

CITATION REPORT

List of articles citing

In Situ Coupling of Strung Co₄N and Intertwined N-C Fibers toward Free-Standing Bifunctional Cathode for Robust, Efficient, and Flexible Zn-Air Batteries

DOI: 10.1021/jacs.6b05046

Journal of the American Chemical Society, 2016, 138, 10226-31

Source: <https://exaly.com/paper-pdf/64612161/citation-report.pdf>

Version: 2024-04-24

This report has been generated based on the citations recorded by exaly.com for the above article. For the latest version of this publication list, visit the link given above.

The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

| # | Paper | IF | Citations |
|-----|--|----|-----------|
| 793 | Conductive Leaflike Cobalt MetalOrganic Framework Nanoarray on Carbon Cloth as a Flexible and Versatile Anode toward Both Electrocatalytic Glucose and Water Oxidation. | | |
| 792 | Electrospun Thin-Walled CuCo ₂ O ₄ @C Nanotubes as Bifunctional Oxygen Electrocatalysts for Rechargeable ZnAir Batteries. | | |
| 791 | Robust InNCo ₃ Mnx Nitride-Supported Pt Nanoparticles as High-Performance Bifunctional Electrocatalysts for ZnAir Batteries. | | |
| 790 | Fused Hybrid Linkers for MetalOrganic Framework-Derived Bifunctional Oxygen Electrocatalysts. | | |
| 789 | Self-Assembly-Assisted Facile Synthesis of MoS ₂ Based Hybrid Tubular Nanostructures for Efficient Bifunctional Electrocatalysis. | | |
| 788 | . | | |
| 787 | Updating the Intrinsic Activity of a Single-Atom Site with a PO Bond for a Rechargeable ZnAir Battery. | | |
| 786 | AgVO ₃ Nanorods Decorated with Polypyrrole and Tetraphenylporphyrin as Ternary Catalysts for Oxygen Electrode Reactions. | | |
| 785 | Bimetallic Co _{3.2} Fe _{0.8} NNitrogenCarbon Nanocomposites for Simultaneous Electrocatalytic Oxygen Reduction Oxygen Evolution, and Hydrogen Evolution. | | |
| 784 | Probing Enhanced Site Activity of CoFe Bimetallic Subnanoclusters Derived from Dual Cross-Linked Hydrogels for Oxygen Electrocatalysis. | | |
| 783 | Hierarchically Designed 3D Holey C ₂ N Aerogels as Bifunctional Oxygen Electrodes for Flexible and Rechargeable Zn-Air Batteries. | | |
| 782 | Nickel Nanoparticles Encapsulated in Nitrogen-Doped Carbon Nanotubes as Excellent Bifunctional Oxygen Electrode for Fuel Cell and MetalAir Battery. | | |
| 781 | Hierarchical Porous Carbon Derived from Coal Tar Pitch Containing Discrete CoN _x C Active Sites for Efficient Oxygen Electrocatalysis and Rechargeable ZnAir Batteries. | | |
| 780 | Layered Double Hydroxide@Polydopamine CoreShell Nanosheet Arrays-Derived Bifunctional Electrocatalyst for Efficient Flexible, All-Solid-State ZincAir Battery. | | |
| 779 | Superlong Single-Crystal MetalOrganic Framework Nanotubes. | | |
| 778 | Heterostructure-Promoted Oxygen Electrocatalysis Enables Rechargeable ZincAir Battery with Neutral Aqueous Electrolyte. | | |
| 777 | Antiperovskite Nitrides CuNCo ₃ V _x : Highly Efficient and Durable Electrocatalysts for the Oxygen-Evolution Reaction. | | |

| | | | |
|-----|--|------|-----|
| 776 | Three-Dimensional Fe,N-Decorated Carbon-Supported NiFeP Nanoparticles as an Efficient Bifunctional Catalyst for Rechargeable ZincO ₂ Batteries. | | |
| 775 | Selenium-Doped Carbon Nanosheets with Strong Electron Cloud Delocalization for Nondeposition of Metal Oxides on Air Cathode of ZincAir Battery. | | |
| 774 | Interfacial Engineering of Cobalt Nitrides and Mesoporous Nitrogen-Doped Carbon: Toward Efficient Overall Water-Splitting Activity with Enhanced Charge-Transfer Efficiency. | | |
| 773 | Stereodefined Codoping of spN and S Atoms in Few-Layer Graphdiyne for Oxygen Evolution Reaction. | | |
| 772 | In situ integration of CoFe alloy nanoparticles with nitrogen-doped carbon nanotubes as advanced bifunctional cathode catalysts for Zn-air batteries. 2016 , 8, 20048-20055 | | 106 |
| 771 | A facile strategy to fabricate nitrogen-doped graphene aerogel-supported Fe ₃ N nanoparticles as efficient electrocatalysts for the oxygen reduction reaction. 2017 , 41, 1755-1764 | | 18 |
| 770 | Aqueous Electrochemical Energy Storage with a Mediator-Ion Solid Electrolyte. <i>Advanced Energy Materials</i> , 2017 , 7, 1602454 | 21.8 | 21 |
| 769 | Electrodeposited Co-Fe as an oxygen evolution catalyst for rechargeable zinc-air batteries. 2017 , 75, 73-77 | | 28 |
| 768 | Reduced graphene oxide intercalated Co ₂ C or Co ₄ N nanoparticles as an efficient and durable fuel cell catalyst for oxygen reduction. 2017 , 5, 2972-2980 | | 73 |
| 767 | Cobalt nanoparticles encapsulated in carbon nanotube-grafted nitrogen and sulfur co-doped multichannel carbon fibers as efficient bifunctional oxygen electrocatalysts. 2017 , 5, 4949-4961 | | 101 |
| 766 | Self-sacrifice template formation of nitrogen-doped porous carbon microtubes towards high performance anode materials in lithium ion batteries. 2017 , 316, 1004-1010 | | 35 |
| 765 | Topochemical Reaction of Exfoliated Layered Cobalt(II) Hydroxide for the Synthesis of Ultrapure Co ₃ O ₄ as an Oxygen Reduction Catalyst. 2017 , 2017, 2184-2189 | | 10 |
| 764 | Fe ₃ C@Fe/N Doped Graphene-Like Carbon Sheets as a Highly Efficient Catalyst in Al-Air Batteries. <i>Journal of the Electrochemical Society</i> , 2017 , 164, F475-F483 | 3.9 | 31 |
| 763 | Retracted Article: A facile strategy to fabricate nitrogen-doped graphene aerogel supported Fe ₃ N nanoparticles as efficient electrocatalysts for the oxygen reduction reaction. 2017 , | | |
| 762 | Co@Pt Core@Shell nanoparticles encapsulated in porous carbon derived from zeolitic imidazolate framework 67 for oxygen electroreduction in alkaline media. 2017 , 343, 458-466 | | 81 |
| 761 | NiO/CoN Porous Nanowires as Efficient Bifunctional Catalysts for Zn-Air Batteries. <i>ACS Nano</i> , 2017 , 11, 2275-2283 | 16.7 | 355 |
| 760 | Vanadium proton exchange membrane water electrolyser. 2017 , 349, 144-151 | | 4 |
| 759 | Self-Supported Cobalt Nickel Nitride Nanowires Electrode for Overall Electrochemical Water Splitting. 2017 , 5, 1908-1911 | | 31 |

| | | | |
|-----|--|------|-----|
| 758 | Cyclohexanedione as the negative electrode reaction for aqueous organic redox flow batteries. 2017 , 197, 318-326 | | 26 |
| 757 | Tuning the electrocatalysts for oxygen evolution reaction. 2017 , 5, 37-57 | | 68 |
| 756 | Directed synthesis of carbon nanotube arrays based on layered double hydroxides toward highly-efficient bifunctional oxygen electrocatalysis. 2017 , 37, 98-107 | | 110 |
| 755 | Updates on the development of nanostructured transition metal nitrides for electrochemical energy storage and water splitting. 2017 , 20, 425-451 | | 242 |
| 754 | A bottom-up, template-free route to mesoporous N-doped carbons for efficient oxygen electroreduction. 2017 , 52, 9794-9805 | | 7 |
| 753 | Free-Standing Holey Ni(OH) Nanosheets with Enhanced Activity for Water Oxidation. <i>Small</i> , 2017 , 13, 1700334 | 11 | 75 |
| 752 | Ultrathin Co ₃ O ₄ Layers with Large Contact Area on Carbon Fibers as High-Performance Electrode for Flexible Zinc-Air Battery Integrated with Flexible Display. <i>Advanced Energy Materials</i> , 2017 , 7, 1700779 | 21.8 | 218 |
| 751 | Einzelatom-Elektrokatalysatoren. <i>Angewandte Chemie</i> , 2017 , 129, 14132-14148 | 3.6 | 83 |
| 750 | Single-Atom Electrocatalysts. <i>Angewandte Chemie - International Edition</i> , 2017 , 56, 13944-13960 | 16.4 | 756 |
| 749 | Glucose-directed synthesis of Pt-Cu alloy nanowires networks and their electro-catalytic performance for ethylene glycol oxidation. <i>Journal of Alloys and Compounds</i> , 2017 , 727, 475-483 | 5.7 | 20 |
| 748 | Design Strategies toward Advanced MOF-Derived Electrocatalysts for Energy-Conversion Reactions. <i>Advanced Energy Materials</i> , 2017 , 7, 1700518 | 21.8 | 406 |
| 747 | Kirkendall Effect in Creating Three-Dimensional Metal Catalysts for Hierarchically Porous Ultrathin Graphite with Unique Properties. <i>Chemistry of Materials</i> , 2017 , 29, 4991-4998 | 9.6 | 8 |
| 746 | Sequentially Electrodeposited MnOX/Co-Fe as Bifunctional Electrocatalysts for Rechargeable Zinc-Air Batteries. <i>Journal of the Electrochemical Society</i> , 2017 , 164, A1012-A1021 | 3.9 | 22 |
| 745 | In Situ Fabrication of Defective CoN Single Clusters on Reduced Graphene Oxide Sheets with Excellent Electrocatalytic Activity for Oxygen Reduction. <i>ACS Applied Materials & Interfaces</i> , 2017 , 9, 22490-22501 | 9.5 | 35 |
| 744 | Ni ₂ Zn Alloy Nanosheets Arrayed on Nickel Foams a Promising Catalyst for Electrooxidation of Hydrazine. 2017 , 4, 1944-1949 | | 31 |
| 743 | Fe/N co-doped carbon materials with controllable structure as highly efficient electrocatalysts for oxygen reduction reaction in Al-air batteries. <i>Energy Storage Materials</i> , 2017 , 8, 49-58 | 19.4 | 56 |
| 742 | Engineering High-Energy Interfacial Structures for High-Performance Oxygen-Involving Electrocatalysis. <i>Angewandte Chemie - International Edition</i> , 2017 , 56, 8539-8543 | 16.4 | 254 |
| 741 | Engineering High-Energy Interfacial Structures for High-Performance Oxygen-Involving Electrocatalysis. <i>Angewandte Chemie</i> , 2017 , 129, 8659-8663 | 3.6 | 32 |

| | | | |
|-----|--|------|-----|
| 740 | Double-layer membrane cathode with improved oxygen diffusivity in zinc-air batteries. <i>Energy Storage Materials</i> , 2017 , 8, 1-9 | 19.4 | 11 |
| 739 | A metal-organic framework devised Co-N doped carbon microsphere/nanofiber hybrid as a free-standing 3D oxygen catalyst. 2017 , 53, 4034-4037 | | 55 |
| 738 | Novel Iron/Cobalt-Containing Polypyrrole Hydrogel-Derived Trifunctional Electrocatalyst for Self-Powered Overall Water Splitting. <i>Advanced Functional Materials</i> , 2017 , 27, 1606497 | 15.6 | 255 |
| 737 | Rechargeable zinc-air batteries: a promising way to green energy. 2017 , 5, 7651-7666 | | 323 |
| 736 | Single crystalline pyrochlore nanoparticles with metallic conduction as efficient bi-functional oxygen electrocatalysts for Zn-air batteries. 2017 , 10, 129-136 | | 121 |
| 735 | Highly exposed Fe-N active sites in porous poly-iron-phthalocyanine based oxygen reduction electrocatalyst with ultrahigh performance for air cathode. 2017 , 46, 1803-1810 | | 31 |
| 734 | In Situ Coupling Strategy for the Preparation of FeCo Alloys and Co N Hybrid for Highly Efficient Oxygen Evolution. <i>Advanced Materials</i> , 2017 , 29, 1704091 | 24 | 136 |
| 733 | . 2017 , 7, 8386-8393 | | 97 |
| 732 | Oxygen Vacancies Dominated NiS /CoS Interface Porous Nanowires for Portable Zn-Air Batteries Driven Water Splitting Devices. <i>Advanced Materials</i> , 2017 , 29, 1704681 | 24 | 400 |
| 731 | Multifunctional MoN/C@MoS ₂ Electrocatalysts for HER, OER, ORR, and Zn-air Batteries. <i>Advanced Functional Materials</i> , 2017 , 27, 1702300 | 15.6 | 519 |
| 730 | Rational design of carbon-based oxygen electrocatalysts for zinc-air batteries. 2017 , 4, 45-59 | | 27 |
| 729 | Mixed-Metal-Organic Framework Self-Template Synthesis of Porous Hybrid Oxyphosphides for Efficient Oxygen Evolution Reaction. <i>ACS Applied Materials & Interfaces</i> , 2017 , 9, 38621-38628 | 9.5 | 32 |
| 728 | Metallic Cobalt@Nitrogen-Doped Carbon Nanocomposites: Carbon-Shell Regulation toward Efficient Bi-Functional Electrocatalysis. <i>ACS Applied Materials & Interfaces</i> , 2017 , 9, 37721-37730 | 9.5 | 48 |
| 727 | Coupling cobalt-iron bimetallic nitrides and N-doped multi-walled carbon nanotubes as high-performance bifunctional catalysts for oxygen evolution and reduction reaction. <i>Electrochimica Acta</i> , 2017 , 258, 51-60 | 6.7 | 44 |
| 726 | Co Nanoparticles Encapsulated in N-Doped Carbon Nanosheets: Enhancing Oxygen Reduction Catalysis without Metal-Nitrogen Bonding. <i>ACS Applied Materials & Interfaces</i> , 2017 , 9, 38499-38506 | 9.5 | 33 |
| 725 | Macroscopic-Scale Three-Dimensional Carbon Nanofiber Architectures for Electrochemical Energy Storage Devices. <i>Advanced Energy Materials</i> , 2017 , 7, 1700826 | 21.8 | 109 |
| 724 | 3D carbon nanoframe scaffold-immobilized Ni ₃ FeN nanoparticle electrocatalysts for rechargeable zinc-air batteries cathodes. 2017 , 40, 382-389 | | 116 |
| 723 | Modeling of phase separation across interconnected electrode particles in lithium-ion batteries. 2017 , 7, 41254-41264 | | 18 |

| | | | |
|-----|---|------|-----|
| 722 | Cobalt Phosphide Coupled with Heteroatom-Doped Nanocarbon Hybrid Electrocatalysts for Efficient, Long-Life Rechargeable Zinc-Air Batteries. <i>Small</i> , 2017 , 13, 1702068 | 11 | 82 |
| 721 | Atomic-Level Coupled Interfaces and Lattice Distortion on CuS/NiS ₂ Nanocrystals Boost Oxygen Catalysis for Flexible Zn-Air Batteries. <i>Advanced Functional Materials</i> , 2017 , 27, 1703779 | 15.6 | 154 |
| 720 | Electrocatalysis of Rechargeable Non-Lithium Metal-Air Batteries. 2017 , 4, 1700589 | | 17 |
| 719 | Flexible Zn and Li-air batteries: recent advances, challenges, and future perspectives. 2017 , 10, 2056-2080 | | 353 |
| 718 | A prototype reactor for highly selective solar-driven CO ₂ reduction to synthesis gas using nanosized earth-abundant catalysts and silicon photovoltaics. 2017 , 10, 2256-2266 | | 87 |
| 717 | Efficient MMoO ₄ (M = Co, Ni) carbon cloth electrodes for water oxidation. 2017 , 4, 1791-1797 | | 34 |
| 716 | NiFe Layered Double Hydroxide Nanoparticles on Co,N-Codoped Carbon Nanoframes as Efficient Bifunctional Catalysts for Rechargeable Zinc-Air Batteries. <i>Advanced Energy Materials</i> , 2017 , 7, 1700467 | 21.8 | 280 |
| 715 | Influence of nitrogen doping on the electrocatalytic activity of Ni-incorporated carbon nanofibers toward urea oxidation. <i>International Journal of Hydrogen Energy</i> , 2017 , 42, 21741-21750 | 6.7 | 33 |
| 714 | Ionic liquids as phosphorus sources for preparation of cobalt phosphide and multiple heteroatom-doped mesoporous carbon with high electrocatalytic activity toward oxygen reduction reaction. <i>International Journal of Hydrogen Energy</i> , 2017 , 42, 19019-19027 | 6.7 | 10 |
| 713 | Design of Efficient Bifunctional Oxygen Reduction/Evolution Electrocatalyst: Recent Advances and Perspectives. <i>Advanced Energy Materials</i> , 2017 , 7, 1700544 | 21.8 | 407 |
| 712 | All-Solid-State, Foldable, and Rechargeable Zn-Air Batteries Based on Manganese Oxide Grown on Graphene-Coated Carbon Cloth Air Cathode. <i>Advanced Energy Materials</i> , 2017 , 7, 1700927 | 21.8 | 106 |
| 711 | Electrocatalysts Derived from Metal-Organic Frameworks for Oxygen Reduction and Evolution Reactions in Aqueous Media. <i>Small</i> , 2017 , 13, 1701143 | 11 | 125 |
| 710 | Living Fe mineral@bacteria encrustation-derived and self-templated preparation of a mesoporous Fe-N-C electrocatalyst with high activity for oxygen reduction. 2017 , 123, 481-491 | | 31 |
| 709 | CoS nanoparticles anchored on nitrogen and sulfur dual-doped carbon nanosheets as highly efficient bifunctional electrocatalyst for oxygen evolution and reduction reactions. 2017 , 9, 12432-12440 | | 110 |
| 708 | Atomic-Scale CoO _x Species in Metal-Organic Frameworks for Oxygen Evolution Reaction. <i>Advanced Functional Materials</i> , 2017 , 27, 1702546 | 15.6 | 279 |
| 707 | Defect Engineering toward Atomic Co-N -C in Hierarchical Graphene for Rechargeable Flexible Solid Zn-Air Batteries. <i>Advanced Materials</i> , 2017 , 29, 1703185 | 24 | 473 |
| 706 | Bifunctional petaloid nickel manganese layered double hydroxides decorated on a freestanding carbon foam for flexible asymmetric supercapacitor and oxygen evolution. <i>Electrochimica Acta</i> , 2017 , 252, 275-285 | 6.7 | 24 |
| 705 | A novel composite (FMC) to serve as a durable 3D-clam-shaped bifunctional cathode catalyst for both primary and rechargeable zinc-air batteries. 2017 , 62, 1216-1226 | | 31 |

| | | | |
|-----|---|------|-----|
| 704 | Nitrogen-Doped Porous Graphdiyne: A Highly Efficient Metal-Free Electrocatalyst for Oxygen Reduction Reaction. <i>ACS Applied Materials & Interfaces</i> , 2017 , 9, 29744-29752 | 9.5 | 131 |
| 703 | Flexible and rechargeable Zn air batteries based on green feedstocks with 75% round-trip efficiency. 2017 , 1, 1909-1914 | | 27 |
| 702 | Electronic Modulation of Electrocatalytically Active Center of CuS Nanodisks by Cobalt-Doping for Highly Efficient Oxygen Evolution Reaction. <i>ACS Nano</i> , 2017 , 11, 12230-12239 | 16.7 | 93 |
| 701 | Amorphous Co eB nanospheres for efficient water oxidation. 2017 , 5, 25378-25384 | | 78 |
| 700 | Electrospun Thin-Walled CuCoO@C Nanotubes as Bifunctional Oxygen Electrocatalysts for Rechargeable Zn-Air Batteries. <i>Nano Letters</i> , 2017 , 17, 7989-7994 | 11.5 | 152 |
| 699 | Toward a molecular design of porous carbon materials. 2017 , 20, 592-610 | | 146 |
| 698 | Crab-shell induced synthesis of ordered macroporous carbon nanofiber arrays coupled with MnCoO nanoparticles as bifunctional oxygen catalysts for rechargeable Zn-air batteries. 2017 , 9, 11148-11157 | | 30 |
| 697 | Constructing Ohmic contact in cobalt selenide/Ti dyadic electrode: The third aspect to promote the oxygen evolution reaction. 2017 , 39, 321-327 | | 28 |
| 696 | Boosting the bifunctional electrocatalytic oxygen activities of CoOx nanoarrays with a porous N-doped carbon coating and their application in Zn air batteries. 2017 , 5, 17804-17810 | | 38 |
| 695 | Highly dispersed few-layer MoS2 nanosheets on S, N co-doped carbon for electrocatalytic H2 production. 2017 , 38, 1028-1037 | | 13 |
| 694 | CoS nanosheet arrays grown on nickel foam as an excellent OER catalyst. <i>Journal of Alloys and Compounds</i> , 2017 , 723, 772-778 | 5.7 | 53 |
| 693 | Fe/N/S-doped mesoporous carbon nanostructures as electrocatalysts for oxygen reduction reaction in acid medium. 2017 , 203, 889-898 | | 138 |
| 692 | Electrochemical Reduction of N under Ambient Conditions for Artificial N Fixation and Renewable Energy Storage Using N /NH Cycle. <i>Advanced Materials</i> , 2017 , 29, 1604799 | 24 | 762 |
| 691 | Dual-Native Vacancy Activated Basal Plane and Conductivity of MoSe with High-Efficiency Hydrogen Evolution Reaction. <i>Small</i> , 2018 , 14, e1704150 | 11 | 78 |
| 690 | Homogeneous Coating with an Anion-Exchange Ionomer Improves the Cycling Stability of Secondary Batteries with Zinc Anodes. <i>ACS Applied Materials & Interfaces</i> , 2018 , 10, 8640-8648 | 9.5 | 45 |
| 689 | Defective Carbon oP Nanoparticles Hybrids with Interfacial Charges Polarization for Efficient Bifunctional Oxygen Electrocatalysis. <i>Advanced Energy Materials</i> , 2018 , 8, 1703623 | 21.8 | 164 |
| 688 | Nanocarbon-Based Electrocatalysts for Rechargeable Aqueous Li/Zn-Air Batteries. 2018 , 5, 1745-1763 | | 20 |
| 687 | Efficient unitary oxygen electrode for air-based flow batteries. 2018 , 47, 361-367 | | 28 |

| | | | |
|-----|---|------|-----|
| 686 | Single-Atom Au/NiFe Layered Double Hydroxide Electrocatalyst: Probing the Origin of Activity for Oxygen Evolution Reaction. <i>Journal of the American Chemical Society</i> , 2018 , 140, 3876-3879 | 16.4 | 560 |
| 685 | Ancient Chemistry "Pharaoh's Snakes" for Efficient Fe-/N-Doped Carbon Electrocatalysts. <i>ACS Applied Materials & Interfaces</i> , 2018 , 10, 10778-10785 | 9.5 | 52 |
| 684 | Freestanding Non-Precious Metal Electrocatalysts for Oxygen Evolution and Reduction Reactions. 2018 , 5, 1786-1804 | | 26 |
| 683 | Ultrahigh-Energy Density Lithium-Ion Cable Battery Based on the Carbon-Nanotube Woven Macrofilms. <i>Small</i> , 2018 , 14, e1800414 | 11 | 45 |
| 682 | Co O Nanosheets as Active Material for Hybrid Zn Batteries. <i>Small</i> , 2018 , 14, e1800225 | 11 | 103 |
| 681 | Synergistic electrocatalytic oxygen reduction reactions of Pd/B4C for ultra-stable Zn-air batteries. <i>Energy Storage Materials</i> , 2018 , 15, 226-233 | 19.4 | 29 |
| 680 | Apically Dominant Mechanism for Improving Catalytic Activities of N-Doped Carbon Nanotube Arrays in Rechargeable Zinc-Air Battery. <i>Advanced Energy Materials</i> , 2018 , 8, 1800480 | 21.8 | 112 |
| 679 | Universal molecular-confined synthesis of interconnected porous metal oxides-N-C frameworks for electrocatalytic water splitting. 2018 , 48, 600-606 | | 50 |
| 678 | Pyridinic-N-Dominated Doped Defective Graphene as a Superior Oxygen Electrocatalyst for Ultrahigh-Energy-Density Zn-Air Batteries. 2018 , 3, 1183-1191 | | 325 |
| 677 | Enhanced Photoelectrochemical Water Oxidation on BiVO4 with Mesoporous Cobalt Nitride Sheets as Oxygen-Evolution Cocatalysts. 2018 , 2018, 2557-2563 | | 9 |
| 676 | Enhancement of Oxygen Transfer by Design Nickel Foam Electrode for Zinc-Air Battery. <i>Journal of the Electrochemical Society</i> , 2018 , 165, A809-A818 | 3.9 | 30 |
| 675 | Anchoring perovskite LaMnO3 nanoparticles on biomass-derived N, P co-doped porous carbon for efficient oxygen reduction. <i>Electrochimica Acta</i> , 2018 , 274, 40-48 | 6.7 | 36 |
| 674 | Robust and Highly Active FeNi@NCNT Nanowire Arrays as Integrated Air Electrode for Flexible Solid-State Rechargeable Zn-Air Batteries. 2018 , 5, 1701448 | | 54 |
| 673 | Single-Site Active Iron-Based Bifunctional Oxygen Catalyst for a Compressible and Rechargeable Zinc-Air Battery. <i>ACS Nano</i> , 2018 , 12, 1949-1958 | 16.7 | 255 |
| 672 | Conceptual design of three-dimensional CoN/Ni3N-coupled nanograsses integrated on N-doped carbon to serve as efficient and robust water splitting electrocatalysts. 2018 , 6, 4466-4476 | | 107 |
| 671 | Interpenetrating Triphase Cobalt-Based Nanocomposites as Efficient Bifunctional Oxygen Electrocatalysts for Long-Lasting Rechargeable Zn-Air Batteries. <i>Advanced Energy Materials</i> , 2018 , 8, 1702900 | 21.8 | 183 |
| 670 | Atomic Layer Co O Nanosheets: The Key to Knittable Zn-Air Batteries. <i>Small</i> , 2018 , 14, e1702987 | 11 | 51 |
| 669 | Wet-chemistry topotactic synthesis of bimetallic iron-nickel sulfide nanoarrays: an advanced and versatile catalyst for energy efficient overall water and urea electrolysis. 2018 , 6, 4346-4353 | | 127 |

| | | | |
|-----|---|------|-----|
| 668 | Synergistic Improvement in Charge Overpotential of LiO ₂ Batteries by Oxidized Carbon Nanotubes and Cobalt Nitride Composites. 2018 , 122, 13416-13423 | | 8 |
| 667 | 3D Electronic Channels Wrapped Large-Sized Na V (PO) as Flexible Electrode for Sodium-Ion Batteries. <i>Small</i> , 2018 , 14, e1702864 | 11 | 83 |
| 666 | Advanced Architectures and Relatives of Air Electrodes in Zn-Air Batteries. <i>Advanced Science</i> , 2018 , 5, 1700691 | 13.6 | 430 |
| 665 | MetalOrganic Framework Derived Narrow Bandgap Cobalt Carbide Sensitized Titanium Dioxide Nanocage for Superior Photo-Electrochemical Water Oxidation Performance. <i>Advanced Functional Materials</i> , 2018 , 28, 1706154 | 15.6 | 56 |
| 664 | Adsorption-energy-based activity descriptors for electrocatalysts in energy storage applications. 2018 , 5, 327-341 | | 74 |
| 663 | Interface engineered in situ anchoring of CoS nanoparticles into a multiple doped carbon matrix: highly efficient zinc-air batteries. 2018 , 10, 2649-2657 | | 53 |
| 662 | Active Salt/Silica-Templated 2D Mesoporous FeCo-N -Carbon as Bifunctional Oxygen Electrodes for Zinc-Air Batteries. <i>Angewandte Chemie - International Edition</i> , 2018 , 57, 1856-1862 | 16.4 | 267 |
| 661 | Hierarchically Designed 3D Holey CN Aerogels as Bifunctional Oxygen Electrodes for Flexible and Rechargeable Zn-Air Batteries. <i>ACS Nano</i> , 2018 , 12, 596-608 | 16.7 | 125 |
| 660 | Foldable Electrode Architectures Based on Silver-Nanowire-Wound or Carbon-Nanotube-Webbed Micrometer-Scale Fibers of Polyethylene Terephthalate Mats for Flexible Lithium-Ion Batteries. <i>Advanced Materials</i> , 2018 , 30, 1705445 | 24 | 37 |
| 659 | Metallic Intermediate Phase Inducing Morphological Transformation in Thermal Nitridation: NiFeN-Based Three-Dimensional Hierarchical Electrocatalyst for Water Splitting. <i>ACS Applied Materials & Interfaces</i> , 2018 , 10, 3699-3706 | 9.5 | 69 |
| 658 | Alkaline-Acid Zn-H O Fuel Cell for the Simultaneous Generation of Hydrogen and Electricity. <i>Angewandte Chemie - International Edition</i> , 2018 , 57, 3910-3915 | 16.4 | 58 |
| 657 | Colloidal Cobalt Phosphide Nanocrystals as Trifunctional Electrocatalysts for Overall Water Splitting Powered by a Zinc-Air Battery. <i>Advanced Materials</i> , 2018 , 30, 1705796 | 24 | 190 |
| 656 | Active Salt/Silica-Templated 2D Mesoporous FeCo-Nx-Carbon as Bifunctional Oxygen Electrodes for ZincAir Batteries. <i>Angewandte Chemie</i> , 2018 , 130, 1874-1880 | 3.6 | 36 |
| 655 | Strategies for Enhancing the Electrocatalytic Activity of Mn/C Catalysts for the Oxygen Reduction Reaction. 2018 , 61, 1077-1100 | | 18 |
| 654 | Ternary doped porous carbon nanofibers with excellent ORR and OER performance for zincair batteries. 2018 , 6, 10918-10925 | | 150 |
| 653 | Confined Molybdenum Phosphide in P-Doped Porous Carbon as Efficient Electrocatalysts for Hydrogen Evolution. <i>ACS Applied Materials & Interfaces</i> , 2018 , 10, 17140-17146 | 9.5 | 99 |
| 652 | Pd nanoparticles supported on a covalent triazine-based framework material: an efficient and highly chemoselective catalyst for the reduction of nitroarenes. 2018 , 42, 9684-9689 | | 29 |
| 651 | Hierarchically Porous Co and N-Codoped Carbon Hollow Structure Derived from PS@ZIF-67 as an Electrocatalyst for Oxygen Reduction. 2018 , 3, 4831-4837 | | 13 |

| | | | |
|-----|---|------|-----|
| 650 | Functionalization of multi-walled carbon nanotubes with iron phthalocyanine via a liquid chemical reaction for oxygen reduction in alkaline media. 2018 , 389, 260-266 | | 40 |
| 649 | Soft, Highly Elastic, and Discharge-Current-Controllable Eutectic Gallium-Indium Liquid Metal-Air Battery Operated at Room Temperature. <i>Advanced Energy Materials</i> , 2018 , 8, 1703652 | 21.8 | 61 |
| 648 | Facile synthesis and excellent catalytic performance of nitrogen-doped porous carbons derived from banana peel towards oxygen reduction reaction. 2018 , 103, 63-69 | | 8 |
| 647 | Graphene-templated synthesis of sandwich-like porous carbon nanosheets for efficient oxygen reduction reaction in both alkaline and acidic media. 2018 , 61, 915-925 | | 14 |
| 646 | Incorporation of Fe ₃ C and Pyridinic N Active Sites with a Moderate N/C Ratio in Fe-N Mesoporous Carbon Materials for Enhanced Oxygen Reduction Reaction Activity. 2018 , 1, 1801-1810 | | 35 |
| 645 | Metallic CuCoS nanosheets of atomic thickness as efficient bifunctional electrocatalysts for portable, flexible Zn-air batteries. 2018 , 10, 6581-6588 | | 59 |
| 644 | Rapid low-temperature synthesis of perovskite/carbon nanocomposites as superior electrocatalysts for oxygen reduction in Zn-air batteries. <i>Nano Research</i> , 2018 , 11, 3282-3293 | 10 | 26 |
| 643 | CoFe ₂ O ₄ nanoparticles as efficient bifunctional catalysts applied in Zn-air battery. 2018 , 33, 590-600 | | 12 |
| 642 | Nitrogen-Enriched Carbon Nanofiber Aerogels Derived from Marine Chitin for Energy Storage and Environmental Remediation. 2018 , 6, 177-185 | | 62 |
| 641 | From 3D ZIF Nanocrystals to Co _N /C Nanorod Array Electrocatalysts for ORR, OER, and Zn-Air Batteries. <i>Advanced Functional Materials</i> , 2018 , 28, 1704638 | 15.6 | 541 |
| 640 | Brush-Like Cobalt Nitride Anchored Carbon Nanofiber Membrane: Current Collector-Catalyst Integrated Cathode for Long Cycle Li-O Batteries. <i>ACS Nano</i> , 2018 , 12, 128-139 | 16.7 | 175 |
| 639 | A Highly Efficient Oxygen Evolution Catalyst Consisting of Interconnected Nickel-Iron-Layered Double Hydroxide and Carbon Nanodomains. <i>Advanced Materials</i> , 2018 , 30, 1705106 | 24 | 153 |
| 638 | Rationally Designed Co ₃ O ₄ Nanowire Arrays on Ni Foam Derived From Metal Organic Framework as Reversible Oxygen Evolution Electrodes with Enhanced Performance for Zn-Air Batteries. 2018 , 6, 707-718 | | 72 |
| 637 | Conductive Porous Network of Metal-Organic Frameworks Derived Cobalt-Nitrogen-doped Carbon with the Assistance of Carbon Nanohorns as Electrocatalysts for Zinc-Air Batteries. 2018 , 10, 1336-1343 | | 12 |
| 636 | In situ encapsulation of core-shell-structured Co@Co ₃ O ₄ into nitrogen-doped carbon polyhedra as a bifunctional catalyst for rechargeable Zn-air batteries. 2018 , 6, 1443-1453 | | 129 |
| 635 | Three-dimensional nanotube-array anode enables a flexible Ni/Zn fibrous battery to ultrafast charge and discharge in seconds. <i>Energy Storage Materials</i> , 2018 , 12, 232-240 | 19.4 | 49 |
| 634 | Growth and Characterization of 3D Flower-Like NiS on Carbon Cloth: A Dexterous and Flexible Multifunctional Electrode for Supercapattery and Water-Splitting Applications. 2018 , 5, 1701056 | | 37 |
| 633 | Nanomaterials derived from metal-organic frameworks. 2018 , 3, | | 689 |

| | | | |
|-----|--|------|-----|
| 632 | Innovation and challenges in materials design for flexible rechargeable batteries: from 1D to 3D. 2018 , 6, 735-753 | | 82 |
| 631 | Microwave-assisted synthesis of the cobalt-iron phosphates nanosheets as an efficient electrocatalyst for water oxidation. <i>Electrochimica Acta</i> , 2018 , 260, 420-429 | 6.7 | 27 |
| 630 | Electroless deposition of Co(Mn)/Pd-decorator into Y2O3-stabilized ZrO2 scaffold as cathodes for solid oxide fuel cells. <i>International Journal of Hydrogen Energy</i> , 2018 , 43, 53-63 | 6.7 | 3 |
| 629 | Bifunctional electrocatalysts for Zn-air batteries. 2018 , 2, 39-67 | | 123 |
| 628 | Short Hydrogen Bonds on Reconstructed Nanocrystal Surface Enhance Oxygen Evolution Activity. 2018 , 8, 466-473 | | 16 |
| 627 | Nest-like assembly of the doped single-walled carbon nanotubes with unique mesopores as ultrastable catalysts for high power density Zn-air battery. 2018 , 128, 46-53 | | 14 |
| 626 | Ultrathin and Porous Carbon Nanosheets Supporting Bimetallic Nanoparticles for High-Performance Electrocatalysis. 2018 , 10, 1241-1247 | | 3 |
| 625 | A photo-responsive bifunctional electrocatalyst for oxygen reduction and evolution reactions. 2018 , 43, 130-137 | | 74 |
| 624 | Alkaline Acid Zn-H ₂ O Fuel Cell for the Simultaneous Generation of Hydrogen and Electricity. <i>Angewandte Chemie</i> , 2018 , 130, 3974-3979 | 3.6 | 38 |
| 623 | CoO-modified Co ₄ N as a heterostructured electrocatalyst for highly efficient overall water splitting in neutral media. 2018 , 6, 24767-24772 | | 69 |
| 622 | Cobalt and nitrogen co-doped hierarchically porous carbon nanostructure: a bifunctional electrocatalyst for oxygen reduction and evolution reactions. 2018 , 6, 24078-24085 | | 46 |
| 621 | MicroRNA-154 functions as a tumor suppressor in bladder cancer by directly targeting ATG7. 2019 , 41, 819-828 | | 17 |
| 620 | . 2018 , | | 7 |
| 619 | An Aluminum/Graphite Battery with Ultra-High Rate Capability. 2018 , 2, 83 | | 23 |
| 618 | Fe-Ni-Mo Nitride Porous Nanotubes for Full Water Splitting and Zn-Air Batteries. <i>Advanced Energy Materials</i> , 2018 , 8, 1802327 | 21.8 | 157 |
| 617 | Facile Preparation of Amorphous Fe-Co-Ni Hydroxide Arrays: A Highly Efficient Integrated Electrode for Water Oxidation. 2018 , 57, 15610-15617 | | 14 |
| 616 | Micron-Sized Nanoporous Antimony with Tunable Porosity for High-Performance Potassium-Ion Batteries. <i>ACS Nano</i> , 2018 , 12, 12932-12940 | 16.7 | 167 |
| 615 | Biosynthesis of flower-shaped Au nanoclusters with EGCG and their application for drug delivery. 2018 , 16, 90 | | 15 |

| | | | |
|-----|--|------|-----|
| 614 | Heterostructure-Promoted Oxygen Electrocatalysis Enables Rechargeable Zinc-Air Battery with Neutral Aqueous Electrolyte. <i>Journal of the American Chemical Society</i> , 2018 , 140, 17624-17631 | 16.4 | 176 |
| 613 | A Stable Bifunctional Catalyst for Rechargeable Zinc-Air Batteries: Iron-Cobalt Nanoparticles Embedded in a Nitrogen-Doped 3D Carbon Matrix. <i>Angewandte Chemie - International Edition</i> , 2018 , 57, 16166-16170 | 16.4 | 243 |
| 612 | Solid-State Rechargeable Zn//NiCo and Zn/Air Batteries with Ultralong Lifetime and High Capacity: The Role of a Sodium Polyacrylate Hydrogel Electrolyte. <i>Advanced Energy Materials</i> , 2018 , 8, 1802288 | 21.8 | 146 |
| 611 | L-Cysteine assisted synthesis of Zn _{0.5} Cd _{0.5} S solid solution with different morphology, crystal structure and performance for H ₂ evolution. <i>International Journal of Hydrogen Energy</i> , 2018 , 43, 18220-18231 | 6.7 | 17 |
| 610 | Nickel Nanoparticles Encapsulated in Nitrogen-Doped Carbon Nanotubes as Excellent Bifunctional Oxygen Electrode for Fuel Cell and Metal/Air Battery. 2018 , 6, 15108-15118 | | 35 |
| 609 | Multiscale Structural Engineering of Ni-Doped CoO Nanosheets for Zinc-Air Batteries with High Power Density. <i>Advanced Materials</i> , 2018 , 30, e1804653 | 24 | 93 |
| 608 | Electrochemical Energy Conversion and Storage with Zeolitic Imidazolate Framework Derived Materials: A Perspective. 2018 , 5, 3571-3588 | | 31 |
| 607 | Integration of Zn-Ag and Zn-Air Batteries: A Hybrid Battery with the Advantages of Both. <i>ACS Applied Materials & Interfaces</i> , 2018 , 10, 36873-36881 | 9.5 | 42 |
| 606 | Two-step oxygen reduction on spinel NiFe ₂ O ₄ catalyst: Rechargeable, aqueous solution- and gel-based, Zn-air batteries. <i>Electrochimica Acta</i> , 2018 , 292, 268-275 | 6.7 | 51 |
| 605 | Design Strategy for Zinc Anodes with Enhanced Utilization and Retention: Electrodeposited Zinc Oxide on Carbon Mesh Protected by Ionomeric Layers. 2018 , | | 12 |
| 604 | Sulfuration of an Fe-N-C Catalyst Containing Fe C/Fe Species to Enhance the Catalysis of Oxygen Reduction in Acidic Media and for Use in Flexible Zn-Air Batteries. <i>Advanced Materials</i> , 2018 , 30, e1804504 | 24 | 179 |
| 603 | A Stable Bifunctional Catalyst for Rechargeable Zinc/Air Batteries: Iron/Cobalt Nanoparticles Embedded in a Nitrogen-Doped 3D Carbon Matrix. <i>Angewandte Chemie</i> , 2018 , 130, 16398-16402 | 3.6 | 46 |
| 602 | Zn/Air Batteries. 2018 , 265-291 | | 1 |
| 601 | Flexible Metal/Air Batteries. 2018 , 367-396 | | 2 |
| 600 | Synergistic stabilizing lithium sulfur battery via nanocoating polypyrrole on cobalt sulfide nanobox. 2018 , 405, 51-60 | | 35 |
| 599 | Trimetallic Sulfide Mesoporous Nanospheres as Superior Electrocatalysts for Rechargeable Zn/Air Batteries. <i>Advanced Energy Materials</i> , 2018 , 8, 1801839 | 21.8 | 69 |
| 598 | Flexible Lithium-Air Battery in Ambient Air with an In Situ Formed Gel Electrolyte. <i>Angewandte Chemie - International Edition</i> , 2018 , 57, 16131-16135 | 16.4 | 64 |
| 597 | In Situ Activating Strategy to Significantly Boost Oxygen Electrocatalysis of Commercial Carbon Cloth for Flexible and Rechargeable Zn-Air Batteries. <i>Advanced Science</i> , 2018 , 5, 1800760 | 13.6 | 64 |

| | | | |
|-----|---|------|-----|
| 596 | Flexible Lithium-Air Battery in Ambient Air with an In Situ Formed Gel Electrolyte. <i>Angewandte Chemie</i> , 2018 , 130, 16363-16367 | 3.6 | 5 |
| 595 | All-in-One Bifunctional Oxygen Electrode Films for Flexible Zn-Air Batteries. <i>Small</i> , 2018 , 14, e1803409 | 11 | 46 |
| 594 | Coupling Bimetallic Oxides/Alloys and N-Doped Carbon Nanotubes as Tri-Functional Catalysts for Overall Water Splitting and Zinc-Air Batteries. <i>ACS Applied Materials & Interfaces</i> , 2018 , 10, 39828-39838 | 9.5 | 40 |
| 593 | Ultra-high surface area graphitic Fe-N-C nanospheres with single-atom iron sites as highly efficient non-precious metal bifunctional catalysts towards oxygen redox reactions. 2018 , 368, 279-290 | | 67 |
| 592 | Fe/Co Double Hydroxide/Oxide Nanoparticles on N-Doped CNTs as Highly Efficient Electrocatalyst for Rechargeable Liquid and Quasi-Solid-State Zinc-Air Batteries. <i>Advanced Energy Materials</i> , 2018 , 8, 1801836 | 21.8 | 70 |
| 591 | Growth of Al and Co co-doped NiO nanosheets on carbon cloth as the air electrode for Zn-air batteries with high cycling stability. <i>Electrochimica Acta</i> , 2018 , 290, 21-29 | 6.7 | 20 |
| 590 | Nickel-Based Bicarbonates as Bifunctional Catalysts for Oxygen Evolution and Reduction Reaction in Alkaline Media. 2018 , 24, 17665-17671 | | 11 |
| 589 | A Tailored Bifunctional Electrocatalyst: Boosting Oxygen Reduction/Evolution Catalysis via Electron Transfer Between N-Doped Graphene and Perovskite Oxides. <i>Small</i> , 2018 , 14, e1802767 | 11 | 61 |
| 588 | Emerging Materials in Heterogeneous Electrocatalysis Involving Oxygen for Energy Harvesting. <i>ACS Applied Materials & Interfaces</i> , 2018 , 10, 33737-33767 | 9.5 | 34 |
| 587 | Electrosynthesis of Well-Defined Metal-Organic Framework Films and the Carbon Nanotube Network Derived from Them toward Electrocatalytic Applications. <i>ACS Applied Materials & Interfaces</i> , 2018 , 10, 34494-34501 | 9.5 | 31 |
| 586 | Exploring Indium-Based Ternary Thiospinel as Conceivable High-Potential Air-Cathode for Rechargeable Zn-Air Batteries. <i>Advanced Energy Materials</i> , 2018 , 8, 1802263 | 21.8 | 164 |
| 585 | Coordination-Assisted Polymerization of Mesoporous Cobalt Sulfide/Heteroatom (N,S)-Doped Double-Layered Carbon Tubes as an Efficient Bifunctional Oxygen Electrocatalyst. <i>ACS Applied Materials & Interfaces</i> , 2018 , 10, 33124-33134 | 9.5 | 50 |
| 584 | Modulating Electronic Structure of Metal-Organic Framework for Efficient Electrocatalytic Oxygen Evolution. <i>Advanced Energy Materials</i> , 2018 , 8, 1801564 | 21.8 | 178 |
| 583 | Recent Advances in Materials and Design of Electrochemically Rechargeable Zinc-Air Batteries. <i>Small</i> , 2018 , 14, e1801929 | 11 | 120 |
| 582 | Solid solution nitride/carbon nanotube hybrids enhance electrocatalysis of oxygen in zinc-air batteries. <i>Energy Storage Materials</i> , 2018 , 15, 380-387 | 19.4 | 20 |
| 581 | M (Co, Ni), N and S tridoped carbon nanoplates as multifunctional catalysts for rechargeable Zn-air batteries and water electrolyzers. <i>International Journal of Hydrogen Energy</i> , 2018 , 43, 11012-11021 | 6.7 | 16 |
| 580 | Nitrogen-Doped CoP Electrocatalysts for Coupled Hydrogen Evolution and Sulfur Generation with Low Energy Consumption. <i>Advanced Materials</i> , 2018 , 30, e1800140 | 24 | 224 |
| 579 | Use of plant based analytes for the synthesis of NiO nanoparticles in catalyzing electrochemical H ₂ O ₂ production. <i>Journal of Electroanalytical Chemistry</i> , 2018 , 823, 9-19 | 4.1 | 9 |

| | | | |
|-----|---|------|-----|
| 578 | Metal-Organic Framework Hybrid-Assisted Formation of Co O /Co-Fe Oxide Double-Shelled Nanoboxes for Enhanced Oxygen Evolution. <i>Advanced Materials</i> , 2018 , 30, e1801211 | 24 | 287 |
| 577 | A general synthetic approach for hexagonal phase tungsten nitride composites and their application in the hydrogen evolution reaction. 2018 , 6, 10967-10975 | | 44 |
| 576 | Towards zinc-oxygen batteries with enhanced cycling stability: The benefit of anion-exchange ionomer for zinc sponge anodes. 2018 , 395, 195-204 | | 48 |
| 575 | Ultrafine Pt Nanoparticle-Decorated Pyrite-Type CoS ₂ Nanosheet Arrays Coated on Carbon Cloth as a Bifunctional Electrode for Overall Water Splitting. <i>Advanced Energy Materials</i> , 2018 , 8, 1800935 | 21.8 | 217 |
| 574 | Electrochemical energy storage devices for wearable technology: a rationale for materials selection and cell design. 2018 , 47, 5919-5945 | | 215 |
| 573 | Interface Designing over WS ₂ /W ₂ C for Enhanced Hydrogen Evolution Catalysis. 2018 , 1, 3377-3384 | | 34 |
| 572 | Organophosphoric acid-derived CoP quantum dots@S,N-codoped graphite carbon as a trifunctional electrocatalyst for overall water splitting and Zn-air batteries. 2018 , 10, 14613-14626 | | 55 |
| 571 | NiFe LDH nanodots anchored on 3D macro/mesoporous carbon as a high-performance ORR/OER bifunctional electrocatalyst. 2018 , 6, 14299-14306 | | 96 |
| 570 | Fast fabrication of ultrathin CoMn LDH nanoarray as flexible electrode for water oxidation. <i>Electrochimica Acta</i> , 2018 , 283, 755-763 | 6.7 | 30 |
| 569 | Electrochemical hydrogen storage in a nitrogen-doped uniformed microporous carbon. <i>International Journal of Hydrogen Energy</i> , 2018 , 43, 14096-14102 | 6.7 | 9 |
| 568 | Lithiophilic Co/Co ₄ N nanoparticles embedded in hollow N-doped carbon nanocubes stabilizing lithium metal anodes for Li-air batteries. 2018 , 6, 22096-22105 | | 36 |
| 567 | In situ integration of ultrathin PtRuCu alloy overlayer on copper foam as an advanced free-standing bifunctional cathode for rechargeable Zn-air batteries. <i>Electrochimica Acta</i> , 2018 , 283, 54-62 | 6.7 | 12 |
| 566 | Facile synthesis of silver nanowire-zeolitic imidazolate framework 67 composites as high-performance bifunctional oxygen catalysts. 2018 , 10, 15755-15762 | | 32 |
| 565 | One-Pot Synthesis of Co O /Ag Nanoparticles Supported on N-Doped Graphene as Efficient Bifunctional Oxygen Catalysts for Flexible Rechargeable Zinc-Air Batteries. 2018 , 24, 14816-14823 | | 33 |
| 564 | Efficiently electrocatalytic oxidation of benzyl alcohol for energy- saved zinc-air battery using a multifunctional nickel-cobalt alloy electrocatalyst. 2018 , 532, 37-46 | | 9 |
| 563 | Atomic Fe-N Coupled Open-Mesoporous Carbon Nanofibers for Efficient and Bioadaptable Oxygen Electrode in Mg-Air Batteries. <i>Advanced Materials</i> , 2018 , 30, e1802669 | 24 | 95 |
| 562 | Influence of Surface Charges/Chemistry on the Catalysis of Perovskite Complexes. <i>ACS Applied Materials & Interfaces</i> , 2018 , 10, 28502-28508 | 9.5 | 4 |
| 561 | Nonprecious Nanoalloys Embedded in N-Enriched Mesoporous Carbons Derived from a Dual-MOF as Highly Active Catalyst towards Oxygen Reduction Reaction. 2018 , 3, 7913-7920 | | 7 |

| | | | |
|-----|--|------|-----|
| 560 | Recent Advances toward the Rational Design of Efficient Bifunctional Air Electrodes for Rechargeable Zn-Air Batteries. <i>Small</i> , 2018 , 14, e1703843 | 11 | 115 |
| 559 | Hierarchical Fe ₂ O ₃ @CNF fabric decorated with MoS ₂ nanosheets as a robust anode for flexible lithium-ion batteries exhibiting ultrahigh areal capacity. 2018 , 6, 16890-16899 | | 41 |
| 558 | New gallium chalcogenides/arsenene van der Waals heterostructures promising for photocatalytic water splitting. <i>International Journal of Hydrogen Energy</i> , 2018 , 43, 15995-16004 | 6.7 | 34 |
| 557 | Facile preparation of ultra-low Pt loading graphene-immobilized electrode for methanol oxidation reaction. <i>International Journal of Hydrogen Energy</i> , 2018 , 43, 16005-16014 | 6.7 | 11 |
| 556 | Flexible Waterproof Rechargeable Hybrid Zinc Batteries Initiated by Multifunctional Oxygen Vacancies-Rich Cobalt Oxide. <i>ACS Nano</i> , 2018 , 12, 8597-8605 | 16.7 | 184 |
| 555 | Graphite-Wrapped Fe Core-Shell Nanoparticles Anchored on Graphene as pH-Universal Electrocatalyst for Oxygen Reduction Reaction. <i>ACS Applied Materials & Interfaces</i> , 2018 , 10, 28509-28516 | 9.5 | 48 |
| 554 | Metallic iron doped vitamin B12/C as efficient nonprecious metal catalysts for oxygen reduction reaction. <i>International Journal of Hydrogen Energy</i> , 2018 , 43, 16230-16239 | 6.7 | 13 |
| 553 | Recent Development of Zeolitic Imidazolate Frameworks (ZIFs) Derived Porous Carbon Based Materials as Electrocatalysts. <i>Advanced Energy Materials</i> , 2018 , 8, 1801257 | 21.8 | 157 |
| 552 | The morphology-dependent electrocatalytic activities of spinel-cobalt oxide nanomaterials for direct hydrazine fuel cell application. 2018 , 42, 13087-13095 | | 7 |
| 551 | Facile Chemical Solution Transportation for Direct Recycling of Iron Oxide Rust Waste to Hematite Films. 2018 , 6, 12232-12240 | | 6 |
| 550 | A porphyrin covalent organic framework cathode for flexible Zn-air batteries. 2018 , 11, 1723-1729 | | 219 |
| 549 | From Metal-Organic Frameworks to Single-Atom Fe Implanted N-doped Porous Carbons: Efficient Oxygen Reduction in Both Alkaline and Acidic Media. <i>Angewandte Chemie - International Edition</i> , 2018 , 57, 8525-8529 | 16.4 | 462 |
| 548 | From Metal-Organic Frameworks to Single-Atom Fe Implanted N-doped Porous Carbons: Efficient Oxygen Reduction in Both Alkaline and Acidic Media. <i>Angewandte Chemie</i> , 2018 , 130, 8661-8665 | 3.6 | 79 |
| 547 | Formation of a Tubular Assembly by Ultrathin Ti _{0.8} Co _{0.2} N Nanosheets as Efficient Oxygen Reduction Electrocatalysts for Hydrogen/Metal Air Fuel Cells. 2018 , 8, 8970-8975 | | 115 |
| 546 | Effect of hydrogen additive on methane decomposition to hydrogen and carbon over activated carbon catalyst. <i>International Journal of Hydrogen Energy</i> , 2018 , 43, 17611-17619 | 6.7 | 23 |
| 545 | A rationally designed Fe-tetrapyrrophenazine complex: a promising precursor to a single-atom Fe catalyst for an efficient oxygen reduction reaction in high-power Zn-air cells. 2018 , 10, 16145-16152 | | 32 |
| 544 | Binder-Free Co ₄ N Nanoarray on Carbon Cloth as Flexible High-Performance Anode for Lithium-Ion Batteries. 2018 , 1, 4432-4439 | | 11 |
| 543 | Hierarchically Porous Mn ₂ C (M = Co and Fe) Single-Atom Electrocatalysts with Robust MN _x Active Moieties Enable Enhanced ORR Performance. <i>Advanced Energy Materials</i> , 2018 , 8, 1801956 | 21.8 | 351 |

| | | | |
|-----|---|------|-----|
| 542 | A Review of Precious-Metal-Free Bifunctional Oxygen Electrocatalysts: Rational Design and Applications in Zn-Air Batteries. <i>Advanced Functional Materials</i> , 2018 , 28, 1803329 | 15.6 | 368 |
| 541 | Influence of Na-substitution on the structure and electrochemical properties of layered oxides K _{0.67} Ni _{0.17} Co _{0.17} Mn _{0.66} O ₂ cathode materials. <i>Electrochimica Acta</i> , 2018 , 286, 114-122 | 6.7 | 24 |
| 540 | Freestanding Pt nanosheets with high porosity and improved electrocatalytic performance toward the oxygen reduction reaction. 2018 , 3, 310-317 | | 6 |
| 539 | Surface Adsorption of Polyethylene Glycol to Suppress Dendrite Formation on Zinc Anodes in Rechargeable Aqueous Batteries. 2018 , 5, 2409-2418 | | 113 |
| 538 | Single-atom cobalt electrocatalysts for foldable solid-state Zn-air battery. 2018 , 50, 691-698 | | 213 |
| 537 | Flexible/Rechargeable Zn-Air Batteries Based on Multifunctional Heteronanomat Architecture. <i>ACS Applied Materials & Interfaces</i> , 2018 , 10, 22210-22217 | 9.5 | 30 |
| 536 | Doping of Self-Standing CNT Fibers: Promising Flexible Air-Cathodes for High-Energy-Density Structural Zn-Air Batteries. 2018 , 1, 2434-2439 | | 21 |
| 535 | Single-Atom Catalysts for Electrochemical Water Splitting. 2018 , 3, 1713-1721 | | 198 |
| 534 | Superior stability of a bifunctional oxygen electrode for primary, rechargeable and flexible Zn-air batteries. 2018 , 10, 13626-13637 | | 25 |
| 533 | In situ anchoring of metal nanoparticles in the N-doped carbon framework derived from conjugated microporous polymers towards an efficient oxygen reduction reaction. 2018 , 8, 3572-3579 | | 24 |
| 532 | Decorating Co/CoN _x nanoparticles in nitrogen-doped carbon nanoarrays for flexible and rechargeable zinc-air batteries. <i>Energy Storage Materials</i> , 2019 , 16, 243-250 | 19.4 | 157 |
| 531 | Secondary-Component Incorporated Hollow MOFs and Derivatives for Catalytic and Energy-Related Applications. <i>Advanced Materials</i> , 2019 , 31, e1800743 | 24 | 88 |
| 530 | Hollow cobalt oxide nanoparticles embedded in nitrogen-doped carbon nanosheets as an efficient bifunctional catalyst for Zn-Air battery. 2019 , 33, 59-66 | | 48 |
| 529 | Preparation of stable composite porous nanofibers carried SnO _x -ZnO as a flexible supercapacitor material with excellent electrochemical and cycling performance. <i>Journal of Alloys and Compounds</i> , 2019 , 807, 151652 | 5.7 | 15 |
| 528 | Co/Co ₉ S ₈ nanoparticles coupled with N,S-doped graphene-based mixed-dimensional heterostructures as bifunctional electrocatalysts for the overall oxygen electrode. 2019 , 6, 2558-2565 | | 9 |
| 527 | Ceria-reduced graphene oxide nanocomposite as an efficient electrocatalyst towards artificial N conversion to NH under ambient conditions. 2019 , 55, 10717-10720 | | 24 |
| 526 | High-performing rechargeable/flexible zinc-air batteries by coordinated hierarchical Bi-metallic electrocatalyst and heterostructure anion exchange membrane. 2019 , 65, 104021 | | 42 |
| 525 | A KCl-assisted pyrolysis strategy to fabricate nitrogen-doped carbon nanotube hollow polyhedra for efficient bifunctional oxygen electrocatalysts. 2019 , 7, 20310-20316 | | 23 |

| | | | |
|-----|--|------|----|
| 524 | Trimetallic palladium-copper-cobalt alloy wavy nanowires improve ethanol electrooxidation in alkaline medium. 2019 , 11, 19448-19454 | | 21 |
| 523 | Carbon nanomaterials for metal-air batteries. 2019 , 311-333 | | |
| 522 | FeCo _x alloy nanoparticles encapsulated in three-dimensionally N-doped porous carbon/multiwalled carbon nanotubes composites as bifunctional electrocatalyst for zinc-air battery. 2019 , 438, 227019 | | 16 |
| 521 | Hierarchical Cobalt-Doped Molybdenum-Nickel Nitride Nanowires as Multifunctional Electrocatalysts. <i>ACS Applied Materials & Interfaces</i> , 2019 , 11, 27751-27759 | 9.5 | 39 |
| 520 | Long-Shelf-Life Polymer Electrolyte Based on Tetraethylammonium Hydroxide for Flexible Zinc-Air Batteries. <i>ACS Applied Materials & Interfaces</i> , 2019 , 11, 28909-28917 | 9.5 | 47 |
| 519 | Engineering Interface and Oxygen Vacancies of NiCoSe to Boost Oxygen Catalysis for Flexible Zn-Air Batteries. <i>ACS Applied Materials & Interfaces</i> , 2019 , 11, 27964-27972 | 9.5 | 17 |
| 518 | Timely-activated 316L stainless steel: A low cost, durable and active electrode for oxygen evolution reaction in concentrated alkaline environments. 2019 , 258, 117963 | | 20 |
| 517 | Ru-Coated metal-organic framework-derived Co-based particles embedded in porous N-doped carbon nanocubes as a catalytic cathode for a Li-O battery. 2019 , 55, 10092-10095 | | 13 |
| 516 | Controlled synthesis of Ni ₃ C/nitrogen-doped carbon nanoflakes for efficient oxygen evolution. <i>Electrochimica Acta</i> , 2019 , 320, 134631 | 6.7 | 16 |
| 515 | Planar all-solid-state rechargeable Zn-air batteries for compact wearable energy storage. 2019 , 7, 17581-17593 | | 77 |
| 514 | 2D Metal-Organic Framework Derived CuCo Alloy Nanoparticles Encapsulated by Nitrogen-Doped Carbonaceous Nanoleaves for Efficient Bifunctional Oxygen Electrocatalyst and Zinc-Air Batteries. 2019 , 25, 12780-12788 | | 27 |
| 513 | CuCoS Nanosheets@N-Doped Carbon Nanofibers by Sulfurization at Room Temperature as Bifunctional Electrocatalysts in Flexible Quasi-Solid-State Zn-Air Batteries. <i>Advanced Science</i> , 2019 , 6, 1900628 | 13.6 | 81 |
| 512 | Toward Flexible and Wearable Zn-Air Batteries from Cotton Textile Waste. 2019 , 4, 19341-19349 | | 10 |
| 511 | Single-Atomic-Co Electrocatalysts with Self-Supported Architecture toward Oxygen-Involved Reaction. <i>Advanced Functional Materials</i> , 2019 , 29, 1906477 | 15.6 | 53 |
| 510 | Molecular Engineering of a 3D Self-Supported Electrode for Oxygen Electrocatalysis in Neutral Media. <i>Angewandte Chemie - International Edition</i> , 2019 , 58, 18883-18887 | 16.4 | 91 |
| 509 | Reduced graphene oxide-based materials for electrochemical energy conversion reactions. 2019 , 1, 85-108 | | 63 |
| 508 | Exploring the Influence of Halogen Coordination Effect of Stable Bimetallic MOFs on Oxygen Evolution Reaction. 2019 , 25, 15830-15836 | | 19 |
| 507 | A MoS ₂ -Co ₉ S ₈ -NC heterostructure as an efficient bifunctional electrocatalyst towards hydrogen and oxygen evolution reaction. <i>Electrochimica Acta</i> , 2019 , 327, 134942 | 6.7 | 22 |

| | | | |
|-----|---|-----|-----|
| 506 | Cation-Substitution-Tuned Oxygen Electrocatalyst of Spinel Cobaltite MCo_2O_4 (M = Fe, Co, and Ni) Hexagonal Nanoplates for Rechargeable Zn-Air Batteries. <i>Journal of the Electrochemical Society</i> , 2019 , 166, A3448-A3455 | 3.9 | 5 |
| 505 | Molecular Engineering of a 3D Self-Supported Electrode for Oxygen Electrocatalysis in Neutral Media. <i>Angewandte Chemie</i> , 2019 , 131, 19059-19063 | 3.6 | 18 |
| 504 | B,N-Doped Defective Carbon Entangled Fe_3C Nanoparticles as the Superior Oxygen Reduction Electrocatalyst for Zn-Air Batteries. 2019 , 7, 19104-19112 | | 28 |
| 503 | Porous Fe, Co, and N-co-doped carbon nanofibers as high-efficiency oxygen reduction catalysts. 2019 , 21, 1 | | 10 |
| 502 | Direct Conversion of Biomass into Compact Air Electrode with Atomically Dispersed Oxygen and Nitrogen Coordinated Copper Species for Flexible Zinc-Air Batteries. 2019 , 2, 8659-8666 | | 10 |
| 501 | Cobalt-Embedded N-Doped Carbon Arrays Derived In Situ as Trifunctional Catalyst Toward Hydrogen and Oxygen Evolution, and Oxygen Reduction. 2019 , 6, 4522-4532 | | 13 |
| 500 | Effect of Zn on Size Control and Oxygen Reduction Reaction Activity of Co Nanoparticles Supported on N-Doped Carbon Nanotubes. <i>Chemistry of Materials</i> , 2019 , 31, 8864-8874 | 9.6 | 21 |
| 499 | Highly Efficient Thin Zinc Air Batteries. <i>Journal of the Electrochemical Society</i> , 2019 , 166, A2879-A2886 | 3.9 | 7 |
| 498 | Three-dimensional interlinked Co_3O_4 -CNTs hybrids as novel oxygen electrocatalyst. 2019 , 497, 143818 | | 23 |
| 497 | $UiO66-NH_2$ as self-sacrificing template for Fe/N-doped hierarchically porous carbon with high electrochemical performance for oxygen reduction in microbial fuel cells. <i>Electrochimica Acta</i> , 2019 , 323, 134777 | 6.7 | 15 |
| 496 | Controllable synthesis of CoN_3 catalysts derived from Co/Zn-ZIF-67 for electrocatalytic oxygen reduction in acidic electrolytes. 2019 , 7, 21884-21891 | | 40 |
| 495 | N-doped carbon sheets loaded with well-dispersed Ni_3Fe nanoparticles as bifunctional oxygen electrode for rechargeable Zn-air battery. <i>Journal of Electroanalytical Chemistry</i> , 2019 , 851, 113418 | 4.1 | 8 |
| 494 | Cobalt Phosphides Nanocrystals Encapsulated by P-Doped Carbon and Married with P-Doped Graphene for Overall Water Splitting. <i>Small</i> , 2019 , 15, e1804546 | 11 | 66 |
| 493 | Mesoporous $MnCo_2O_4$ spinel oxide for a highly active and stable air electrode for Zn-air rechargeable battery. <i>Electrochimica Acta</i> , 2019 , 300, 455-460 | 6.7 | 16 |
| 492 | Highly Flexible Hydrogen Boride Monolayers as Potassium-Ion Battery Anodes for Wearable Electronics. <i>ACS Applied Materials & Interfaces</i> , 2019 , 11, 8115-8125 | 9.5 | 38 |
| 491 | Unveiling dual-linkage 3D hexaminobenzene metal-organic frameworks towards long-lasting advanced reversible Zn-air batteries. 2019 , 12, 727-738 | | 180 |
| 490 | Metal-organic framework-derived Nickel Cobalt oxysulfide nanocages as trifunctional electrocatalysts for high efficiency power to hydrogen. 2019 , 58, 680-686 | | 50 |
| 489 | Trifunctional Self-Supporting Cobalt-Embedded Carbon Nanotube Films for ORR, OER, and HER Triggered by Solid Diffusion from Bulk Metal. <i>Advanced Materials</i> , 2019 , 31, e1808043 | 24 | 186 |

| | | | |
|-----|---|------|-----|
| 488 | Flexible, Porous, and Metal-Heteroatom-Doped Carbon Nanofibers as Efficient ORR Electrocatalysts for Zn-Air Battery. 2019 , 11, 8 | | 59 |
| 487 | Bifunctional oxygen electrodes of homogeneous Co ₄ N nanocrystals@N-doped carbon hybrids for rechargeable Zn-air batteries. 2019 , 151, 10-17 | | 39 |
| 486 | Advanced rechargeable zinc-based batteries: Recent progress and future perspectives. 2019 , 62, 550-587 | | 471 |
| 485 | Low-Coordinated Gold Atoms Boost Electrochemical Nitrogen Reduction Reaction under Ambient Conditions. 2019 , 7, 10214-10220 | | 25 |
| 484 | An easy synthesis of Ni-Co doped hollow C-N tubular nanocomposites as excellent cathodic catalysts of alkaline and neutral zinc-air batteries. 2019 , 62, 1251-1264 | | 23 |
| 483 | The Role of Supported Atomically Distributed Metal Species in Electrochemistry and How to Create Them. 2019 , 6, 3860-3877 | | 9 |
| 482 | Recent Advances in Carbon-Based Bifunctional Oxygen Catalysts for Zinc-Air Batteries. 2019 , 2, 743-765 | | 74 |
| 481 | In-situ enriching active sites on co-doped Fe-Co ₄ N@N-C nanosheet array as air cathode for flexible rechargeable Zn-air batteries. 2019 , 256, 117893 | | 104 |
| 480 | Paper-based porous graphene/single-walled carbon nanotubes supported Pt nanoparticles as freestanding catalyst for electro-oxidation of methanol. 2019 , 257, 117886 | | 24 |
| 479 | Confined Pyrolysis of ZIF-8 Polyhedrons Wrapped with Graphene Oxide Nanosheets to Prepare 3D Porous Carbon Heterostructures. <i>Small Methods</i> , 2019 , 3, 1900277 | 12.8 | 21 |
| 478 | Tactile UV- and Solar-Light Multi-Sensing Rechargeable Batteries with Smart Self-Conditioned Charge and Discharge. <i>Angewandte Chemie</i> , 2019 , 131, 9349-9354 | 3.6 | 4 |
| 477 | Efficient oxygen reduction on sandwich-like metal@N-C composites with ultrafine Fe nanoparticles embedded in N-doped carbon nanotubes grafted on graphene sheets. 2019 , 11, 12610-12618 | | 16 |
| 476 | Anchoring CuO Nanoparticles On C, N-Codoped G-C ₃ N ₄ Nanosheets from Melamine-Entrapped MOF Gel for High-Efficiency Oxygen Evolution. 2019 , 5, 1170-1175 | | 5 |
| 475 | Tin-embedded carbon nanofibers as flexible and freestanding electrode materials for high-performance supercapacitors. 2019 , 25, 4875-4890 | | 5 |
| 474 | The integration of MoC-embedded nitrogen-doped carbon with Co encapsulated in nitrogen-doped graphene layers derived from metal-organic-frameworks as a multi-functional electrocatalyst. 2019 , 11, 12563-12572 | | 26 |
| 473 | Tailoring Electronic Structure of Atomically Dispersed Metal@N-C Active Sites for Highly Efficient Oxygen Reduction Catalysis. 2019 , 1, 139-146 | | 19 |
| 472 | Robust Design of Dual-Phasic Carbon Cathode for Lithium-Oxygen Batteries. <i>Advanced Functional Materials</i> , 2019 , 29, 1902915 | 15.6 | 24 |
| 471 | Co Nanoislands Rooted on Co-N-C Nanosheets as Efficient Oxygen Electrocatalyst for Zn-Air Batteries. <i>Advanced Materials</i> , 2019 , 31, e1901666 | 24 | 232 |

| | | | |
|-----|---|------|-----|
| 470 | Thermally Robust Porous Bimetallic (Ni Pt) Alloy Mesocrystals within Carbon Framework: High-Performance Catalysts for Oxygen Reduction and Hydrogenation Reactions. <i>ACS Applied Materials & Interfaces</i> , 2019 , 11, 21435-21444 | 9.5 | 9 |
| 469 | Tactile UV- and Solar-Light Multi-Sensing Rechargeable Batteries with Smart Self-Conditioned Charge and Discharge. <i>Angewandte Chemie - International Edition</i> , 2019 , 58, 9248-9253 | 16.4 | 30 |
| 468 | Engineering Ternary Copper-Cobalt Sulfide Nanosheets as High-performance Electrocatalysts toward Oxygen Evolution Reaction. 2019 , 9, 459 | | 12 |
| 467 | Rational design of multifunctional air electrodes for rechargeable Zn/Air batteries: Recent progress and future perspectives. <i>Energy Storage Materials</i> , 2019 , 21, 253-286 | 19.4 | 102 |
| 466 | Design strategies for developing non-precious metal based bi-functional catalysts for alkaline electrolyte based zinc/Air batteries. 2019 , 6, 1812-1827 | | 52 |
| 465 | Flexible and High-Voltage Coaxial-Fiber Aqueous Rechargeable Zinc-Ion Battery. <i>Nano Letters</i> , 2019 , 19, 4035-4042 | 11.5 | 128 |
| 464 | Cobalt Nanoparticles Encapsulated in Nitrogen-Doped Carbon Nanotube as Bifunctional-Catalyst for Rechargeable Zn-Air Batteries. 2019 , 6, | | 11 |
| 463 | Synthesis and Electrochemical Study of Mesoporous Nickel-Cobalt Oxides for Efficient Oxygen Reduction. <i>ACS Applied Materials & Interfaces</i> , 2019 , 11, 18295-18304 | 9.5 | 21 |
| 462 | Interfacial Defect Engineering for Improved Portable Zinc-Air Batteries with a Broad Working Temperature. <i>Angewandte Chemie - International Edition</i> , 2019 , 58, 9459-9463 | 16.4 | 98 |
| 461 | The Advanced Multi-functional Electrocatalyst Efficiently Built from Multi-integrated Sites for Overall Water Splitting and Rechargeable Zinc-air Battery. 2019 , 31, 1381-1389 | | 4 |
| 460 | Exploring oxygen electrocatalytic activity and pseudocapacitive behavior of Co ₃ O ₄ nanoplates in alkaline solutions. <i>Electrochimica Acta</i> , 2019 , 310, 86-95 | 6.7 | 20 |
| 459 | Interfacial Defect Engineering for Improved Portable Zinc/Air Batteries with a Broad Working Temperature. <i>Angewandte Chemie</i> , 2019 , 131, 9559-9563 | 3.6 | 18 |
| 458 | Microwave-assisted hydrothermal synthesis of MOFs-derived bimetallic CuCo-N/C electrocatalyst for efficient oxygen reduction reaction. <i>Journal of Alloys and Compounds</i> , 2019 , 795, 462-470 | 5.7 | 21 |
| 457 | Benchmarking Anode Concepts: The Future of Electrically Rechargeable Zinc/Air Batteries. 2019 , 4, 1287-1300 | | 81 |
| 456 | Cu and Co nanoparticle-Co-decorated N-doped graphene nanosheets: a high efficiency bifunctional electrocatalyst for rechargeable Zn/Air batteries. 2019 , 7, 12851-12858 | | 37 |
| 455 | Reversible Zn-quinone battery with harvesting electrochemical neutralization energy. 2019 , 428, 37-43 | | 14 |
| 454 | Single Atoms on Graphene for Energy Storage and Conversion. <i>Small Methods</i> , 2019 , 3, 1800443 | 12.8 | 42 |
| 453 | Homogeneously Distributed NiFe Alloy Nanoparticles on 3D Carbon Fiber Network as a Bifunctional Electrocatalyst for Overall Water Splitting. 2019 , 6, 2497-2502 | | 23 |

| | | | |
|-----|--|------|-----|
| 452 | Flexible Hydrogel Electrolyte with Superior Mechanical Properties Based on Poly(vinyl alcohol) and Bacterial Cellulose for the Solid-State Zinc-Air Batteries. <i>ACS Applied Materials & Interfaces</i> , 2019 , 11, 15537-15542 | 9.5 | 53 |
| 451 | Importance of Electrocatalyst Morphology for the Oxygen Reduction Reaction. 2019 , 6, 2600-2614 | | 28 |
| 450 | A Usage Scenario Independent Air Chargeable Flexible Zinc Ion Energy Storage Device. <i>Advanced Energy Materials</i> , 2019 , 9, 1900509 | 21.8 | 59 |
| 449 | Atomically dispersed nickel-nitrogen-sulfur species anchored on porous carbon nanosheets for efficient water oxidation. 2019 , 10, 1392 | | 280 |
| 448 | Metal and Nonmetal Codoped 3D Nanoporous Graphene for Efficient Bifunctional Electrocatalysis and Rechargeable Zn-Air Batteries. <i>Advanced Materials</i> , 2019 , 31, e1900843 | 24 | 170 |
| 447 | Oriented Transformation of Co-LDH into 2D/3D ZIF-67 to Achieve Co/Ni Hybrids for Efficient Overall Water Splitting. <i>Advanced Energy Materials</i> , 2019 , 9, 1803918 | 21.8 | 172 |
| 446 | Transparent Bendable Secondary Zinc-Air Batteries by Controlled Void Ionic Separators. 2019 , 9, 3175 | | 11 |
| 445 | Cobalt-Vanadium Hydroxide Nanoneedles with a Free-Standing Structure as High-Performance Oxygen Evolution Reaction Electrocatalysts. 2019 , 6, 2050-2055 | | 19 |
| 444 | Tailoring the Electronic Structure of Co ₂ P by N Doping for Boosting Hydrogen Evolution Reaction at All pH Values. 2019 , 9, 3744-3752 | | 231 |
| 443 | Interface Coupling of Ni ₂ O ₃ Layered Double Hydroxide Nanowires and Cobalt-Based Zeolite Organic Frameworks for Efficient Overall Water Splitting. 2019 , 7, 8255-8264 | | 25 |
| 442 | Self-Sacrificial Template-Directed Vapor-Phase Growth of MOF Assemblies and Surface Vulcanization for Efficient Water Splitting. <i>Advanced Materials</i> , 2019 , 31, e1806672 | 24 | 174 |
| 441 | Electrosynthesis of Hydrogen Peroxide Synergistically Catalyzed by Atomic Co-N -C Sites and Oxygen Functional Groups in Noble-Metal-Free Electrocatalysts. <i>Advanced Materials</i> , 2019 , 31, e1808173 ²⁴ | | 149 |
| 440 | Transition Metal (Fe, Co and Ni) Carbide/Nitride (M ₂ C/N) Nanocatalysts: Structure and Electrocatalytic Applications. 2019 , 11, 2780-2792 | | 27 |
| 439 | Interpenetrated structures appeared in supramolecular cages, MOFs, COFs. <i>Coordination Chemistry Reviews</i> , 2019 , 389, 119-140 | 23.2 | 66 |
| 438 | Metal-containing Ionic Liquid/Polyacrylonitrile-derived Carbon Nanofibers for Oxygen Reduction Reaction and Flexible Zn-Air Battery. 2019 , 14, 2008-2017 | | 13 |
| 437 | Super-Stretchable Zinc-Air Batteries Based on an Alkaline-Tolerant Dual-Network Hydrogel Electrolyte. <i>Advanced Energy Materials</i> , 2019 , 9, 1803046 | 21.8 | 185 |
| 436 | Synergistic effect of charge transfer and short H-bonding on nanocatalyst surface for efficient oxygen evolution reaction. 2019 , 59, 443-452 | | 21 |
| 435 | Atomically Transition Metals on Self-Supported Porous Carbon Flake Arrays as Binder-Free Air Cathode for Wearable Zinc-Air Batteries. <i>Advanced Materials</i> , 2019 , 31, e1808267 | 24 | 265 |

| | | | |
|-----|---|------|-----|
| 434 | Aluminum-Tailored Energy Level and Morphology of Co Al O Porous Nanosheets toward Highly Efficient Electrocatalysts for Water Oxidation. <i>Small</i> , 2019 , 15, e1804886 | 11 | 23 |
| 433 | Monodispersed MnO nanoparticles in graphene-an interconnected N-doped 3D carbon framework as a highly efficient gas cathode in Li ₂ O ₂ batteries. 2019 , 12, 1046-1054 | | 69 |
| 432 | Co nanoparticles encapsulated in N-doped carbon nanofibers as bifunctional catalysts for rechargeable Zn-air battery. 2019 , 478, 560-566 | | 29 |
| 431 | Silver-modified porous 3D nitrogen-doped graphene aerogel: Highly efficient oxygen reduction electrocatalyst for Zn ₂ Air battery. <i>Electrochimica Acta</i> , 2019 , 302, 216-224 | 6.7 | 10 |
| 430 | Fabrication of Superior Single-Atom Catalysts toward Diverse Electrochemical Reactions. <i>Small Methods</i> , 2019 , 3, 1800497 | 12.8 | 68 |
| 429 | Synthesis of a synergistic catalyst for oxygen reduction and a Zn ₂ ir battery by the in situ coupling of hemin-derived Fe ₃ O ₄ /N-doped graphitic carbon. 2019 , 6, 065019 | | 2 |
| 428 | Ultrathin Cobalt Oxide Layers as Electrocatalysts for High-Performance Flexible Zn-Air Batteries. <i>Advanced Materials</i> , 2019 , 31, e1807468 | 24 | 151 |
| 427 | Boosting the oxygen reduction activity of a nano-graphene catalyst by charge redistribution at the graphene-metal interface. 2019 , 11, 5038-5047 | | 14 |
| 426 | Alkaline Polymer Membrane-Based Ultrathin, Flexible, and High-Performance Solid-State Zn-Air Battery. <i>Advanced Energy Materials</i> , 2019 , 9, 1803628 | 21.8 | 38 |
| 425 | Cobalt-Based Nitride-Core Oxide-Shell Oxygen Reduction Electrocatalysts. <i>Journal of the American Chemical Society</i> , 2019 , 141, 19241-19245 | 16.4 | 74 |
| 424 | Facile route to achieve bifunctional electrocatalysts for oxygen reduction and evolution reactions derived from CeO ₂ encapsulated by the zeolitic imidazolate framework-67. 2019 , 6, 3255-3263 | | 13 |
| 423 | Coupled nanocomposite Co _{5.47} N ₁ O ₃ Fe ₇ inlaid in a tremella-like carbon framework as a highly efficient multifunctional electrocatalyst for oxygen transformation and overall water splitting. 2019 , 3, 3538-3549 | | 10 |
| 422 | Reduced to Hierarchy: Carbon Filament-Supported Mixed Metal Oxide Nanoparticles. 2019 , 4, 20230-20236 | | 2 |
| 421 | In situ encapsulation of Co-based nanoparticles into nitrogen-doped carbon nanotubes-modified reduced graphene oxide as an air cathode for high-performance Zn-air batteries. 2019 , 11, 21943-21952 | | 27 |
| 420 | Spinel oxide nanoparticles embedded in nitrogen-doped carbon nanofibers as a robust and self-standing bifunctional oxygen cathode for Zn ₂ ir batteries. 2019 , 7, 24868-24876 | | 48 |
| 419 | Metallic state two-dimensional holey-structured Co ₃ FeN nanosheets as stable and bifunctional electrocatalysts for zinc ₂ ir batteries. 2019 , 7, 26549-26556 | | 13 |
| 418 | CoO-Mo ₂ N hollow heterostructure for high-efficiency electrocatalytic hydrogen evolution reaction. 2019 , 11, | | 38 |
| 417 | Nitrogen and Cobalt Co-Coped Carbon Materials Derived from Biomass Chitin as High-Performance Electrocatalyst for Aluminum-Air Batteries. 2019 , 9, 954 | | 11 |

| | | | |
|-----|---|------|-----|
| 416 | Atomic Co/Ni dual sites and Co/Ni alloy nanoparticles in N-doped porous Janus-like carbon frameworks for bifunctional oxygen electrocatalysis. 2019 , 240, 112-121 | | 211 |
| 415 | Multiwall carbon nanotubes loaded with MoS ₂ quantum dots and MXene quantum dots: NonPt bifunctional catalyst for the methanol oxidation and oxygen reduction reactions in alkaline solution. 2019 , 464, 78-87 | | 64 |
| 414 | Synthesis of Bifunctional Catalysts for Metal-Air Batteries Through Direct Deposition Methods. 2019 , 2, 326-335 | | 9 |
| 413 | Phospho-oxynitride Layer Protected Cobalt Phosphonitride Nanowire Arrays for High-Rate and Stable Supercapacitors. 2019 , 2, 616-626 | | 10 |
| 412 | Phosphorene defect/edge sites induced ultrafine CoP _x doping during one-pot synthesis of ZIF-67: The boosted effect on electrocatalytic oxygen reduction after carbonization. 2019 , 475, 67-74 | | 14 |
| 411 | Multiwall carbon nanotube encapsulated Co grown on vertically oriented graphene modified carbon cloth as bifunctional electrocatalysts for solid-state Zn-air battery. 2019 , 144, 370-381 | | 76 |
| 410 | Recent Advances in Flexible Zinc-Based Rechargeable Batteries. <i>Advanced Energy Materials</i> , 2019 , 9, 1802605 | 21.8 | 204 |
| 409 | Use of Ce to Reinforce the Interface of Ni-Rich LiNi Co Mn O Cathode Materials for Lithium-Ion Batteries under High Operating Voltage. 2019 , 12, 935-943 | | 71 |
| 408 | Co-CoO-Co ₃ O ₄ /N-doped carbon derived from metal-organic framework: The addition of carbon black for boosting oxygen electrocatalysis and Zn-Air battery. <i>Electrochimica Acta</i> , 2019 , 295, 966-977 | 6.7 | 51 |
| 407 | N-doped carbon-coated Co ₃ O ₄ nanosheet array/carbon cloth for stable rechargeable Zn-air batteries. 2019 , 62, 624-632 | | 23 |
| 406 | Bimetallic organic framework-derived hierarchically porous Co-Zn-N-C as efficient catalyst for acidic oxygen reduction reaction. 2019 , 244, 120-127 | | 108 |
| 405 | Enabling highly efficient, flexible and rechargeable quasi-solid-state zn-air batteries via catalyst engineering and electrolyte functionalization. <i>Energy Storage Materials</i> , 2019 , 20, 234-242 | 19.4 | 71 |
| 404 | Porous nanocomposite gel polymer electrolyte with high ionic conductivity and superior electrolyte retention capability for long-cycle-life flexible zinc-air batteries. 2019 , 56, 454-462 | | 116 |
| 403 | Organic/inorganic nitride heterostructure for efficient photocatalytic oxygen evolution. 2019 , 475, 256-263 | | 10 |
| 402 | Crystallization behavior-dependent electrocatalytic activity and stability of Ti/IrO ₂ RuO ₂ SiO ₂ anodes for oxygen evolution reaction. <i>International Journal of Hydrogen Energy</i> , 2019 , 44, 511-522 | 6.7 | 3 |
| 401 | Sulfur-Rich Colloidal Nickel Sulfides as Bifunctional Catalyst for All-Solid-State, Flexible and Rechargeable Zn-Air Batteries. 2019 , 11, 1205-1213 | | 30 |
| 400 | Hierarchically Structured Co(OH)/CoPt/N-CN Air Cathodes for Rechargeable Zinc-Air Batteries. <i>ACS Applied Materials & Interfaces</i> , 2019 , 11, 4983-4994 | 9.5 | 24 |
| 399 | Transition-Metal Oxynitride: A Facile Strategy for Improving Electrochemical Capacitor Storage. <i>Advanced Materials</i> , 2019 , 31, e1806088 | 24 | 61 |

| | | | |
|-----|---|------|-----|
| 398 | In Situ Coupling Strategy for Anchoring Monodisperse CoS Nanoparticles on S and N Dual-Doped Graphene as a Bifunctional Electrocatalyst for Rechargeable Zn-Air Battery. 2019 , 11, 4 | | 51 |
| 397 | Bimetallic Nickel Cobalt Sulfide as Efficient Electrocatalyst for Zn-Air Battery and Water Splitting. 2019 , 11, 2 | | 119 |
| 396 | Work function, carrier type, and conductivity of nitrogen-doped single-walled carbon nanotube catalysts prepared by annealing via defluorination and efficient oxygen reduction reaction. 2019 , 142, 518-527 | | 15 |
| 395 | Recent Advances in Metal-Organic Framework Derivatives as Oxygen Catalysts for Zinc-Air Batteries. 2019 , 2, 272-289 | | 87 |
| 394 | Porous Co ₃ O ₄ nanoplates as the active material for rechargeable Zn-air batteries with high energy efficiency and cycling stability. 2019 , 166, 1241-1248 | | 19 |
| 393 | Janus electrode with simultaneous management on gas and liquid transport for boosting oxygen reduction reaction. <i>Nano Research</i> , 2019 , 12, 177-182 | 10 | 19 |
| 392 | Hierarchical catalytic electrodes of cobalt-embedded carbon nanotube/carbon flakes arrays for flexible solid-state zinc-air batteries. 2019 , 142, 379-387 | | 82 |
| 391 | Bimetallic Covalent Organic Frameworks for Constructing Multifunctional Electrocatalyst. 2019 , 25, 3105-3111 | 32 | |
| 390 | Gram-Scale Preparation of 2D Transition Metal Hydroxide/Oxide Assembled Structures for Oxygen Evolution and Zn-Air Battery. 2019 , 2, 579-586 | | 21 |
| 389 | Efficient quantum dots anchored nanocomposite for highly active ORR/OER electrocatalyst of advanced metal-air batteries. 2019 , 57, 176-185 | | 108 |
| 388 | Hierarchically Structured Multidimensional Carbon Composite Anchored to a Polymer Mat for a Superflexible Supercapacitor. 2019 , 2, 389-397 | | 5 |
| 387 | Spherical mesocrystals from self-assembly of folic acid and nickel(II) ion for high-performance supercapacitors. 2019 , 538, 142-148 | | 8 |
| 386 | Advanced Carbon for Flexible and Wearable Electronics. <i>Advanced Materials</i> , 2019 , 31, e1801072 | 24 | 458 |
| 385 | Promoting electrocatalytic overall water splitting with nanohybrid of transition metal nitride-oxynitride. 2019 , 241, 521-527 | | 128 |
| 384 | Scalable preparation and stabilization of atomic-thick CoNi layered double hydroxide nanosheets for bifunctional oxygen electrocatalysis and rechargeable zinc-air batteries. <i>Energy Storage Materials</i> , 2019 , 16, 24-30 | 19.4 | 38 |
| 383 | In situ nitrogen doping of lithium cobalt oxide via rhodamine B degradation offers the reused material a better activity. 2020 , 500, 143972 | | 3 |
| 382 | Test factors affecting the performance of zinc-air battery. 2020 , 44, 1-7 | | 18 |
| 381 | Synergistically enhanced oxygen reduction electrocatalysis by atomically dispersed and nanoscaled Co species in three-dimensional mesoporous Co, N-codoped carbon nanosheets network. 2020 , 260, 118207 | | 47 |

| | | | |
|-----|--|------|-----|
| 380 | Inverse-opal-structured hybrids of N, S-codoped-carbon-confined Co ₉ S ₈ nanoparticles as bifunctional oxygen electrocatalyst for on-chip all-solid-state rechargeable Zn-air batteries. 2020 , 260, 118209 | | 86 |
| 379 | Cobalt nitride embedded holey N-doped graphene as advanced bifunctional electrocatalysts for Zn-Air batteries and overall water splitting. 2020 , 157, 234-243 | | 75 |
| 378 | Recent Advanced Materials for Electrochemical and Photoelectrochemical Synthesis of Ammonia from Dinitrogen: One Step Closer to a Sustainable Energy Future. <i>Advanced Energy Materials</i> , 2020 , 10, 1902020 | 21.8 | 57 |
| 377 | String of pyrolyzed ZIF-67 particles on carbon fibers for high-performance electrocatalysis. <i>Energy Storage Materials</i> , 2020 , 25, 137-144 | 19.4 | 48 |
| 376 | Recent advances in carbon-based electrocatalysts for oxygen reduction reaction. 2020 , 31, 626-634 | | 60 |
| 375 | Flexible 1D Batteries: Recent Progress and Prospects. <i>Advanced Materials</i> , 2020 , 32, e1901961 | 24 | 69 |
| 374 | An Overview of Fiber-Shaped Batteries with a Focus on Multifunctionality, Scalability, and Technical Difficulties. <i>Advanced Materials</i> , 2020 , 32, e1902151 | 24 | 117 |
| 373 | Co ₉ S ₈ nanoparticles embedded in multiple doped and electrospun hollow carbon nanofibers as bifunctional oxygen electrocatalysts for rechargeable zinc-air battery. 2020 , 268, 118437 | | 68 |
| 372 | Cobalt-Encapsulated Nitrogen-Doped Carbon Nanotube Arrays for Flexible Zinc-Air Batteries. <i>Small Methods</i> , 2020 , 4, 1900571 | 12.8 | 59 |
| 371 | One-dimensional and two-dimensional synergized nanostructures for high-performing energy storage and conversion. 2020 , 2, 3-32 | | 116 |
| 370 | Synergistic Promotion of the Electrochemical Reduction of Nitrogen to Ammonia by Phosphorus and Potassium. 2020 , 12, 334-341 | | 14 |
| 369 | All-solid-state flexible zinc-air battery with polyacrylamide alkaline gel electrolyte. 2020 , 450, 227653 | | 55 |
| 368 | Subnanometer iron clusters confined in a porous carbon matrix for highly efficient zinc-air batteries. 2020 , 5, 359-365 | | 18 |
| 367 | Flexible 3D carbon cloth as a high-performing electrode for energy storage and conversion. 2020 , 12, 5261-5285 | | 37 |
| 366 | Electrode Degradation in Lithium-Ion Batteries. <i>ACS Nano</i> , 2020 , 14, 1243-1295 | 16.7 | 209 |
| 365 | Controllable Co@N-doped graphene anchored onto the NRG0 toward electrocatalytic hydrogen evolution at all pH values. 2020 , 56, 567-570 | | 12 |
| 364 | Co single-atoms on ultrathin N-doped porous carbon via a biomass complexation strategy for high performance metal-air batteries. 2020 , 8, 2131-2139 | | 44 |
| 363 | Combinational Design of Electronic Structure and Nanoarray Architecture Achieves a Low-Overpotential Oxygen Electrode for Aprotic Lithium-Oxygen Batteries. <i>Small Methods</i> , 2020 , 4, 1900619 | 12.8 | 7 |

| | | | |
|-----|---|------|-----|
| 362 | Activation of graphitic nitrogen sites for boosting oxygen reduction. 2020 , 159, 611-616 | | 18 |
| 361 | Facile route to achieve N, S-codoped carbon as bifunctional electrocatalyst for oxygen reduction and evolution reactions. <i>Journal of Alloys and Compounds</i> , 2020 , 821, 153484 | 5.7 | 14 |
| 360 | Nanocellulose-assisted synthesis of ultrafine Co nanoparticles-loaded bimodal micro-mesoporous N-rich carbon as bifunctional oxygen electrode for Zn-air batteries. 2020 , 450, 227640 | | 30 |
| 359 | Optimization of Catalytic Sites in Cobalt-Modified Nitrogen-Doped Carbon towards High-Performance Oxygen Reduction Electrocatalysts for Zinc-Air Batteries. 2020 , 7, 421-427 | | 7 |
| 358 | Confined growth of porous nitrogen-doped cobalt oxide nanoarrays as bifunctional oxygen electrocatalysts for rechargeable zinc-air batteries. <i>Energy Storage Materials</i> , 2020 , 26, 157-164 | 19.4 | 52 |
| 357 | Design and synthesis of carbon-based catalysts for zinc-air batteries. 2020 , 161-190 | | |
| 356 | Nanomaterials of conducting polymers and its application in energy conversion and storage. 2020 , 325-354 | | 4 |
| 355 | Two-Dimensional Hierarchical Fe-N-C Electrocatalyst for Zn-Air Batteries with Ultrahigh Specific Capacity. 2020 , 2, 35-41 | | 16 |
| 354 | N-Doped-carbon/cobalt-nanoparticle/N-doped-carbon multi-layer sandwich nanohybrids derived from cobalt MOFs having 3D molecular structures as bifunctional electrocatalysts for on-chip solid-state Zn-air batteries. 2020 , 12, 3750-3762 | | 40 |
| 353 | Co ₉ S ₈ integrated into nitrogen/sulfur dual-doped carbon nanofibers as an efficient oxygen bifunctional electrocatalyst for Zn-air batteries. 2020 , 4, 1093-1098 | | 12 |
| 352 | Vanadium-containing electro and photocatalysts for the oxygen evolution reaction: a review. 2020 , 8, 2171-2206 | | 59 |
| 351 | Metal-organic frameworks and their derivatives with graphene composites: preparation and applications in electrocatalysis and photocatalysis. 2020 , 8, 2934-2961 | | 93 |
| 350 | Aqueous metal-air batteries: Fundamentals and applications. <i>Energy Storage Materials</i> , 2020 , 27, 478-505 | 19.4 | 94 |
| 349 | Toward Promising Cathode Catalysts for Nonlithium Metal-Oxygen Batteries. <i>Advanced Energy Materials</i> , 2020 , 10, 1901997 | 21.8 | 52 |
| 348 | NiFe nanoparticles embedded N-doped carbon nanotubes as high-efficient electrocatalysts for wearable solid-state Zn-air batteries. 2020 , 68, 104293 | | 107 |
| 347 | Electrode Composite for Flexible Zinc-Manganese Dioxide Batteries through In Situ Polymerization of Polymer Hydrogel. 2020 , 8, 1901165 | | 7 |
| 346 | Highly efficient Fe-N-C oxygen reduction electrocatalyst engineered by sintering atmosphere. 2020 , 449, 227497 | | 10 |
| 345 | Micelle-template synthesis of a 3D porous FeNi alloy and nitrogen-codoped carbon material as a bifunctional oxygen electrocatalyst. <i>Electrochimica Acta</i> , 2020 , 331, 135375 | 6.7 | 14 |

| | | | |
|-----|---|------|----|
| 344 | 3D Carbon Materials for Efficient Oxygen and Hydrogen Electrocatalysis. <i>Advanced Energy Materials</i> , 2020 , 10, 1902494 | 21.8 | 56 |
| 343 | Iron encased organic networks with enhanced lithium storage properties. 2020 , 2, e114 | | 2 |
| 342 | Nanopore Confinement of Electrocatalysts Optimizing Triple Transport for an Ultrahigh-Power-Density Zinc-Air Fuel Cell with Robust Stability. <i>Advanced Materials</i> , 2020 , 32, e2003257 | 14 | 38 |
| 341 | Metal-organic frameworks derived copper doped cobalt phosphide nanosheet arrays with boosted electrochemical performance for hybrid supercapacitors. <i>Electrochimica Acta</i> , 2020 , 363, 137262 | 6.7 | 12 |
| 340 | 1D/2D hierarchical Co _{1-x} Fe _x O@N-doped carbon nanostructures for flexible zinc-air batteries. <i>Electrochimica Acta</i> , 2020 , 363, 137264 | 6.7 | 5 |
| 339 | In situ synthesis of Co ₃ O ₄ nanoparticles confined in 3D nitrogen-doped porous carbon as an efficient bifunctional oxygen electrocatalyst. 2020 , 39, 1383-1394 | | 37 |
| 338 | Heteroatom-doped carbon catalysts for zinc-air batteries: progress, mechanism, and opportunities. 2020 , 13, 4536-4563 | | 83 |
| 337 | Defect Engineering of Carbon-based Electrocatalysts for Rechargeable Zinc-air Batteries. 2020 , 15, 3737-3751 | 7 | |
| 336 | Seawater-based electrolyte for Zinc-air batteries. 2020 , 1, 117-123 | | 3 |
| 335 | A review on recent advancement of nano-structured-fiber-based metal-air batteries and future perspective. 2020 , 134, 110085 | | 15 |
| 334 | Metal-organic framework based bifunctional oxygen electrocatalysts for rechargeable zinc-air batteries: current progress and prospects. 2020 , 11, 11646-11671 | | 28 |
| 333 | Interface Engineering of Binder-Free Earth-Abundant Electrocatalysts for Efficient Advanced Energy Conversion. 2020 , 13, 4795-4811 | | 15 |
| 332 | A Review of the Use of GPEs in Zinc-Based Batteries. A Step Closer to Wearable Electronic Gadgets and Smart Textiles. 2020 , 12, | | 11 |
| 331 | d-Orbital steered active sites through ligand editing on heterometal imidazole frameworks for rechargeable zinc-air battery. 2020 , 11, 5858 | | 49 |
| 330 | Integrated and Binder-Free Air Cathodes of CoFe Nanoalloy and CoN Encapsulated in Nitrogen-Doped Carbon Foam with Superior Oxygen Reduction Activity in Flexible Aluminum-Air Batteries. <i>Advanced Science</i> , 2020 , 7, 2000747 | 13.6 | 34 |
| 329 | Seawater electrolyte-based metal-air batteries: from strategies to applications. 2020 , 13, 3253-3268 | | 46 |
| 328 | Phase Engineering of Iron-Cobalt Sulfides for Zn-Air and Na-Ion Batteries. <i>ACS Nano</i> , 2020 , 14, 10438-10451 | 17 | 20 |
| 327 | A Cu and Fe dual-atom nanozyme mimicking cytochrome c oxidase to boost the oxygen reduction reaction. 2020 , 8, 16994-17001 | | 41 |

| | | | |
|-----|--|------|-----|
| 326 | Self-supported N-doped CNT arrays for flexible Zn-Air batteries. 2020 , 8, 18162-18172 | | 37 |
| 325 | Recent Progress of Flexible Lithium-Air/O ₂ Battery. 2020 , 5, 2000476 | | 13 |
| 324 | Dendrites in Zn-Based Batteries. <i>Advanced Materials</i> , 2020 , 32, e2001854 | 24 | 211 |
| 323 | Cobalt and Nitrogen Co-Doped Electrospun Carbon Nanofibers as a Bifunctional Oxygen Electrocatalyst. 2020 , 1605, 012182 | | |
| 322 | Design of Fe,N co-doped multi-walled carbon nanotubes for efficient oxygen reduction. 2020 , 56, 14467-14470 | 14 | |
| 321 | Regulation of the electronic structure of Co ₄ N with novel Nb to form hierarchical porous nanosheets for electrocatalytic overall water splitting. 2020 , 15, 100268 | | 15 |
| 320 | A general approach for hierarchically porous metal/N/C nanosphere electrocatalysts: nano-confined pyrolysis of in situ-formed amorphous metal-ligand complexes. 2020 , 8, 21026-21035 | | 8 |
| 319 | Solar-driven integrated energy systems: State of the art and challenges. 2020 , 478, 228762 | | 24 |
| 318 | Recent Advances on the Modulation of Electrocatalysts Based on Transition Metal Nitrides for the Rechargeable Zn-Air Battery. 2020 , 2, 1423-1434 | | 40 |
| 317 | Hollow waxberry-like cobalt-nickel oxide/S,N-codoped carbon nanospheres as a trifunctional electrocatalyst for OER, ORR, and HER.. 2020 , 10, 27788-27793 | | 9 |
| 316 | Co/N-Codoped Carbon/ Cloth Hybrid Derived from ZIF-67 for the Oxygen Evolution Reaction and Supercapacitors. <i>Energy & Fuels</i> , 2020 , 34, 13023-13031 | 4.1 | 10 |
| 315 | Graphene-Like Carbon Film Wrapped Tin (II) Sulfide Nanosheet Arrays on Porous Carbon Fibers with Enhanced Electrochemical Kinetics as High-Performance Li and Na Ion Battery Anodes. <i>Advanced Science</i> , 2020 , 7, 1903045 | 13.6 | 27 |
| 314 | Graphite Nanoarrays-Confined Fe and Co Single-Atoms within Graphene Sponges as Bifunctional Oxygen Electrocatalyst for Ultralong Lasting Zinc-Air Battery. <i>ACS Applied Materials & Interfaces</i> , 2020 , 12, 40415-40425 | 9.5 | 12 |
| 313 | Ultrafast formation of an FeOOH electrocatalyst on Ni for efficient alkaline water and urea oxidation. 2020 , 56, 14713-14716 | | 33 |
| 312 | Pollen-derived porous carbon decorated with cobalt/iron sulfide hybrids as cathode catalysts for flexible all-solid-state rechargeable Zn-air batteries. 2020 , 12, 11746-11758 | | 12 |
| 311 | Atomically Dispersed Co ₄ N/B, N-C Nanotubes Boost Oxygen Reduction in Rechargeable Zn-Air Batteries. 2020 , 3, 4539-4548 | | 27 |
| 310 | Oxygen Vacancy Modulation of Bimetallic Oxynitride Anodes toward Advanced Li-Ion Capacitors. <i>Advanced Functional Materials</i> , 2020 , 30, 2000350 | 15.6 | 24 |
| 309 | Advancement of Platinum (Pt)-Free (Non-Pt Precious Metals) and/or Metal-Free (Non-Precious-Metals) Electrocatalysts in Energy Applications: A Review and Perspectives. <i>Energy & Fuels</i> , 2020 , 34, 6634-6695 | 4.1 | 53 |

| | | | |
|-----|---|-----|----|
| 308 | Metal Phthalocyanine-Porphyrin-based Conjugated Microporous Polymer-derived Bifunctional Electrocatalysts for Zn-Air Batteries. 2020 , 15, 1970-1975 | | 8 |
| 307 | A Co ₃ O ₄ /MnCO ₃ heterojunction on three-dimensional nickel foam for an enhanced oxygen evolution reaction. 2020 , 22, 3984-3990 | | 3 |
| 306 | Recent advances in Co-based electrocatalysts for the oxygen reduction reaction. 2020 , 4, 3848-3870 | | 20 |
| 305 | Facile synthesis of cobalt nanoparticles encapsulated in nitrogen-doped carbon nanotubes for use as a highly efficient bifunctional catalyst in rechargeable Zn-Air batteries. <i>Journal of Alloys and Compounds</i> , 2020 , 842, 155791 | 5.7 | 10 |
| 304 | Engineered spin state in Ce doped LaCoO ₃ with enhanced electrocatalytic activity for rechargeable Zn-Air batteries. 2020 , 74, 104948 | | 50 |
| 303 | Ag ₂ O with highly exposed {111} crystal facets for efficient electrochemical oxygen evolution: Activity and mechanism. 2020 , 41, 1706-1714 | | 2 |
| 302 | Microstructure-tuned cobalt oxide electrodes for high-performance ZnCo batteries. <i>Electrochimica Acta</i> , 2020 , 353, 136535 | 6.7 | 14 |
| 301 | Graphene-nanoplatelets-supported NiFe-MOF: high-efficiency and ultra-stable oxygen electrodes for sustained alkaline anion exchange membrane water electrolysis. 2020 , 13, 3447-3458 | | 69 |
| 300 | In situ structural evolution of the multi-site alloy electrocatalyst to manipulate the intermediate for enhanced water oxidation reaction. 2020 , 13, 2200-2208 | | 41 |
| 299 | Carbon Nanomaterials for Zn-Ion Batteries. 2020 , 1-9 | | |
| 298 | Basics and Developments of Zinc-Air Batteries. 2020 , 151-166 | | |
| 297 | Evaluation of the role of nitrogen atoms in cobalt oxynitride electrodes for flexible asymmetric supercapacitors. <i>Electrochimica Acta</i> , 2020 , 353, 136603 | 6.7 | 5 |
| 296 | Oxygen Electrocatalysis with Mesoporous CoNi Catalysts: Towards Understanding the Active Site and Development of Rechargeable Zn-Air Batteries. 2020 , 7, 2877-2887 | | 7 |
| 295 | Cu Nanoclusters/FeN Amorphous Composites with Dual Active Sites in N-Doped Graphene for High-Performance Zn-Air Batteries. <i>ACS Applied Materials & Interfaces</i> , 2020 , 12, 31340-31350 | 9.5 | 42 |
| 294 | A Porous Nano-Micro-Composite as a High-Performance Bi-Functional Air Electrode with Remarkable Stability for Rechargeable Zinc-Air Batteries. 2020 , 12, 130 | | 31 |
| 293 | A metal and nitrogen doped carbon composite with both oxygen reduction and evolution active sites for rechargeable zincAir batteries. 2020 , 8, 15752-15759 | | 16 |
| 292 | MetalOrganic framework derived nitrogen-doped carbon-RhNi alloys anchored on graphene for highly efficient hydrogen evolution reaction. 2020 , 7, 2676-2684 | | 2 |
| 291 | A bimetallic alloy anchored on biomass-derived porous N-doped carbon fibers as a self-supporting bifunctional oxygen electrocatalyst for flexible ZnAir batteries. 2020 , 8, 13725-13734 | | 37 |

| | | | |
|-----|---|------|-----|
| 290 | Bifunctional Oxygen Electrocatalyst of Mesoporous Ni/NiO Nanosheets for Flexible Rechargeable Zn-Air Batteries. 2020 , 12, 68 | | 56 |
| 289 | Controllable Synthesis of Co@CoO/Helical Nitrogen-Doped Carbon Nanotubes toward Oxygen Reduction Reaction as Binder-free Cathodes for Al-Air Batteries. <i>ACS Applied Materials & Interfaces</i> , 2020 , 12, 16512-16520 | 9.5 | 13 |
| 288 | Multidimension-Controllable Synthesis of MOF-Derived Co@N-Doped Carbon Composite with Magnetic-Dielectric Synergy toward Strong Microwave Absorption. <i>Small</i> , 2020 , 16, e2000158 | 11 | 170 |
| 287 | Molecular engineering of nanostructures and activities on bifunctional oxygen electrocatalysts for Zinc-air batteries. 2020 , 270, 118869 | | 19 |
| 286 | Interweaving between MnO ₂ nanowires/ nanorods and carbon nanotubes as robust multifunctional electrode for both liquid and flexible electrochemical energy devices. 2020 , 455, 227992 | | 12 |
| 285 | Metastable Rock Salt Oxide-Mediated Synthesis of High-Density Dual-Protected M@NC for Long-Life Rechargeable Zinc-Air Batteries with Record Power Density. <i>Journal of the American Chemical Society</i> , 2020 , 142, 7116-7127 | 16.4 | 78 |
| 284 | Surface nitridation of nickel-cobalt alloy nanocactoids raises the performance of water oxidation and splitting. 2020 , 270, 118889 | | 60 |
| 283 | Design of metal-organic framework-based photocatalysts for hydrogen generation. <i>Coordination Chemistry Reviews</i> , 2020 , 413, 213266 | 23.2 | 49 |
| 282 | Molecularly Thin Nitride Sheets Stabilized by Titanium Carbide as Efficient Bifunctional Electrocatalysts for Fiber-Shaped Rechargeable Zinc-Air Batteries. <i>Nano Letters</i> , 2020 , 20, 2892-2898 | 11.5 | 38 |
| 281 | A Facile and Scalable Strategy for Fabrication of Superior Bifunctional Freestanding Air Electrodes for Flexible Zinc-Air Batteries. <i>Advanced Functional Materials</i> , 2020 , 30, 2003407 | 15.6 | 54 |
| 280 | N ₂ -dopant of graphene with electrochemically switchable bifunctional ORR/OER catalysis for Zn-air battery. <i>Energy Storage Materials</i> , 2020 , 32, 517-524 | 19.4 | 30 |
| 279 | Electrospun carbon nanofiber decorated with Co-Ni alloy nanoparticles as a bifunctional electrocatalyst for Zn-air battery. 2020 , 275, 128135 | | 2 |
| 278 | Recent Advances on Self-Supported Arrayed Bifunctional Oxygen Electrocatalysts for Flexible Solid-State Zn-Air Batteries. <i>Small</i> , 2020 , 16, e2002902 | 11 | 47 |
| 277 | Electrospinning of Nanofibers for Battery Applications. 2020 , | | 1 |
| 276 | Progress on zinc ion hybrid supercapacitors: Insights and challenges. <i>Energy Storage Materials</i> , 2020 , 31, 252-266 | 19.4 | 62 |
| 275 | Multiscale Construction of Bifunctional Electrocatalysts for Long-Lifespan Rechargeable Zinc-Air Batteries. <i>Advanced Functional Materials</i> , 2020 , 30, 2003619 | 15.6 | 34 |
| 274 | Rich atomic interfaces between sub-1 nm RuO _x clusters and porous Co ₃ O ₄ nanosheets boost oxygen electrocatalysis bifunctionality for advanced Zn-air batteries. <i>Energy Storage Materials</i> , 2020 , 32, 20-29 | 19.4 | 46 |
| 273 | Co-N-C in porous carbon with enhanced lithium ion storage properties. 2020 , 389, 124377 | | 19 |

| | | | |
|-----|---|------|----|
| 272 | Wiping off oxygen bonding to maximize heteroatom-induced improvement in oxygen reaction activity of metal site for high-performance zinc-air battery. 2020 , 31, 195403 | | 1 |
| 271 | Turning Cotton to Self-Supported Electrocatalytic Carbon Electrode for Highly Efficient Oxygen Reduction. 2020 , 11, 317-328 | | 3 |
| 270 | Synergic Effect in a New Electrocatalyst Ni ₂ SbTe ₂ for Oxygen Reduction Reaction. 2020 , 124, 3671-3680 | | 7 |
| 269 | A Co-MOF-derived oxygen-vacancy-rich CoO-based composite as a cathode material for hybrid Zn batteries. 2020 , 49, 2880-2887 | | 14 |
| 268 | CoN loaded N-doped carbon as an efficient bifunctional oxygen electrocatalyst for a Zn-air battery. 2020 , 12, 6089-6095 | | 19 |
| 267 | Bifunctional nickel ferrite-decorated carbon nanotube arrays as free-standing air electrode for rechargeable Zn-air batteries. 2020 , 8, 5070-5077 | | 25 |
| 266 | An amorphous trimetallic (NiCoFe) hydroxide-sheathed 3D bifunctional electrode for superior oxygen evolution and high-performance cable-type flexible zinc-air batteries. 2020 , 8, 5601-5611 | | 32 |
| 265 | Asymmetric Air Cathode Design for Enhanced Interfacial Electrocatalytic Reactions in High-Performance Zinc-Air Batteries. <i>Advanced Materials</i> , 2020 , 32, e1908488 | 24 | 60 |
| 264 | Laser Writing of Janus Graphene/Kevlar Textile for Intelligent Protective Clothing. <i>ACS Nano</i> , 2020 , 14, 3219-3226 | 16.7 | 71 |
| 263 | Quasi-solid-state fiber-shaped aqueous energy storage devices: recent advances and prospects. 2020 , 8, 6406-6433 | | 34 |
| 262 | Novel bi-functional electrocatalysts based on the electrochemical synthesized bimetallic metal organic frameworks: Towards high energy advanced reversible zinc-air batteries. 2020 , 451, 227768 | | 32 |
| 261 | Space-confined synthesis of CoNi nanoalloy in N-doped porous carbon frameworks as efficient oxygen reduction catalyst for neutral and alkaline aluminum-air batteries. <i>Energy Storage Materials</i> , 2020 , 27, 96-108 | 19.4 | 32 |
| 260 | Uniform Virus-Like CoNi Electrode Derived from Prussian Blue Analog for Stretchable Fiber-Shaped Zn-Air Batteries. <i>Advanced Functional Materials</i> , 2020 , 30, 1908945 | 15.6 | 40 |
| 259 | Solvent-Free Chemical Approach to Synthesize Co Nanoparticles Supported on N-doped Porous Carbon for Efficient Electrocatalytic Oxygen Reduction. 2020 , 12, 2580-2588 | | 7 |
| 258 | Interfacial Engineering of Cobalt Nitrides and Mesoporous Nitrogen-Doped Carbon: Toward Efficient Overall Water-Splitting Activity with Enhanced Charge-Transfer Efficiency. 2020 , 5, 692-700 | | 63 |
| 257 | A new strategy for engineering a hierarchical porous carbon-anchored Fe single-atom electrocatalyst and the insights into its bifunctional catalysis for flexible rechargeable Zn-air batteries. 2020 , 8, 9981-9990 | | 48 |
| 256 | Humidity and Pressure Dual-Responsive Metal-Water Batteries Enabled by Three-In-One All-Polymer Cathodes for Smart Self-Powered Systems. <i>ACS Applied Materials & Interfaces</i> , 2020 , 12, 23853-23859 | 9.5 | 5 |
| 255 | TiC-modified MnO ₂ nanowires as highly efficient oxygen electrocatalyst for rechargeable Zn-air batteries. <i>Journal of Alloys and Compounds</i> , 2020 , 834, 155090 | 5.7 | 11 |

| | | | |
|-----|--|------|-----|
| 254 | A Novel Single-Atom Electrocatalyst Ti/rGO for Efficient Cathodic Reduction in Hybrid Photovoltaics. <i>Advanced Materials</i> , 2020 , 32, e2000478 | 24 | 20 |
| 253 | Flexible self-supported bi-metal electrode as a highly stable carbon- and binder-free cathode for large-scale solid-state zinc-air batteries. 2020 , 272, 118953 | | 38 |
| 252 | Atomic species derived CoO _x clusters on nitrogen doped mesoporous carbon as advanced bifunctional electro-catalysts for Zn-air battery. <i>Energy Storage Materials</i> , 2020 , 29, 156-162 | 19.4 | 32 |
| 251 | From metal-organic frameworks to single/dual-atom and cluster metal catalysts for energy applications. 2020 , 13, 1658-1693 | | 156 |
| 250 | A strategy to unlock the potential of CrN as a highly active oxygen reduction reaction catalyst. 2020 , 8, 8575-8585 | | 16 |
| 249 | Self-Catalyzed Growth of Co-N-C Nanobrushes for Efficient Rechargeable Zn-Air Batteries. <i>Small</i> , 2020 , 16, e2001171 | 11 | 48 |
| 248 | Progress of Organic Electrodes in Aqueous Electrolyte for Energy Storage and Conversion. <i>Angewandte Chemie - International Edition</i> , 2020 , 59, 18322-18333 | 16.4 | 40 |
| 247 | Catalytic Polysulfide Conversion and Physiochemical Confinement for Lithium-Sulfur Batteries. <i>Advanced Energy Materials</i> , 2020 , 10, 1904010 | 21.8 | 94 |
| 246 | Heat Treatment-Controlled Morphology Modification of Electrospun Titanium Oxynitride Nanowires for Capacitive Energy Storage and Electrocatalytic Reactions. 2020 , 8, 2000184 | | 5 |
| 245 | Progress of Organic Electrodes in Aqueous Electrolyte for Energy Storage and Conversion. <i>Angewandte Chemie</i> , 2020 , 132, 18478-18489 | 3.6 | 14 |
| 244 | Hierarchical Carbon Microtube@Nanotube Core-Shell Structure for High-Performance Oxygen Electrocatalysis and Zn-Air Battery. 2020 , 12, 97 | | 33 |
| 243 | The Current State of Aqueous Zn-Based Rechargeable Batteries. 2020 , 5, 1665-1675 | | 127 |
| 242 | Metallophthalocyanine-Based Polymer-Derived Co ₂ P Nanoparticles Anchoring on Doped Graphene as High-Efficient Trifunctional Electrocatalyst for Zn-Air Batteries and Water Splitting. 2020 , 8, 6422-6432 | | 38 |
| 241 | Recent advances in flexible fiber-shaped metal-air batteries. <i>Energy Storage Materials</i> , 2020 , 28, 364-374 | 19.4 | 38 |
| 240 | Pt/CoFe ₂ O ₄ -C hollow ball as efficient bifunctional electrocatalyst for Zn-air batteries. 2021 , 368, 204-210 | | 3 |
| 239 | Rational design of CoNi alloy and atomic Co/Ni composite as an efficient electrocatalyst. 2021 , 9, 37-48 | | 19 |
| 238 | Dual-template strategy for electrocatalyst of cobalt nanoparticles encapsulated in nitrogen-doped carbon nanotubes for oxygen reduction reaction. 2021 , 581, 523-532 | | 8 |
| 237 | 3D star-like atypical hybrid MOF derived single-atom catalyst boosts oxygen reduction catalysis. 2021 , 55, 355-360 | | 46 |

| | | | |
|-----|--|------|----|
| 236 | Scalable fabrication and active site identification of MOF shell-derived nitrogen-doped carbon hollow frameworks for oxygen reduction. <i>Journal of Materials Science and Technology</i> , 2021 , 66, 186-192 ^{9.1} | | 16 |
| 235 | Carbon-based electrocatalysts for sustainable energy applications. 2021 , 116, 100717 | | 71 |
| 234 | Atomically dispersed and nanoscaled Co species embedded in micro-/mesoporous carbon nanosheet/nanotube architecture with enhanced oxygen reduction and evolution bifunction for Zn-Air batteries. 2021 , 404, 127112 | | 14 |
| 233 | Recent Progress on Flexible Zn-Air Batteries. <i>Energy Storage Materials</i> , 2021 , 35, 538-549 | 19.4 | 43 |
| 232 | Current status and technical challenges of electrolytes in zinc-air batteries: An in-depth review. 2021 , 408, 127241 | | 22 |
| 231 | Cobalt Nitride Anchored on Nitrogen-Rich Carbons for Efficient Carbon Dioxide Reduction with Visible Light. 2021 , 280, 119454 | | 22 |
| 230 | Dual-active-sites design of Co _{Nx} anchored on zinc-coordinated nitrogen-codoped porous carbon with efficient oxygen catalysis for high-stable rechargeable zinc-air batteries. 2021 , 408, 127321 | | 17 |
| 229 | Bifunctional air electrodes for flexible rechargeable Zn-air batteries. 2021 , 32, 999-1009 | | 6 |
| 228 | Electrochemical Oxygen Reduction to Hydrogen Peroxide via a Two-Electron Transfer Pathway on Carbon-Based Single-Atom Catalysts. 2021 , 8, 2001360 | | 9 |
| 227 | Interfacial engineering in PDMS/graphene composites via anchoring polypyrrole nanowires to enhance its electro-photo thermal performance. 2021 , 174, 10-23 | | 6 |
| 226 | From double-atom catalysts to single-cluster catalysts: A new frontier in heterogeneous catalysis. 2021 , 2, 251-270 | | 16 |
| 225 | Carbon-based materials for all-solid-state zinc-air batteries. 2021 , 3, 50-65 | | 19 |
| 224 | Vertically Aligned N-doped Carbon Nanotubes Arrays as Efficient Binder-free Catalysts for Flexible Li-CO ₂ Batteries. <i>Energy Storage Materials</i> , 2021 , 35, 148-156 | 19.4 | 21 |
| 223 | Recent advances in the field of carbon-based cathode electrocatalysts for Zn-air batteries. <i>Materials Advances</i> , 2021 , 2, 96-114 | 3.3 | 10 |
| 222 | Linker Defects Triggering Boosted Oxygen Reduction Activity of Co/Zn-ZIF Nanosheet Arrays for Rechargeable Zn-Air batteries. <i>Small</i> , 2021 , 17, e2007085 | 11 | 15 |
| 221 | Cobalt phosphide embedded N-doped carbon nanopolyhedral as an efficient cathode electrocatalyst in microbial fuel cells. 2021 , 9, 104582 | | 2 |
| 220 | Electronic structure modulation of isolated Co-N ₄ electrocatalyst by sulfur for improved pH-universal hydrogen evolution reaction. 2021 , 80, 105544 | | 13 |
| 219 | Fabricating Co _{Nx} catalysts based on ZIF-67 for oxygen reduction reaction in alkaline electrolyte. 2021 , 294, 121788 | | 7 |

| | | | |
|-----|---|------|----|
| 218 | Fibrous-Structured Freestanding Electrodes for Oxygen Electrocatalysis. <i>Small</i> , 2021 , 17, e1903760 | 11 | 16 |
| 217 | Topological defect-containing Fe/N co-doped mesoporous carbon nanosheets as novel electrocatalysts for the oxygen reduction reaction and Zn-air batteries. 2021 , 13, 13249-13255 | | 1 |
| 216 | Tuning the structural skeleton of a phenanthroline-based covalent organic framework for better electrochemical performance as a cathode material for Zn-ion batteries: a theoretical exploration. 2021 , 23, 12644-12653 | | 5 |
| 215 | Phase and morphology engineering of porous cobalt-copper sulfide as a bifunctional oxygen electrode for rechargeable Zn-air batteries. 2021 , 9, 18329-18337 | | 2 |
| 214 | Make it stereoscopic: interfacial design for full-temperature adaptive flexible zinc-air batteries. 2021 , 14, 4926-4935 | | 29 |
| 213 | Integrating energy-saving hydrogen production with methanol electrooxidation over Mo modified Co ₄ N nanoarrays. 2021 , 9, 21094-21100 | | 5 |
| 212 | Recent advances of noble-metal-free bifunctional oxygen reduction and evolution electrocatalysts. 2021 , 50, 7745-7778 | | 86 |
| 211 | A highly efficient bifunctional electrocatalyst (ORR/OER) derived from GO functionalized with carbonyl, hydroxyl and epoxy groups for rechargeable zinc-air batteries. 2021 , 45, 6535-6542 | | 1 |
| 210 | Regulating non-precious transition metal nitrides bifunctional electrocatalysts through surface/interface nanoengineering for air-cathodes of Zn-air batteries. 2021 , | | 2 |
| 209 | Highly exposed discrete Co atoms anchored in ultrathin porous N, P-codoped carbon nanosheets for efficient oxygen electrocatalysis and rechargeable aqueous/solid-state Zn-air batteries. | | 2 |
| 208 | Bioinspired interfacial engineering of a CoSe decorated carbon framework cathode towards temperature-tolerant and flexible Zn-air batteries. 2021 , 13, 3019-3026 | | 22 |
| 207 | Ultrasonic Plasma Engineering Toward Facile Synthesis of Single-Atom M-N/N-Doped Carbon (M = Fe, Co) as Superior Oxygen Electrocatalyst in Rechargeable Zinc-Air Batteries. 2021 , 13, 60 | | 26 |
| 206 | encapsulation engineering boosts the electrochemical performance of highly graphitized N-doped porous carbon-based copper-cobalt selenides for bifunctional oxygen electrocatalysis. 2021 , 13, 17663-17674 | | 2 |
| 205 | Nickel-doped Co ₄ N nanowire bundles as efficient electrocatalysts for oxygen evolution reaction. 2021 , 64, 1889-1899 | | 8 |
| 204 | Binder-Free Air Electrodes for Rechargeable Zinc-Air Batteries: Recent Progress and Future Perspectives.. <i>Small Methods</i> , 2021 , 5, e2000827 | 12.8 | 18 |
| 203 | Rational Control of Topological Defects in Porous Carbon for High-Efficiency Carbon Dioxide Conversion. 2021 , 8, 2100051 | | 3 |
| 202 | Understanding of Neighboring Fe-N ₄ -C and Co-N ₄ -C Dual Active Centers for Oxygen Reduction Reaction. <i>Advanced Functional Materials</i> , 2021 , 31, 2011289 | 15.6 | 43 |
| 201 | Filling the Charge-Discharge Voltage Gap in Flexible Hybrid Zinc-Based Batteries by Utilizing a Pseudocapacitive Material. 2021 , 27, 5796-5802 | | 3 |

| | | | |
|-----|---|------|----|
| 200 | Boosting Electrocatalytic Activity of 3d-Block Metal (Hydro)oxides by Ligand-Induced Conversion. <i>Angewandte Chemie - International Edition</i> , 2021 , 60, 10614-10619 | 16.4 | 42 |
| 199 | Boosting Electrocatalytic Activity of 3d-Block Metal (Hydro)oxides by Ligand-Induced Conversion. <i>Angewandte Chemie</i> , 2021 , 133, 10708-10713 | 3.6 | 1 |
| 198 | A 3D hierarchically porous nanoscale ZnO anode for high-energy rechargeable zinc-air batteries. 2021 , 488, 229393 | | 3 |
| 197 | Regulating the Catalytically Active Sites in Low-Cost and Earth-Abundant 3d Transition-Metal-Based Electrode Materials for High-Performance Zinc-Air Batteries. <i>Energy & Fuels</i> , 2021 , 35, 6483-6503 | 4.1 | 9 |
| 196 | Hydrothermal-Induced Formation of Well-Defined Hollow Carbons with Curvature-Activated N-C Sites for Zn-Air Batteries. 2021 , 27, 6247-6253 | | 0 |
| 195 | Bifunctional multi-metallic nitrogen-doped nanocarbon catalysts derived from 5-methylresorcinol. 2021 , 124, 106932 | | 5 |
| 194 | A \approx 0.63 V Bifunctional Oxygen Electrocatalyst Enables High-Rate and Long-Cycling Zinc-Air Batteries. <i>Advanced Materials</i> , 2021 , 33, e2008606 | 24 | 55 |
| 193 | Carbon Dots Promote the Performance of Anodized Nickel Passivation Film on Ethanol Oxidation by Enhancing Oxidation of the Intermediate \square 2021 , 39, 1199-1204 | | 1 |
| 192 | Double Confined MoO/Sn/NC@NC Nanotubes: Solid-Liquid Synthesis, Conformal Transformation, and Excellent Lithium-Ion Storage. <i>ACS Applied Materials & Interfaces</i> , 2021 , 13, 19836-19845 | 9.5 | 5 |
| 191 | Bifunctional Covalent Organic Framework-Derived Electrocatalysts with Modulated p-Band Centers for Rechargeable Zn-Air Batteries. <i>Advanced Functional Materials</i> , 2021 , 31, 2101727 | 15.6 | 26 |
| 190 | In situ coupling of NiFe nanoparticles with N-doped carbon nanofibers for Zn-air batteries driven water splitting. 2021 , 285, 119856 | | 25 |
| 189 | Progress of carbon-based electrocatalysts for flexible zinc-air batteries in the past 5 years: recent strategies for design, synthesis and performance optimization. 2021 , 16, 92 | | 3 |
| 188 | Manganese-Based Materials for Rechargeable Batteries beyond Lithium-Ion. <i>Advanced Energy Materials</i> , 2021 , 11, 2100867 | 21.8 | 27 |
| 187 | Developing Iron-Nickel Bimetallic Oxides with Nanocage Structures As High-Performance Bifunctional Catalysts via the Ensemble Effect from Nitrogen Sources. 2021 , 60, 7490-7497 | | 1 |
| 186 | Can Aqueous Zinc-Air Batteries Work at Sub-Zero Temperatures?. <i>Angewandte Chemie</i> , 2021 , 133, 15409-15413 | 3.5 | 13 |
| 185 | Recent Advances and Prospects of Fiber-Shaped Rechargeable Aqueous Alkaline Batteries. 2021 , 2, 2100060 | | 1 |
| 184 | Recent Advances on MOF Derivatives for Non-Noble Metal Oxygen Electrocatalysts in Zinc-Air Batteries. 2021 , 13, 137 | | 22 |
| 183 | Can Aqueous Zinc-Air Batteries Work at Sub-Zero Temperatures?. <i>Angewandte Chemie - International Edition</i> , 2021 , 60, 15281-15285 | 16.4 | 19 |

| | | | |
|-----|---|------|----|
| 182 | Multiple structural defects in ultrathin NiFe-LDH nanosheets synergistically and remarkably boost water oxidation reaction. <i>Nano Research</i> , 1 | 10 | 10 |
| 181 | Advances in Zeolite Imidazolate Frameworks (ZIFs) Derived Bifunctional Oxygen Electrocatalysts and Their Application in Zinc-Air Batteries. <i>Advanced Energy Materials</i> , 2021 , 11, 2100514 | 21.8 | 24 |
| 180 | Toward Flexible Zinc-Air Batteries with Self-Supported Air Electrodes. <i>Small</i> , 2021 , 17, e2006773 | 11 | 11 |
| 179 | Transition metal nitride electrodes as future energy storage devices: A review. 2021 , 27, 102363 | | 9 |
| 178 | Optimizing the Spin States of Mesoporous Co ₃ O ₄ Nanorods through Vanadium Doping for Long-Lasting and Flexible Rechargeable Zn-Air Batteries. 2021 , 11, 8097-8103 | | 21 |
| 177 | Self-Supporting Electrodes for Gas-Involved Key Energy Reactions. <i>Advanced Functional Materials</i> , 2021 , 31, 2104620 | 15.6 | 14 |
| 176 | Novel core-shell CuMo-oxynitride@N-doped graphene nanohybrid as multifunctional catalysts for rechargeable zinc-air batteries and water splitting. 2021 , 85, 105987 | | 30 |
| 175 | Constructing Active Sites from Atomic-Scale Geometrical Engineering in Spinel Oxide Solid Solutions for Efficient and Robust Oxygen Evolution Reaction Electrocatalysts. <i>Advanced Science</i> , 2021 , 8, e2101653 | 13.6 | 7 |
| 174 | Advanced noble-metal-free bifunctional electrocatalysts for metal-air batteries. 2021 , 8, 454-454 | | 2 |
| 173 | Controllable Fabrication of Core-Shell Co ₉ S ₈ /Co Embedded on Multi-Channel Carbon Nanofibers as Efficient Oxygen Electrocatalysts for Rechargeable Zn-air Batteries. 2021 , 8, 3311-3317 | | 0 |
| 172 | Nanostructured Co ₃ O ₄ Asymmetrically Deposited on a Single Carbon Cloth for an All-Solid-State Integrated Hybrid Device with Reversible Zinc-Air High-Energy Conversion and Asymmetric Supercapacitive High-Power Delivery. <i>Energy & Fuels</i> , 2021 , 35, 12706-12717 | 4.1 | 2 |
| 171 | Recent progress and future perspectives of flexible Zn-Air batteries. <i>Journal of Alloys and Compounds</i> , 2021 , 869, 158918 | 5.7 | 13 |
| 170 | Designed preparation of CoS/Co/MoC nanoparticles incorporated in N and S dual-doped porous carbon nanofibers for high-performance Zn-air batteries. 2021 , 32, 2243-2248 | | 6 |
| 169 | Multi-Functional Hydrogels for Flexible Zinc-Based Batteries Working under Extreme Conditions. <i>Advanced Energy Materials</i> , 2021 , 11, 2101749 | 21.8 | 38 |
| 168 | Selection of hydrogel electrolytes for flexible zinc-air batteries. 2021 , 21, 100538 | | 6 |
| 167 | Designing efficient single-atomic catalysts for bifunctional oxygen electrocatalysis via a general two-step strategy. 2021 , 556, 149779 | | 4 |
| 166 | Smart Fibers and Textiles for Personal Health Management. <i>ACS Nano</i> , 2021 , | 16.7 | 29 |
| 165 | Recent Advances in Enhancing Oxygen Reduction Reaction Performance for Non-Noble-Metal Electrocatalysts Derived from Electrospinning. 2021 , 9, 2100301 | | 0 |

| | | | |
|-----|---|------|----|
| 164 | Surface microenvironment optimization- induced robust oxygen reduction for neutral zinc-air batteries. 2021 , 1, e20210005 | | 1 |
| 163 | Tailoring charge and mass transport in cation/anion-codoped Ni ₃ N / N-doped CNT integrated electrode toward rapid oxygen evolution for fast-charging zinc-air batteries. <i>Energy Storage Materials</i> , 2021 , 39, 11-20 | 19.4 | 19 |
| 162 | Elucidating the mechanism of discharge performance improvement in zinc-air flow batteries: A combination of experimental and modeling investigations. <i>Journal of Energy Storage</i> , 2021 , 40, 102779 | 7.8 | 4 |
| 161 | Bimetallic phthalocyanine heterostructure used for highly selective electrocatalytic CO ₂ reduction. 1 | | 8 |
| 160 | Analysis of Electrochemical Impedance Spectroscopy on Zinc-Air Batteries Using the Distribution of Relaxation Times. 2021 , 7, 56 | | 2 |
| 159 | Flexible carbon nanofiber film with diatomic Fe-Co sites for efficient oxygen reduction and evolution reactions in wearable zinc-air batteries. 2021 , 87, 106147 | | 26 |
| 158 | Integrated Bifunctional Oxygen Electrodes for Flexible ZincAir Batteries: From Electrode Designing to Wearable Energy Storage. 2100673 | | 2 |
| 157 | Mn, N co-doped Co nanoparticles/porous carbon as air cathode for highly efficient rechargeable Zn-air batteries. <i>Nano Research</i> , 1 | 10 | 4 |
| 156 | A sol-gel pretreatment combined strategy for constructing cobalt-embedded and nitrogen-doped carbon matrix with high-density active sites as bifunctional oxygen reduction and evolution electrocatalysts. <i>Journal of Alloys and Compounds</i> , 2021 , 875, 160036 | 5.7 | 0 |
| 155 | A Shape-Variable, Low-Temperature Liquid MetalConductive Polymer Aqueous Secondary Battery. <i>Advanced Functional Materials</i> , 2107062 | 15.6 | 3 |
| 154 | Air Electrodes for Flexible and Rechargeable ZnAir Batteries. 2100103 | | 12 |
| 153 | Recent Progress in MXene-Based Materials for Metal-Sulfur and Metal-Air Batteries: Potential High-Performance Electrodes. 1 | | 18 |
| 152 | Porous Co/NPC@TiO ₂ /TiN composite: Facile preparation and excellent catalytic activity for the oxygen reduction reaction. <i>Journal of Alloys and Compounds</i> , 2021 , 883, 160838 | 5.7 | 2 |
| 151 | In-Situ derived Co _{1-x} S@nitrogen-doped carbon nanoneedle array as a bifunctional electrocatalyst for flexible Zinc-air battery. <i>Journal of Electroanalytical Chemistry</i> , 2021 , 900, 115711 | 4.1 | 2 |
| 150 | Multi-stability modulating of alkaline-earth metal doped LaCoO ₃ for rechargeable Zn-air batteries. <i>Energy Storage Materials</i> , 2021 , 42, 470-476 | 19.4 | 4 |
| 149 | Trifunctional electrocatalyst of N-doped graphitic carbon nanosheets encapsulated with CoFe alloy nanocrystals: The key roles of bimetal components and high-content graphitic-N. 2021 , 298, 120512 | | 27 |
| 148 | Energetic MOF-derived cobalt/iron nitrides embedded into N, S-codoped carbon nanotubes as superior bifunctional oxygen catalysts for ZnAir batteries. 2021 , 569, 151030 | | 1 |
| 147 | Facile synthesis of Co, N enriched carbon nanotube and active site identifications for bifunctional oxygen reduction and evolution catalysis. <i>Energy Storage Materials</i> , 2021 , 43, 365-374 | 19.4 | 6 |

| | | | |
|-----|---|------|-----|
| 146 | Hollow porous nitrogen-doped carbon formed by Fe-modified bimetallic organic framework for rechargeable liquid/solid Zn-air batteries. <i>Journal of Alloys and Compounds</i> , 2021 , 886, 161227 | 5.7 | 3 |
| 145 | Effect of Ce content on performance of AZ31 magnesium alloy anode in air battery. <i>Journal of Alloys and Compounds</i> , 2022 , 891, 161914 | 5.7 | 2 |
| 144 | Interfacial parasitic reactions of zinc anodes in zinc ion batteries: Underestimated corrosion and hydrogen evolution reactions and their suppression strategies. 2022 , 64, 246-262 | | 18 |
| 143 | In-situ observation of the gas evolution process on the air electrode of Zn-air batteries during charging. 2022 , 427, 130862 | | 14 |
| 142 | Transition metal nitrides for electrochemical energy applications. 2021 , 50, 1354-1390 | | 207 |
| 141 | CoO _x /UiO-66 and NiO/UiO-66 heterostructures with UiO-66 frameworks for enhanced oxygen evolution reactions. 2021 , 45, 14822-14830 | | 2 |
| 140 | A facile one-pot synthesis of Co ₂ P nanoparticle-encapsulated doped carbon nanotubes as bifunctional electrocatalysts for high-performance rechargeable Zn-air batteries. 2021 , 23, 1013-1018 | | 5 |
| 139 | Atomic Ni and Cu co-anchored 3D nanoporous graphene as an efficient oxygen reduction electrocatalyst for zinc-air batteries. 2021 , 13, 10862-10870 | | 6 |
| 138 | Coaxial Ni-S@N-Doped Carbon Nanofibers Derived Hierarchical Electrodes for Efficient H ₂ Production Urea Electrolysis. <i>ACS Applied Materials & Interfaces</i> , 2021 , 13, 3937-3948 | 9.5 | 16 |
| 137 | Molecular engineering of carbonyl organic electrodes for rechargeable metal-ion batteries: fundamentals, recent advances, and challenges. | | 24 |
| 136 | ZIF-67 Derived MnO ₂ Doped Electrocatalyst for Oxygen Reduction Reaction. 2021 , 11, 92 | | 7 |
| 135 | Physically Adsorbed Metal Ions in Porous Supports as Electrocatalysts for Oxygen Evolution Reaction. <i>Advanced Functional Materials</i> , 2020 , 30, 1909889 | 15.6 | 23 |
| 134 | Atomically Thin Mesoporous Co O Layers Strongly Coupled with N-rGO Nanosheets as High-Performance Bifunctional Catalysts for 1D Knittable Zinc-Air Batteries. <i>Advanced Materials</i> , 2018 , 30, 1703657 | 24 | 233 |
| 133 | Flexible Metal-Air Batteries: Progress, Challenges, and Perspectives. <i>Small Methods</i> , 2018 , 2, 1700231 | 12.8 | 118 |
| 132 | Single-Atom Electrocatalysts for Water Splitting. 2020 , 67-111 | | 1 |
| 131 | 3D Co-N-doped hollow carbon spheres as excellent bifunctional electrocatalysts for oxygen reduction reaction and oxygen evolution reaction. 2017 , 217, 477-484 | | 177 |
| 130 | Pre-leaching strategy for tuning porosity and composition to generate Co ₂ P/Co@P/N-doped carbon towards highly efficient bifunctional oxygen electrocatalysis. <i>Electrochimica Acta</i> , 2020 , 337, 135807 | 6.7 | 8 |
| 129 | Bimetallic ZnCo zeolitic imidazolate framework/polypyrrole-polyaniline derived Co/N-doped carbon for oxygen reduction reaction. <i>International Journal of Hydrogen Energy</i> , 2020 , 45, 15453-15464 | 6.7 | 15 |

| | | | |
|-----|--|------|-----|
| 128 | Morphology and defect modification on in-situ derived Co ₉ S ₈ -porous nitrogen-doped carbon as a bifunctional electrocatalyst for oxygen evolution and reduction. 2020 , 285, 121185 | | 8 |
| 127 | Surface/interface nanoengineering for rechargeable Zn-air batteries. 2020 , 13, 1132-1153 | | 148 |
| 126 | Flexible metal-air batteries: a potential option for next-generation power accessories for wearable electronics. 2020 , 13, 1933-1970 | | 67 |
| 125 | Ideal design of air electrode a step closer toward robust rechargeable Zn-air battery. 2020 , 8, 050905 | | 18 |
| 124 | Fe-doped Co-N/C as effective electrocatalyst for oxygen reaction. 2020 , 7, 085002 | | 1 |
| 123 | Review Recent Advance in Self-Supported Electrocatalysts for Rechargeable Zinc-Air Batteries. <i>Journal of the Electrochemical Society</i> , 2020 , 167, 110564 | 3.9 | 11 |
| 122 | Hierarchical 3D porous carbon with facily accessible Fe-N ₄ single-atom sites for Zn-air batteries. | | 6 |
| 121 | Enhanced activity towards oxygen electrocatalysis for rechargeable Zn-air batteries by alloying Fe and Co in N-doped carbon. 2021 , 50, 16185-16190 | | 0 |
| 120 | Fe, B, and N Codoped Carbon Nanoribbons Derived from Heteroatom Polymers as High-Performance Oxygen Reduction Reaction Electrocatalysts for Zinc-Air Batteries. 2021 , 37, 13018-13026 | | 3 |
| 119 | High-Performance Capacitive Deionization and Killing Microorganism in Surface-Water by ZIF-9 Derived Carbon Composites.. <i>Small Methods</i> , 2021 , 5, e2101070 | 12.8 | 5 |
| 118 | Nickel Nitrate Hydroxide Holey Nanosheets for Efficient Oxygen Evolution Electrocatalysis in Alkaline Condition. 2022 , 13, 37 | | 0 |
| 117 | Nitrogen doped CuCoO nanoparticles anchored on beaded-like carbon nanofibers as an efficient bifunctional oxygen catalyst toward zinc-air battery. 2021 , 608, 1105-1115 | | 1 |
| 116 | Cobalt-Based Electrocatalysts as Air Cathodes in Rechargeable Zn-Air Batteries: Advances and Challenges. 2100144 | | 12 |
| 115 | Electrochemical Production of 2,5-Furandicarboxylic from 5-Hydroxymethylfurfural Using Ultrathin Co(OH) ₂ on ZIF-67. | | 2 |
| 114 | Ruthenium-Modified Bimetallic Zeolitic-Imidazolate Framework Derivative as a High-Efficient Catalyst for Rechargeable Zinc-Air Batteries. | | 1 |
| 113 | Engineering cobalt nitride nanosheet arrays with rich nitrogen defects as a bifunctional robust oxygen electrocatalyst in rechargeable Zn-air batteries. 2021 , 608, 2066-2074 | | 0 |
| 112 | Amorphous aerogel of trimetallic FeCoNi alloy for highly efficient oxygen evolution. 2022 , 430, 132955 | | 7 |
| 111 | Electrospinning of Nanofibers for Zn-Air Battery. 2020 , 121-139 | | |

| | | | | |
|-----|--|------|--|-----|
| 110 | Aerosol-assisted synthesis of bimetallic nanoparticle-loaded bamboo-like N-doped carbon nanotubes as an efficient bifunctional oxygen catalyst for Zn-air batteries. | | | 1 |
| 109 | Ultrasonic synthesis of Mn-Ni-Fe tri-metallic oxide anchored on polymer-grafted conductive carbon for rechargeable zinc-air battery. 2021 , 81, 105846 | | | 1 |
| 108 | One-dimensional polymer-derived ceramic nanowires with electrocatalytically active metallic silicide tips as cathode catalysts for Zn-air batteries.. 2021 , 11, 39707-39717 | | | 0 |
| 107 | Synthesis and Characterization of Carbon-Supported Cobalt Nitride Nano-Catalyst. | | | 0 |
| 106 | NiCo Nitride/Carbon Nanoflakes as Low-cost Bifunctional Electrocatalysts for Carbohydrate-Assisted Electrolytic H ₂ Generation. 2022 , 100948 | | | |
| 105 | Strategic design of cellulose nanofibers@zeolitic imidazolate frameworks derived mesoporous carbon-supported nanoscale CoFe ₂ O ₄ /CoFe hybrid composition as trifunctional electrocatalyst for Zn-air battery and self-powered overall water-splitting. 2022 , 521, 230925 | | | 3 |
| 104 | Tuning the interfacial electronic coupling of NiO via CeO ₂ and nitrogen co-decoration for highly efficient oxygen evolution reaction. 2022 , 432, 134255 | | | 6 |
| 103 | Prussian blue analogues derived electrocatalyst with multicatalytic centers for boosting oxygen reduction reaction in the wide pH range.. 2021 , 612, 639-649 | | | 1 |
| 102 | In-Situ Silica Xerogel Assisted Facile Synthesis of Fe-N-C Catalysts with Dense Fe-N Active Sites for Efficient Oxygen Reduction.. <i>Small</i> , 2022 , e2104934 | 11 | | 2 |
| 101 | Bifunctional Single-Atom Cobalt Electrocatalysts with Dense Active Sites Prepared via a Silica Xerogel Strategy for Rechargeable Zinc-Air Batteries.. 2022 , 12, | | | 4 |
| 100 | Oxygen Reduction Reaction Electrocatalysts. 2022 , 1-34 | | | 0 |
| 99 | Recent advances in non-precious group metal-based catalysts for water electrolysis and beyond. 2021 , 10, 50-88 | | | 4 |
| 98 | Lithium-Ion Storage Mechanism in Metal-N-C Systems: A First-Principles Study.. 2022 , 7, 2613-2617 | | | |
| 97 | Graphynes: ideal supports of single atoms for electrochemical energy conversion. | | | 8 |
| 96 | Co ^{II} Active Sites between Co Nanoparticles and N-Doped Carbon toward Remarkably Enhanced Electrocatalytic Oxygen Evolution and Hydrogen Evolution Reactions. <i>Energy & Fuels</i> , 2022 , 36, 1688-1696 ² | | | 4.1 |
| 95 | Tailoring the Void Space Using Nanoreactors on Carbon Fibers to Confine SnS Nanosheets for Ultrastable Lithium/Sodium-Ion Batteries.. <i>Small Methods</i> , 2022 , e2101484 | 12.8 | | 0 |
| 94 | Electrocatalysis in Alkaline Media and Alkaline Membrane-Based Energy Technologies.. <i>Chemical Reviews</i> , 2022 , | 68.1 | | 25 |
| 93 | Construction of Bifunctional N-Doped Carbon-Anchored Co Nanoparticles for OER and ORR.. <i>ACS Applied Materials & Interfaces</i> , 2022 , | 9.5 | | 4 |

| | | | |
|----|--|------|----|
| 92 | Facile Synthesis of Nitrogen- and Phosphorus-Co-doped Porous Carbon Nanosheets embedded with FeP clusters for the Oxygen Reduction Reaction using Rechargeable Zinc-Air Batteries. <i>Journal of Electroanalytical Chemistry</i> , 2022 , 116122 | 4.1 | |
| 91 | Rational Design of Ag Nanoparticles on Zif-67-Functionalized Carbon Nanotube for Enzymeless Glucose Detection and Electrocatalytic Water Oxidation. <i>SSRN Electronic Journal</i> , | 1 | |
| 90 | Zeolitic Imidazolate Framework-Derived Copper Single Atom Anchored on Nitrogen-Doped Porous Carbon as Highly Efficient Electrocatalysts for Oxygen Reduction Reaction. <i>SSRN Electronic Journal</i> , | 1 | |
| 89 | Rational Design of Ag Nanoparticles on Zif-67-Functionalized Carbon Nanotube for Enzymeless Glucose Detection and Electrocatalytic Water Oxidation. <i>SSRN Electronic Journal</i> , | 1 | |
| 88 | Theoretical Understanding and Brief Insight into Heterogeneous Single Atom Catalysis. <i>SSRN Electronic Journal</i> , | 1 | |
| 87 | 3D Spatial Combination of CN Vacancy-Mediated NiFe-PBA with N-Doped Carbon Nanofibers Network Toward Free-Standing Bifunctional Electrode for Zn-Air Batteries.. <i>Advanced Science</i> , 2022 , e2105925 | 13.6 | 5 |
| 86 | Stabilizing Cobalt Single Atoms via Flexible Carbon Membranes as Bifunctional Electrocatalysts for Binder-Free Zinc-Air Batteries.. <i>Nano Letters</i> , 2022 , | 11.5 | 6 |
| 85 | Modulating the Electronic Structure of FeCo Nanoparticles in N-Doped Mesoporous Carbon for Efficient Oxygen Reduction Reaction.. <i>Advanced Science</i> , 2022 , e2200394 | 13.6 | 3 |
| 84 | Oxygen-Rich Cobalt/Nitrogen/Carbon Porous Nanosheets for Bifunctional Oxygen Electrocatalysis. <i>Advanced Functional Materials</i> , 2200763 | 15.6 | 10 |
| 83 | Cobalt-based oxygen electrocatalysts for zinc-air batteries: Recent progress, challenges, and perspectives. <i>Nano Research</i> , 1 | 10 | 4 |
| 82 | Nanostructured Metal Phosphide Based Catalysts for Electrochemical Water Splitting: A Review.. <i>Small</i> , 2022 , e2107572 | 11 | 7 |
| 81 | Imidazolium bromide: a tri-functional additive for rechargeable Li-O ₂ batteries. <i>Energy Storage Materials</i> , 2022 , | 19.4 | 2 |
| 80 | Chimie douce derived Nickel/ Cobalt Oxynitride as Electrode Material for High Energy Density Supercapacitors. <i>Electrochimica Acta</i> , 2022 , 140341 | 6.7 | 0 |
| 79 | Hierarchically Nanostructured Solid-State Electrolyte for Flexible Rechargeable Zinc-Air Batteries.. <i>Angewandte Chemie - International Edition</i> , 2022 , | 16.4 | 4 |
| 78 | Hierarchically Nanostructured Solid-State Electrolyte for Flexible Rechargeable Zinc/Air Batteries. <i>Angewandte Chemie</i> , | 3.6 | 0 |
| 77 | Hydrazine Hydrate Intercalated 1T-Dominant MoS with Superior Ambient Stability for Highly Efficient Electrocatalytic Applications.. <i>ACS Applied Materials & Interfaces</i> , 2022 , | 9.5 | 3 |
| 76 | Rational design of Ag nanoparticles on ZIF-67-functionalized carbon nanotube for enzymeless glucose detection and electrocatalytic water oxidation. <i>Journal of Alloys and Compounds</i> , 2022 , 910, 164878 | 5.7 | 2 |
| 75 | A 3D/0D cobalt-embedded nitrogen-doped porous carbon/supramolecular porphyrin magnetic-separation photocatalyst with highly efficient pollutant degradation and water oxidation performance. <i>Journal of Materials Science and Technology</i> , 2022 , 124, 53-64 | 9.1 | 0 |

| | | | |
|----|--|------|----|
| 74 | Growing two-dimensional single crystals of organic semiconductors on liquid surfaces. <i>Applied Physics Letters</i> , 2021 , 119, 210501 | 3.4 | 1 |
| 73 | Chemical Buffer Layer Enabled Highly Reversible Zn Anode for Deeply Discharging and Long-Life Zn-Air Battery.. <i>Small</i> , 2021 , e2106604 | 11 | 1 |
| 72 | Frontiers and Structural Engineering for Building Flexible Zinc-Air Batteries.. <i>Advanced Science</i> , 2021 , e2103954 | 13.6 | 6 |
| 71 | Synergetic Chemistry and Interface Engineering of Hydrogel Electrolyte to Strengthen Durability of Solid-State Zn-Air Batteries.. <i>Small Methods</i> , 2022 , 6, e2101276 | 12.8 | 7 |
| 70 | A Segmented Cell Measuring Technique for Current Distribution Measurements in Batteries, Exemplified by the Operando Investigation of a Zn-Air Battery. <i>Journal of the Electrochemical Society</i> , 2021 , 168, 120530 | 3.9 | 2 |
| 69 | Recent progress and future perspectives of flexible metal-air batteries. <i>SmartMat</i> , 2021 , 2, 519-553 | 22.8 | 5 |
| 68 | Enhanced Oxygen Evolution Catalytic Activity of Ni ₃ Mo ₃ N-MoO ₂ -NiO Nanoparticles via Synergistic Effect. <i>Energy & Fuels</i> , | 4.1 | 1 |
| 67 | Conducting polymers-derived fascinating electrocatalysts for advanced hydrogen and oxygen electrocatalysis. <i>Coordination Chemistry Reviews</i> , 2022 , 464, 214555 | 23.2 | 1 |
| 66 | Data_Sheet_1.PDF. 2019 , | | |
| 65 | Freestanding Metal-Organic Frameworks and Their Derivatives: An Emerging Platform for Electrochemical Energy Storage and Conversion.. <i>Chemical Reviews</i> , 2022 , | 68.1 | 10 |
| 64 | A Unique Nanocomposite with FeCo Nanoalloy Anchored on S, N Co-Doped Carbonaceous Matrix for High Bifunctional Oxygen Reduction Reaction/Oxygen Evolution Reaction Electrocatalytic Property in Zn-Air Battery. <i>SSRN Electronic Journal</i> , | 1 | |
| 63 | Zeolitic Imidazolate Framework-Derived Copper Single Atom Anchored on Nitrogen-Doped Porous Carbon as a Highly Efficient Electrocatalyst for the Oxygen Reduction Reaction toward ZnAir Battery. <i>Chemistry of Materials</i> , 2022 , 34, 4104-4114 | 9.6 | 0 |
| 62 | Norbornane derived N-doped sp ² carbon framework as an efficient electrocatalyst for oxygen reduction reaction and hydrogen evolution reaction. <i>Fuel</i> , 2022 , 323, 124420 | 7.1 | 0 |
| 61 | Isolating Single and Few Atoms for Enhanced Catalysis.. <i>Advanced Materials</i> , 2022 , e2201796 | 24 | 12 |
| 60 | Nanoemulsion-Coated Ni-Fe Hydroxide Self-Supported Electrode as an Air-Breathing Cathode for High-Performance Zinc-Air Batteries.. <i>Nano Letters</i> , 2022 , | 11.5 | 5 |
| 59 | ZnAir batteries for electric vehicles. <i>Tungsten</i> , | 4.6 | 0 |
| 58 | Boosting the Electrocatalytic Oxygen Evolution of Perovskite LaCo _{1-x} Fe _x O ₃ by the Construction of Yolk-Shell Nanostructures and Electronic Modulation. <i>Small</i> , 2201131 | 11 | 3 |
| 57 | ZIF-Derived Co/Zn Bimetallic Catalytic Membrane with Abundant CNTs for Highly Efficient Reduction of p-Nitrophenol. <i>Industrial & Engineering Chemistry Research</i> , | 3.9 | 1 |

| | | | |
|----|---|------|----|
| 56 | Azobenzene modified metal-organic framework: For solar energy storage. <i>Journal of Energy Storage</i> , 2022 , 52, 104971 | 7.8 | 0 |
| 55 | Introduction of a new active and stable cathode catalyst based on bimetal-organic frameworks/PPy-sheet for alkaline direct ethanol fuel cell. <i>International Journal of Hydrogen Energy</i> , 2022 , | 6.7 | 1 |
| 54 | In situ coupling of lignin-derived carbon-encapsulated CoFe-Co x N heterojunction for oxygen evolution reaction. <i>AIChE Journal</i> , | 3.6 | 3 |
| 53 | Implementation of heteroatom-doped nanomaterial/core-shell nanostructure based electrocatalysts for fuel cells and metal-ion/air/sulfur batteries. <i>Materials Advances</i> , | 3.3 | 2 |
| 52 | Tuning the Site-to-Site Interaction in Ru _M (M=Co, Fe, Ni) Diatomic Electrocatalysts to Climb up the Volcano Plot of Oxygen Electroreduction. <i>ACS Nano</i> , | 16.7 | 2 |
| 51 | Recent advances of micro-nanofiber materials for rechargeable zinc-air batteries. <i>Energy Storage Materials</i> , 2022 , 51, 181-211 | 19.4 | 2 |
| 50 | Steering structural mesoporosity and working microenvironment of Fe-N-C catalysts for boosting cathodic mass transport of zinc-air batteries. <i>Science China Chemistry</i> , | 7.9 | 0 |
| 49 | In Situ Integrating Highly Ionic Conductive LDH-Array@PVA Gel Electrolyte and MXene/Zn Anode for Dendrite-Free High-Performance Flexible Zn-Air Batteries. <i>Advanced Energy Materials</i> , 2201393 | 21.8 | 2 |
| 48 | MOF-Derived Co and Fe Species Loaded on N-Doped Carbon Networks as Efficient Oxygen Electrocatalysts for Zn-Air Batteries. 2022 , 14, | | 4 |
| 47 | Mixed-phase cobalt-based nanosheets prepared by rapid thermal annealing for oxygen evolution catalysis. | | 0 |
| 46 | Coordination Engineering of Ultra-Uniform Ruthenium Nanoclusters as Efficient Multifunctional Catalysts for Zinc-Air Batteries. 2200035 | | 2 |
| 45 | CeO ₂ /C ₂ nanoparticles with oxygen-enriched vacancies in-situ self-embedded in Fe, N co-doped carbon nanofibers as efficient oxygen reduction catalyst for Zn-air battery. | | 0 |
| 44 | Surface Reconstruction of Co ₄ N Coupled with CeO ₂ toward Enhanced Alkaline Oxygen Evolution Reaction. | | 2 |
| 43 | Metal-organic framework-derived heteroatom-doped nanoarchitectures for electrochemical energy storage: Recent advances and future perspectives. 2022 , 52, 685-735 | | 2 |
| 42 | TiO _{1.8} with lattice H for effective electrocatalytic nitrogen fixation. 2022 , 319, 121933 | | 1 |
| 41 | Electrochemical Synthesis of Hydrogen Peroxide Catalyzed by Carbon Nanotubes with Surface Co-NX Sites and Encapsulated Co Nanoparticles. 2022 , 14, 44282-44291 | | 1 |
| 40 | Active-site and interface engineering of cathode materials for aqueous Zn-air batteries. | | 14 |
| 39 | Highly-stable, bifunctional, binder-free & stand-alone photoelectrode (Fe _x Ni _{1-x} O@CC) for natural waters splitting into hydrogen. 2022 , | | 0 |

- 38 Electron modulation by atomic Ir site decoration in porous Co/N co-doped carbon for electrocatalytic hydrogen evolution. 0
- 37 Polypyrrole-Assisted Nitrogen Doping Strategy to Boost Vanadium Dioxide Performance for Wearable Nonpolarity Supercapacitor and Aqueous Zinc-Ion Battery. 2201481 1
- 36 High-performance bifunctional oxygen electrocatalysts for zinc-air batteries over nitrogen-doped carbon encapsulating CoNi nanoparticles. 0
- 35 A unique nanocomposite with FeCo nanoalloy anchored on S, N co-doped carbonaceous matrix for high bifunctional oxygen reduction reaction/oxygen evolution reaction electrocatalytic property in Zn-air battery. 2022, 0
- 34 The generation of carbon/oxygen double defects in FeP/CoP-N-C enhanced by P particles for photic driving degradation of levofloxacin. 2022, 303, 122186 0
- 33 Interfacing MnO and FeCo alloy inside N-doped carbon hierarchical porous nanospheres derived from metal-organic framework to boost high-performance oxygen reduction for Zn-air batteries. 0
- 32 Essential data for industrially relevant development of bifunctional cathodes and biopolymer electrolytes in solid-state zinc-air secondary batteries. 0
- 31 Electrostatic Spinning Strategy to Prepare Cage-like PAN-Fiber Network-Wrapped CoNi Structures for the Oxygen Reduction Reaction. 0
- 30 In situ coupling of highly dispersed Ni/Fe Metal-NC sites and N-doped 3D carbon fibers toward free-standing bifunctional cathode for flexible Zinc-air battery. 0
- 29 Controllable fabrication of superhierarchical carbon nanonetworks from 2D molecular brushes and their use in electrodes of flexible supercapacitors. 2022, 37, 978-987 1
- 28 New Design of Zinc-Air Batteries. 2022, 217-259 0
- 27 Highly dispersed LaO/Ni sites anchored in hierarchically porous nitrogen-doped carbon as bifunctional catalysts for high-performance rechargeable Zn-air batteries. 2023, 54, 313-322 1
- 26 Noble metal-free high-entropy oxide/Co-N-C bifunctional electrocatalyst enables highly reversible and durable Zn-air batteries. 2023, 610, 155624 0
- 25 Bimetallic organic framework-decorated leaf-like 2D nanosheets as flexible air cathode for rechargeable Zn-air batteries. 0
- 24 Advances in solid-state fiber batteries for wearable bioelectronics. 2022, 26, 101042 3
- 23 Chemically embedding Co nanospheres in N-doped carbon nanosheets for enhanced zinc-air batteries. 2023, 555, 232381 0
- 22 Key materials and structural design in flexible and stretchable zinc-air batteries. 2023, 106, 108039 0
- 21 A review on system and materials for aqueous flexible metal-air batteries. 0

| | | |
|----|---|---|
| 20 | A Bibliometric Analysis of Wearable Device Research Trends 2001-2022: A Study on the Reversal of Number of Publications and Research Trends in China and the USA. 2022 , 19, 16427 | 1 |
| 19 | Cathode Materials for Secondary Zinc-Air Batteries. 2023 , 67-156 | 0 |
| 18 | Aerophilic Triphase Interface Tuned by Carbon Dots Driving Durable and Flexible Rechargeable Zn-Air Batteries. 2023 , 15, | 0 |
| 17 | Functional Metal/Carbon Composites Derived from Metal-Organic Frameworks: Insight into Structures, Properties, Performances, and Mechanisms. 1759-1790 | 0 |
| 16 | Electrocatalytic Porphyrin/Phthalocyanine-Based Organic Frameworks: Building Blocks, Coordination Microenvironments, Structure-Performance Relationships. 2206239 | 2 |
| 15 | In situ induced growth strategy of Co ₂ P nanocrystals encapsulated into stable 3D carbon network as a bifunctional electrocatalyst for Zn-air battery. 2023 , | 0 |
| 14 | Carbide Haws-Like Fe ₃ C Catalysts with Broadened Carbon Interlayer Spacing for Efficient Zinc-Air Battery. 2023 , 15, 953-962 | 0 |
| 13 | Rational Design of Flexible Zn-Based Batteries for Wearable Electronic Devices. | 0 |
| 12 | A high-energy aqueous Zn/NO ₂ electrochemical cell: a new strategy for NO ₂ fixation and electric power generation. | 0 |
| 11 | Research progress on the construction of synergistic electrocatalytic ORR/OER self-supporting cathodes for zinc-air batteries. | 1 |
| 10 | Developing NiMoO ₄ -Based Multifunctional Cathode for Hybrid Zinc Battery. | 0 |
| 9 | Cobalt-doped porous carbon nanofibers with three-dimensional network structures as electrocatalysts for enhancing oxygen reduction reaction. 2023 , | 0 |
| 8 | Rational Design of Molybdenum-Doped Cobalt Nitride Nanowire Arrays for Robust Overall Water Splitting. | 0 |
| 7 | Copper-Doped Cobalt Oxichloride for Efficient Oxygen Evolution Reactions in an Alkaline Medium. 2023 , 6, 2489-2496 | 0 |
| 6 | Operando Studies of Electrochemical Denitrogenation and Its Mitigation of N-Doped Carbon Catalysts in Alkaline Media. 2023 , 13, 2813-2821 | 0 |
| 5 | Composition-Tunable Co ₃ -Fe _x Mo ₃ N Electrocatalysts for the Oxygen Evolution Reaction. 2023 , 8, 1455-1462 | 0 |
| 4 | Recent Advances in Wearable Aqueous Metal-Air Batteries: From Configuration Design to Materials Fabrication. 2201762 | 0 |
| 3 | Gel polymer electrolyte with alkaline aquatic colloidal graphene for flexible and rechargeable zinc air batteries. 2023 , 448, 142195 | 0 |

- 2 Metal-mediated Schiff Base Polymer Enables Metal/Nitrogen Codoped N-Doped Carbon Nanosheets as Efficient Bifunctional Electrocatalyst for Durable Rechargeable Zn-Air Batteries. **2023**, 102783 ○
- 1 Carbon Black-Supported Single-Atom Co₂N₂C as an Efficient Oxygen Reduction Electrocatalyst for H₂O₂ Production in Acidic Media and Microbial Fuel Cell in Neutral Media. ○