Cu Nanoparticle Supported on Vertical Graphene Surfaces via Electrochemical Treatment to Tune the Selectivity of CO₂ Reduction toward Valuable Products. ACS Catalysis, 2022, 12, 4792-4805.	5.5	24
5	Two Steps Back, One Leap Forward: Synergistic Energy Conversion in Plasmonic and Plasma Catalysis. ACS Energy Letters, 2022, 7, 300-309.	8.8	7
6	Operando Converting BiOCl into Bi2O2(CO3)xCly for Efficient Electrocatalytic Reduction of Carbon Dioxide to Formate. Nano-Micro Letters, 2022, 14, 121.	14.4	15
7	Pt Single Atom Electrocatalysts at Graphene Edges for Efficient Alkaline Hydrogen Evolution. Advanced Functional Materials, 2022, 32, .	7.8	38
8	Defective Sn-Zn perovskites through bio-directed routes for modulating CO2RR. Nano Energy, 2022, 101, 107593.	8.2	14
9	Mixedâ€Metal MOFâ€74 Templated Catalysts for Efficient Carbon Dioxide Capture and Methanation. Advanced Functional Materials, 2021, 31, 2007624.	7.8	65
10	Towards the identification of the gold binding region within trypsin stabilized nanoclusters using microwave synthesis routes. Nanoscale, 2021, 13, 1061-1068.	2.8	3
11	High yield electrooxidation of 5-hydroxymethyl furfural catalysed by unsaturated metal sites in CoFe Prussian Blue Analogue films. Green Chemistry, 2021, 23, 4333-4337.	4.6	19
12	Establishing structure/property relationships in atomically dispersed Coâ€“Fe dual site Mâ€“N_x catalysts on microporous carbon for the oxygen reduction reaction. Journal of Materials Chemistry A, 2021, 9, 13044-13055.	5.2	49
13	Electronically Modified Atomic Sites Within a Multicomponent Co/Cu Composite for Efficient Oxygen Electroreduction. Advanced Energy Materials, 2021, 11, 2100303.	10.2	61
14	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
15	Extracting nanoscale structures from experimental and synthetic data with reverse Monte Carlo. Nano Futures, 2021, 5, 022502.	1.0	0
16	Disordered TiO_xâ€“SiO_x Nanocatalysts Using Bioinspired Synthetic Routes. ACS Applied Energy Materials, 2021, 4, 7691-7701.	2.5	5
17	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
18	Chiral Restructuring of Peptide Enantiomers on Gold Nanomaterials. ACS Biomaterials Science and Engineering, 2020, 6, 2612-2620.	2.6	12

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19	Recombinant peptide fusion construction for proteinâ€templated catalytic palladium nanoparticles. Biotechnology Progress, 2020, 36, e2956.	1.3	7
20	An Exceptionally Mild and Scalable Solution-Phase Synthesis of Molybdenum Carbide Nanoparticles for Thermocatalytic CO₂ Hydrogenation. Journal of the American Chemical Society, 2020, 142, 1010-1019.	6.6	79
21	Probing Dopant Locations in Silicon Nanocrystals via High Energy X-ray Diffraction and Reverse Monte Carlo Simulation. Nano Letters, 2020, 20, 852-859.	4.5	7
22	Tungsten Oxide/Carbide Surface Heterojunction Catalyst with High Hydrogen Evolution Activity. ACS Energy Letters, 2020, 5, 3560-3568.	8.8	70
23	Unlocking the potential of the formate pathway in the photo-assisted Sabatier reaction. Nature Catalysis, 2020, 3, 1034-1043.	16.1	90
24	Valence Alignment of Mixed Niâ€“Fe Hydroxide Electrocatalysts through Preferential Templating on Graphene Edges for Enhanced Oxygen Evolution. ACS Nano, 2020, 14, 11327-11340.	7.3	42
25	Strategic Design of MoO₂ Nanoparticles Supported by Carbon Nanowires for Enhanced Electrocatalytic Nitrogen Reduction. ACS Energy Letters, 2020, 5, 3237-3243.	8.8	43
26	Tailorable Micelle Morphology in Self-Assembling Block Copolymer Gels for Templating Nanoporous Ceramics. Macromolecules, 2020, 53, 7528-7536.	2.2	9
27	Direct insights into the role of epoxy groups on cobalt sites for acidic H2O2 production. Nature Communications, 2020, 11, 4181.	5.8	204
28	Proteins and peptides for functional nanomaterials: Current efforts and new opportunities. MRS Bulletin, 2020, 45, 1005-1016.	1.7	4
29	Enhanced Electrochemical CO₂ Reduction of Cu@Cu_xO Nanoparticles Decorated on 3D Vertical Graphene with Intrinsic sp³â€type Defect. Advanced Functional Materials, 2020, 30, 1910118.	7.8	54
30	Amino-acid conjugated proteinâ€“Au nanoclusters with tuneable fluorescence properties. JPhys Materials, 2020, 3, 045002.	1.8	4
31	Uncovering Atomicâ€Scale Stability and Reactivity in Engineered Zinc Oxide Electrocatalysts for Controllable Syngas Production. Advanced Energy Materials, 2020, 10, 2001381.	10.2	51
32	Tunable Syngas Production through CO₂ Electroreduction on Cobaltâ€“Carbon Composite Electrocatalyst. ACS Applied Materials & Interfaces, 2020, 12, 9307-9315.	4.0	79
33	Highâ€Performance, Longâ€Life, Rechargeable Liâ€“CO₂ Batteries based on a 3D Holey Graphene Cathode Implanted with Single Iron Atoms. Advanced Materials, 2020, 32, e1907436.	11.1	133
34	Effect of a protein corona on the fibrinogen induced cellular oxidative stress of gold nanoparticles. Nanoscale, 2020, 12, 5898-5905.	2.8	17
35	Preserving the Exposed Facets of Pt₃Sn 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
36	Nanoporous Zirconium Phosphonate Materials with Enhanced Chemical and Thermal Stability for Sorbent Applications. ACS Applied Nano Materials, 2020, 3, 3717-3729.	2.4	12

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37	Probing the Atomic-Scale Structure of Amorphous Aluminum Oxide Grown by Atomic Layer Deposition. ACS Applied Materials & Interfaces, 2020, 12, 22804-22814.	4.0	23
38	Unifying double flame spray pyrolysis with lanthanum doping to restrict cobaltâ€“aluminate formation in Co/Al₂O₃ catalysts for the dry reforming of methane. Catalysis Science and Technology, 2019, 9, 4970-4980.	2.1	23
39	Refilling Nitrogen to Oxygen Vacancies in Ultrafine Tungsten Oxide Clusters for Superior Lithium Storage. Advanced Energy Materials, 2019, 9, 1902148.	10.2	48
40	Modulating Activity through Defect Engineering of Tin Oxides for Electrochemical CO₂ Reduction. Advanced Science, 2019, 6, 1900678.	5.6	92
41	Plasma Treating Mixed Metal Oxides to Improve Oxidative Performance via Defect Generation. Materials, 2019, 12, 2756.	1.3	15
42	Enhanced elasticity in poly(acrylic acid) gels via synthesis in the presence of high concentrations of select salts. Soft Matter, 2019, 15, 7596-7604.	1.2	9
43	Structurally colored protease responsive nanoparticle hydrogels with degradation-directed assembly. Nanoscale, 2019, 11, 17904-17912.	2.8	6
44	A Fully Reversible Water Electrolyzer Cell Made Up from FeCoNi (Oxy)hydroxide Atomic Layers. Advanced Energy Materials, 2019, 9, 1901312.	10.2	106
45	Characterization and catalytic behavior of Fischerâ€“Tropsch catalysts derived from different cobalt precursors. Catalysis Today, 2019, 338, 40-51.	2.2	13
46	Discovery of Anion Insertion Electrochemistry in Layered Hydroxide Nanomaterials. Scientific Reports, 2019, 9, 2462.	1.6	10
47	Molecularly Heterogeneous Structure of a Nonionic Deep Eutectic Solvent Composed of N-Methylacetamide and Lauric Acid. Journal of Physical Chemistry B, 2019, 123, 3984-3993.	1.2	33
48	Introducing Nonstructural Ligands to Zirconia-like Metalâ€“Organic Framework Nodes To Tune the Activity of Node-Supported Nickel Catalysts for Ethylene Hydrogenation. ACS Catalysis, 2019, 9, 3198-3207.	5.5	68
49	Light-Induced Synergistic Multidefect Sites on TiO₂/SiO₂ Composites for Catalytic Dehydrogenation. ACS Catalysis, 2019, 9, 2674-2684.	5.5	41
50	Hierarchically Structured Co(OH)₂/CoPt/N-CN Air Cathodes for Rechargeable Zincâ€“Air Batteries. ACS Applied Materials & Interfaces, 2019, 11, 4983-4994.	4.0	35
51	Fabricating Ceramic Nanostructures with Ductile-like Compression Behavior via Rapid Self-Assembly of Block Copolymer and Preceramic Polymer Blends. ACS Applied Nano Materials, 2019, 2, 250-257.	2.4	20
52	Effects of substrate porosity in carbon aerogel supported copper for electrocatalytic carbon dioxide reduction. Electrochimica Acta, 2019, 297, 545-552.	2.6	24
53	Probing the Atomic-Scale Structure of Thin Films Grown By Atomic Layer Deposition. ECS Meeting Abstracts, 2019, , .	0.0	0
54	Promoting sulfur adsorption using surface Cu sites in metalâ€“organic frameworks for lithium sulfur batteries. Journal of Materials Chemistry A, 2018, 6, 4811-4821.	5.2	85

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55	Probing the Amorphous State of Pharmaceutical Compounds Within Mesoporous Material Using Pair Distribution Function Analysis. Journal of Pharmaceutical Sciences, 2018, 107, 2216-2224.	1.6	12
56	Programmable Mechanical Properties from a Worm Jaw-Derived Biopolymer through Hierarchical Ion Exposure. ACS Applied Materials & Interfaces, 2018, 10, 31928-31937.	4.0	20
57	Structural Evolution of Molybdenum Disulfide Prepared by Atomic Layer Deposition for Realization of Large Scale Films in Microelectronic Applications. ACS Applied Nano Materials, 2018, 1, 4028-4037.	2.4	28
58	Effects of Metal Composition and Ratio on Peptide-Templated Multimetallic PdPt Nanomaterials. ACS Applied Materials & Interfaces, 2017, 9, 8030-8040.	4.0	19
59	Multi-Component Feâ€“Ni Hydroxide Nanocatalyst for Oxygen Evolution and Methanol Oxidation Reactions under Alkaline Conditions. ACS Catalysis, 2017, 7, 365-379.	5.5	154
60	Doped Silicon Nanocrystal Plasmonics. ACS Photonics, 2017, 4, 963-970.	3.2	43
61	Nature of peptide wrapping onto metal nanoparticle catalysts and driving forces for size control. Nanoscale, 2017, 9, 8401-8409.	2.8	29
62	In situelectrochemical high-energy X-ray diffraction using a capillary working electrode cell geometry. Journal of Synchrotron Radiation, 2017, 24, 787-795.	1.0	9
63	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.	1.3	10
64	Peptide-Directed PdAu Nanoscale Surface Segregation: Toward Controlled Bimetallic Architecture for Catalytic Materials. ACS Nano, 2016, 10, 8645-8659.	7.3	58
65	Semiconductorâ€Based, Solarâ€Driven Photochemical Cells for Fuel Generation from Carbon Dioxide in Aqueous Solutions. ChemSusChem, 2016, 9, 3188-3195.	3.6	17
66	Peptide Binding for Bio-Based Nanomaterials. Methods in Enzymology, 2016, 580, 581-598.	0.4	0
67	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.	6.6	84
68	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.	4.0	34
69	Oxidation behavior of zero-valent iron nanoparticles in mixed matrix water purification membranes. Environmental Science: Water Research and Technology, 2015, 1, 146-152.	1.2	21
70	Atomic-scale identification of Pd leaching in nanoparticle catalyzed Câ€“C coupling: effects of particle surface disorder. Chemical Science, 2015, 6, 6413-6419.	3.7	44
71	Elucidation of Peptide-Directed Palladium Surface Structure for Biologically Tunable Nanocatalysts. ACS Nano, 2015, 9, 5082-5092.	7.3	96
72	Identifying the Atomic-Level Effects of Metal Composition on the Structure and Catalytic Activity of Peptide-Templated Materials. ACS Nano, 2015, 9, 11968-11979.	7.3	28

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73	Light-Activated Tandem Catalysis Driven by Multicomponent Nanomaterials. Journal of the American Chemical Society, 2014, 136, 32-35.	6.6	94
74	Peptide-Modified Dendrimers as Templates for the Production of Highly Reactive Catalytic Nanomaterials. Chemistry of Materials, 2014, 26, 4082-4091.	3.2	16
75	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
76	Exploiting Localized Surface Binding Effects to Enhance the Catalytic Reactivity of Peptide-Capped Nanoparticles. Journal of the American Chemical Society, 2013, 135, 11048-11054.	6.6	86
77	Keratin-based antimicrobial textiles, films, and nanofibers. Journal of Materials Chemistry B, 2013, 1, 5505.	2.9	54
78	Photocatalytic cellulosic electrospun fibers for the degradation of potent cyanobacteria toxin microcystin-LR. Journal of Materials Chemistry, 2012, 22, 12666.	6.7	19
79	Nanofiberâ€Based Bulkâ€Heterojunction Organic Solar Cells Using Coaxial Electrospinning. Advanced Energy Materials, 2012, 2, 1136-1144.	10.2	70
80	Immobilization of Stable Thylakoid Vesicles in Conductive Nanofibers by Electrospinning. Biomacromolecules, 2011, 12, 778-784.	2.6	21
81	Engineered Multifunctional Nanocarriers for Cancer Diagnosis and Therapeutics. Small, 2011, 7, 2549-2567.	5.2	94
82	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
83	Photocatalytic Self Cleaning Textile Fibers by Coaxial Electrospinning. ACS Applied Materials & Interfaces, 2010, 2, 2448-2455.	4.0	138
84	Periodicity and Atomic Ordering in Nanosized Particles of Crystals. Journal of Physical Chemistry C, 2008, 112, 8907-8911.	1.5	70
85	3-D Structure of Nanosized Catalysts by High-Energy X-ray Diffraction and Reverse Monte Carlo Simulations:â€‰ Study of Ru. Journal of Physical Chemistry C, 2007, 111, 18214-18219.	1.5	36