

# Tao Qian

## List of Publications by Year in descending order

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115  
papers

7,579  
citations

47006

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54911

84  
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117  
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117  
docs citations

117  
times ranked

8493  
citing authors

#	ARTICLE	IF	CITATIONS
1	Over 56.55% Faradaic efficiency of ambient ammonia synthesis enabled by positively shifting the reaction potential. <i>Nature Communications</i> , 2019, 10, 341.	12.8	412
2	A Sustainable Route from Biomass Byproduct Okara to High Content Nitrogen-Doped Carbon Sheets for Efficient Sodium Ion Batteries. <i>Advanced Materials</i> , 2016, 28, 539-545.	21.0	384
3	Lithium anode stable in air for low-cost fabrication of a dendrite-free lithium battery. <i>Nature Communications</i> , 2019, 10, 900.	12.8	297
4	A New Type of Multifunctional Polar Binder: Toward Practical Application of High Energy Lithium Sulfur Batteries. <i>Advanced Materials</i> , 2017, 29, 1605160.	21.0	284
5	Greatly Suppressed Shuttle Effect for Improved Lithium Sulfur Battery Performance through Short Chain Intermediates. <i>Nano Letters</i> , 2017, 17, 538-543.	9.1	271
6	A New Hydrophilic Binder Enabling Strongly Anchoring Polysulfides for High-Performance Sulfur Electrodes in Lithium-Sulfur Battery. <i>Advanced Energy Materials</i> , 2018, 8, 1702889.	19.5	270
7	Proton-filtering covalent organic frameworks with superior nitrogen penetration flux promote ambient ammonia synthesis. <i>Nature Catalysis</i> , 2021, 4, 322-331.	34.4	216
8	Facilitating nitrogen accessibility to boron-rich covalent organic frameworks via electrochemical excitation for efficient nitrogen fixation. <i>Nature Communications</i> , 2019, 10, 3898.	12.8	191
9	Dopamine fluorescent sensors based on polypyrrole/graphene quantum dots core/shell hybrids. <i>Biosensors and Bioelectronics</i> , 2015, 64, 404-410.	10.1	184
10	Ultrasensitive dopamine sensor based on novel molecularly imprinted polypyrrole coated carbon nanotubes. <i>Biosensors and Bioelectronics</i> , 2014, 58, 237-241.	10.1	158
11	Interconnected three-dimensional $V_2O_5$ /polypyrrole network nanostructures for high performance solid-state supercapacitors. <i>Journal of Materials Chemistry A</i> , 2015, 3, 488-493.	10.3	135
12	Facilitated Oxygen Chemisorption in Heteroatom-Doped Carbon for Improved Oxygen Reaction Activity in All-Solid-State Zinc-Air Batteries. <i>Advanced Materials</i> , 2018, 30, 1704898.	21.0	135
13	Progress and perspective of organosulfur polymers as cathode materials for advanced lithium-sulfur batteries. <i>Energy Storage Materials</i> , 2018, 15, 53-64.	18.0	131
14	Selenium-Doped Cathodes for Lithium-Organosulfur Batteries with Greatly Improved Volumetric Capacity and Coulombic Efficiency. <i>Advanced Materials</i> , 2017, 29, 1701294.	21.0	126
15	<i>In situ</i> optical spectroscopy characterization for optimal design of lithium-sulfur batteries. <i>Chemical Society Reviews</i> , 2019, 48, 5432-5453.	38.1	120
16	Modulating the d-band center of boron doped single-atom sites to boost the oxygen reduction reaction. <i>Journal of Materials Chemistry A</i> , 2019, 7, 20952-20957.	10.3	117
17	Au nanoparticles decorated polypyrrole/reduced graphene oxide hybrid sheets for ultrasensitive dopamine detection. <i>Sensors and Actuators B: Chemical</i> , 2014, 193, 759-763.	7.8	114
18	An Efficient Bifunctional Electrocatalyst for a Zinc-Air Battery Derived from Fe/N/C and Bimetallic Metal-Organic Framework Composites. <i>ACS Applied Materials &amp; Interfaces</i> , 2017, 9, 5213-5221.	8.0	113

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19	Molecularly Imprinted Polymer Enables High-Efficiency Recognition and Trapping Lithium Polysulfides for Stable Lithium Sulfur Battery. <i>Nano Letters</i> , 2017, 17, 5064-5070.	9.1	112
20	High Lithium Ion Conductivity LiF/GO Solid Electrolyte Interphase Inhibiting the Shuttle of Lithium Polysulfides in Long-Life Li-S Batteries. <i>Advanced Functional Materials</i> , 2018, 28, 1706513.	14.9	109
21	High-Safety All-Solid-State Lithium-Metal Battery with High-Ionic-Conductivity Thermoresponsive Solid Polymer Electrolyte. <i>Nano Letters</i> , 2019, 19, 3066-3073.	9.1	108
22	Salting-out effect promoting highly efficient ambient ammonia synthesis. <i>Nature Communications</i> , 2021, 12, 3198.	12.8	105
23	Facile and cost-effective preparation of carbon quantum dots for Fe <sup>3+</sup> ion and ascorbic acid detection in living cells based on the "on-off-on" fluorescence principle. <i>Applied Surface Science</i> , 2019, 469, 911-916.	6.1	102
24	A facilely prepared polypyrrole-reduced graphene oxide composite with a crumpled surface for high performance supercapacitor electrodes. <i>Journal of Materials Chemistry A</i> , 2013, 1, 6539.	10.3	93
25	A new high ionic conductive gel polymer electrolyte enables highly stable quasi-solid-state lithium sulfur battery. <i>Energy Storage Materials</i> , 2019, 22, 256-264.	18.0	89
26	Mega High Utilization of Sodium Metal Anodes Enabled by Single Zinc Atom Sites. <i>Nano Letters</i> , 2019, 19, 7827-7835.	9.1	86
27	Novel Organophosphate-Derived Dual-Layered Interface Enabling Air-Stable and Dendrite-Free Lithium Metal Anode. <i>Advanced Materials</i> , 2020, 32, e1902724.	21.0	83
28	Facilely prepared polypyrrole-reduced graphite oxide core-shell microspheres with high dispersibility for electrochemical detection of dopamine. <i>Chemical Communications</i> , 2013, 49, 4610.	4.1	82
29	Use of Tween Polymer To Enhance the Compatibility of the Li/Electrolyte Interface for the High-Performance and High-Safety Quasi-Solid-State Lithium-Sulfur Battery. <i>Nano Letters</i> , 2018, 18, 4598-4605.	9.1	81
30	All-Solid-State Flexible Supercapacitors Based on Highly Dispersed Polypyrrole Nanowire and Reduced Graphene Oxide Composites. <i>ACS Applied Materials &amp; Interfaces</i> , 2014, 6, 17937-17943.	8.0	76
31	Nonflammable and High-Voltage-Tolerated Polymer Electrolyte Achieving High Stability and Safety in 4.9 V-Class Lithium Metal Battery. <i>ACS Applied Materials &amp; Interfaces</i> , 2019, 11, 45048-45056.	8.0	73
32	Preparation of on chip, flexible supercapacitor with high performance based on electrophoretic deposition of reduced graphene oxide/polypyrrole composites. <i>Carbon</i> , 2015, 92, 348-353.	10.3	71
33	A New Type of Electrolyte System To Suppress Polysulfide Dissolution for Lithium-Sulfur Battery. <i>ACS Nano</i> , 2019, 13, 9067-9073.	14.6	69
34	Unprecedented Activity of Bifunctional Electrocatalyst for High Power Density Aqueous Zinc-Air Batteries. <i>ACS Applied Materials &amp; Interfaces</i> , 2017, 9, 21216-21224.	8.0	64
35	Single-Atom Iron as Lithiophilic Site To Minimize Lithium Nucleation Overpotential for Stable Lithium Metal Full Battery. <i>ACS Applied Materials &amp; Interfaces</i> , 2019, 11, 32008-32014.	8.0	64
36	Altering the rate-determining step over cobalt single clusters leading to highly efficient ammonia synthesis. <i>National Science Review</i> , 2021, 8, nwaal36.	9.5	64

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37	Boosting Oxygen Dissociation over Bimetal Sites to Facilitate Oxygen Reduction Activity of Zinc-Air Battery. <i>Advanced Functional Materials</i> , 2021, 31, 2006533.	14.9	64
38	Highly dispersed carbon nanotube/polypyrrole core/shell composites with improved electrochemical capacitive performance. <i>Journal of Materials Chemistry A</i> , 2013, 1, 15230.	10.3	63
39	Core-Shell Coating Silicon Anode Interfaces with Coordination Complex for Stable Lithium-Ion Batteries. <i>ACS Applied Materials &amp; Interfaces</i> , 2016, 8, 5358-5365.	8.0	60
40	Anion-regulated solid polymer electrolyte enhances the stable deposition of lithium ion for lithium metal batteries. <i>Journal of Power Sources</i> , 2019, 417, 70-75.	7.8	60
41	Boosting the Optimization of Lithium Metal Batteries by Molecular Dynamics Simulations: A Perspective. <i>Advanced Energy Materials</i> , 2020, 10, 2002373.	19.5	56
42	All-Liquid-Phase Reaction Mechanism Enabling Cryogenic Li-S Batteries. <i>ACS Nano</i> , 2021, 15, 13847-13856.	14.6	55
43	Diminishing Interfacial Turbulence by Colloid-Polymer Electrolyte to Stabilize Zinc Ion Flux for Deep-Cycling Zn Metal Batteries. <i>Advanced Materials</i> , 2022, 34, e2200131.	21.0	54
44	A new approach towards the synthesis of nitrogen-doped graphene/MnO <sub>2</sub> hybrids for ultralong cycle-life lithium ion batteries. <i>Journal of Materials Chemistry A</i> , 2015, 3, 6291-6296.	10.3	52
45	Oxidizing Vacancies in Nitrogen-Doped Carbon Enhance Air-Cathode Activity. <i>Advanced Materials</i> , 2019, 31, e1803339.	21.0	52
46	Lithium dendrite inhibition via 3D porous lithium metal anode accompanied by inherent SEI layer. <i>Energy Storage Materials</i> , 2020, 26, 385-390.	18.0	52
47	Nanomeses of highly crystalline nitrogen-doped carbon encapsulated Fe/Fe <sub>3</sub> C electrodes as ultrafast and stable anodes for Li-ion batteries. <i>Journal of Materials Chemistry A</i> , 2015, 3, 15008-15014.	10.3	51
48	Single-cluster Au as an usher for deeply cyclable Li metal anodes. <i>Journal of Materials Chemistry A</i> , 2019, 7, 14496-14503.	10.3	51
49	A functional-gradient-structured ultrahigh modulus solid polymer electrolyte for all-solid-state lithium metal batteries. <i>Journal of Materials Chemistry A</i> , 2019, 7, 24477-24485.	10.3	51
50	Toward safer solid-state lithium metal batteries: a review. <i>Nanoscale Advances</i> , 2020, 2, 1828-1836.	4.6	50
51	Bioinspired Polysulfiphobic Artificial Interphase Layer on Lithium Metal Anodes for Lithium Sulfur Batteries. <i>ACS Applied Materials &amp; Interfaces</i> , 2018, 10, 30058-30064.	8.0	49
52	Artificial Lithium Isopropyl-Sulfide Macromolecules as an Ion-Selective Interface for Long-Life Lithium-Sulfur Batteries. <i>ACS Applied Materials &amp; Interfaces</i> , 2020, 12, 54537-54544.	8.0	49
53	Unveiling the Essential Nature of Lewis Basicity in Thermodynamically and Dynamically Promoted Nitrogen Fixation. <i>Advanced Functional Materials</i> , 2020, 30, 2001244.	14.9	49
54	In situ polymerization of highly dispersed polypyrrole on reduced graphite oxide for dopamine detection. <i>Biosensors and Bioelectronics</i> , 2013, 50, 157-160.	10.1	48

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55	Greatly Improved Conductivity of Double-Chain Polymer Network Binder for High Sulfur Loading Lithium-Sulfur Batteries with a Low Electrolyte/Sulfur Ratio. <i>Small</i> , 2018, 14, e1801536.	10.0	47
56	Updating the Intrinsic Activity of a Single-Atom Site with a P=O Bond for a Rechargeable Zn-Air Battery. <i>ACS Applied Materials &amp; Interfaces</i> , 2019, 11, 33054-33061.	8.0	47
57	Selenium-Doped Carbon Nanosheets with Strong Electron Cloud Delocalization for Nondeposition of Metal Oxides on Air Cathode of Zinc-Air Battery. <i>ACS Applied Materials &amp; Interfaces</i> , 2019, 11, 20056-20063.	8.0	46
58	Pyridinic and graphitic nitrogen-enriched carbon paper as a highly active bifunctional catalyst for Zn-air batteries. <i>Electrochimica Acta</i> , 2020, 334, 135562.	5.2	45
59	Gold nanoparticles coated polystyrene/reduced graphite oxide microspheres with improved dispersibility and electrical conductivity for dopamine detection. <i>Colloids and Surfaces B: Biointerfaces</i> , 2013, 112, 310-314.	5.0	44
60	Active Fe Sites in Carbon Nanosheets as Oxygen Reduction Electrocatalyst for Flexible All-Solid-State Zinc-Air Batteries. <i>Advanced Sustainable Systems</i> , 2017, 1, 1700085.	5.3	43
61	Single lithium-ion channel polymer binder for stabilizing sulfur cathodes. <i>National Science Review</i> , 2020, 7, 315-323.	9.5	43
62	Single-atom scale metal vacancy engineering in heteroatom-doped carbon for rechargeable zinc-air battery with reduced overpotential. <i>Chemical Engineering Journal</i> , 2020, 393, 124702.	12.7	43
63	Stationary Full Li-Ion Batteries with Interlayer-Expanded V <sub>6</sub> O <sub>13</sub> Cathodes and Lithiated Graphite Anodes. <i>Electrochimica Acta</i> , 2016, 203, 171-177.	5.2	42
64	In Situ/Operando Spectroscopic Characterizations Guide the Compositional and Structural Design of Lithium-Sulfur Batteries. <i>Small Methods</i> , 2020, 4, 1900467.	8.6	42
65	In-situ observation as activity descriptor enables rational design of oxygen reduction catalyst for zinc-air battery. <i>Energy Storage Materials</i> , 2020, 27, 226-231.	18.0	42
66	Interfacial Microextraction Boosting Nitrogen Feed for Efficient Ambient Ammonia Synthesis in Aqueous Electrolyte. <i>Advanced Functional Materials</i> , 2022, 32, .	14.9	41
67	High coulombic efficiency and high-rate capability lithium sulfur batteries with low-solubility lithium polysulfides by using alkylene radicals to covalently connect sulfur. <i>Nano Energy</i> , 2017, 41, 758-764.	16.0	37
68	Half and full sodium-ion batteries based on maize with high-loading density and long-cycle life. <i>Nanoscale</i> , 2016, 8, 15497-15504.	5.6	35
69	High Coulombic efficiency cathode with nitril grafted sulfur for Li-S battery. <i>Energy Storage Materials</i> , 2019, 17, 260-265.	18.0	35
70	A facile, controllable fabrication of polystyrene/graphene core-shell microspheres and its application in high-performance electrocatalysis. <i>Chemical Communications</i> , 2012, 48, 7997.	4.1	34
71	Highly Flexible Full Lithium Batteries with Self-Knitted $\delta$ -MnO <sub>2</sub> Fabric Foam. <i>ACS Applied Materials &amp; Interfaces</i> , 2015, 7, 25298-25305.	8.0	34
72	Stabilized Lithium-Sulfur Batteries by Covalently Binding Sulfur onto the Thiol-Terminated Polymeric Matrices. <i>Small</i> , 2017, 13, 1702104.	10.0	34

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73	Super lithiophilic SEI derived from quinones electrolyte to guide Li uniform deposition. Energy Storage Materials, 2020, 24, 426-431.	18.0	34
74	Atomic Metal Vacancy Modulation of Single-Atom Dispersed Co/N/C for Highly Efficient and Stable Air Cathode. ACS Applied Materials & Interfaces, 2020, 12, 15298-15304.	8.0	33
75	On-chip supercapacitors with ultrahigh volumetric performance based on electrochemically co-deposited CuO/polypyrrole nanosheet arrays. Nanotechnology, 2015, 26, 425402.	2.6	30
76	Insight into the reaction mechanism of sulfur chains adjustable polymer cathode for high-loading lithium-organosulfur batteries. Journal of Energy Chemistry, 2021, 56, 238-244.	12.9	28
77	Low-temperature Li-S batteries enabled by all amorphous conversion process of organosulfur cathode. Journal of Energy Chemistry, 2022, 64, 496-502.	12.9	28
78	Processing robust lithium metal anode for high-security batteries: A minireview. Energy Storage Materials, 2022, 47, 122-133.	18.0	28
79	Interface Engineering of Silver-Based Heterostructures for CO <sub>2</sub> Reduction Reaction. ACS Applied Materials & Interfaces, 2020, 12, 56642-56649.	8.0	27
80	Oxygen-vacancy-rich nickel hydroxide nanosheet: a multifunctional layer between Ir and Si toward enhanced solar hydrogen production in alkaline media. Energy and Environmental Science, 2022, 15, 3051-3061.	30.8	27
81	Heat resistance and surface properties of polyester resin modified with fluorosilicone. Surface and Coatings Technology, 2016, 304, 31-39.	4.8	26
82	Dendrite-free and Ultra-High energy lithium sulfur battery enabled by dimethyl polysulfide intermediates. Energy Storage Materials, 2020, 24, 265-271.	18.0	26
83	Rapid leakage responsive and self-healing Li-metal batteries. Chemical Engineering Journal, 2021, 404, 126470.	12.7	26
84	Healable supramolecular phase change polymers for thermal energy harvesting and storage. Chemical Engineering Journal, 2022, 433, 134549.	12.7	22
85	Healable Lithium Alloy Anode with Ultrahigh Capacity. Nano Letters, 2021, 21, 5021-5027.	9.1	21
86	Novel triphenylamine-based fluorescent probe for specific detection and bioimaging of OCl <sup>-</sup> . Tetrahedron, 2018, 74, 5733-5738.	1.9	20
87	Interfacial engineering of carbon-based materials for efficient electrocatalysis: Recent advances and future. EnergyChem, 2022, 4, 100074.	19.1	20
88	Half-cell and full-cell applications of horizontally aligned reduced oxide graphene/V <sub>2</sub> O <sub>5</sub> sheets as cathodes for high stability lithium-ion batteries. RSC Advances, 2016, 6, 98581-98587.	3.6	19
89	Confined silicon nanospheres by biomass lignin for stable lithium ion battery. Nanotechnology, 2017, 28, 405401.	2.6	19
90	Cationic Covalent Organic Framework with Ultralow HOMO Energy Used as Scaffolds for 5.2 V Solid Polycarbonate Electrolytes. Advanced Science, 2022, 9, .	11.2	19

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91	Functional-selected LiF-intercalated-graphene enabling ultra-stable lithium sulfur battery. <i>Journal of Energy Chemistry</i> , 2021, 58, 78-84.	12.9	17
92	Efficient solar domestic and industrial sewage purification via polymer wastewater collector. <i>Chemical Engineering Journal</i> , 2022, 428, 131199.	12.7	16
93	Molecular Simulations Guided Polymer Electrolyte towards Superior Low-Temperature Solid Lithium-Metal Batteries. <i>ACS Applied Materials &amp; Interfaces</i> , 2021, 13, 48810-48817.	8.0	16
94	In situ evolved NiMo/NiMoO <sub>4</sub> nanorods as a bifunctional catalyst for overall water splitting. <i>Nanotechnology</i> , 2020, 31, 495404.	2.6	14
95	Recent advances in material design and reactor engineering for electrocatalytic ambient nitrogen fixation. <i>Materials Chemistry Frontiers</i> , 2022, 6, 843-879.	5.9	14
96	Surpassing the Redox Potential Limit of Organic Cathode Materials via Extended $\pi$ -Conjugation of Dioxin. <i>Nano Letters</i> , 2022, 22, 3473-3479.	9.1	14
97	Supercapacitors based on highly dispersed polypyrrole-reduced graphene oxide composite with a folded surface. <i>Applied Physics A: Materials Science and Processing</i> , 2015, 120, 693-698.	2.3	13
98	Ordered lithium ion channels of covalent organic frameworks with lithiophilic groups enable uniform and efficient Li plating/stripping. <i>Journal of Energy Chemistry</i> , 2021, 61, 135-140.	12.9	13
99	A Lewis acidity adjustable organic ammonium cation derived robust protecting shield for stable aqueous zinc-ion batteries by inhibiting the tip effect. <i>Materials Chemistry Frontiers</i> , 2022, 6, 901-907.	5.9	13
100	New Type of Dynamically "Solid" Liquid Interconvertible Electrolyte for High-Rate Zn Metal Battery. <i>Nano Letters</i> , 2022, 22, 2898-2906.	9.1	13
101	Porous yolk-shell microspheres as N-doped carbon matrix for motivating the oxygen reduction activity of oxygen evolution oriented materials. <i>Nanotechnology</i> , 2017, 28, 365403.	2.6	10
102	Polynorbornene-based bottlebrush polymers confining phase change materials for ultra-stable latent heat storage derived from solar irradiation. <i>Solar Energy Materials and Solar Cells</i> , 2022, 236, 111547.	6.2	10
103	Suppressing Surface Lattice Oxygen Evolution by Fluorinated Graphene-Scaffolded Lithium-Rich Manganese-Based Cathode for Enhanced Stability. <i>Energy Storage Materials</i> , 2022, 49, 555-563.	18.0	10
104	Identifying the Lewis Base Chemistry in Preventing the Deposition of Metal Oxides on Ketone-Enriched Carbon Cathodes for Highly Durable Metal-Air Batteries. <i>ACS Applied Materials &amp; Interfaces</i> , 2020, 12, 3603-3609.	8.0	9
105	Stabilizing cathodes of lithium-sulfur batteries by the chemical binding of sulfur and their discharge products to carbon nanofibers. <i>New Journal of Chemistry</i> , 2019, 43, 15267-15274.	2.8	7
106	Nanosensors Based on Structural Memory Carbon Nanodots for Ag <sup>+</sup> Fluorescence Determination. <i>Nanomaterials</i> , 2021, 11, 2687.	4.1	7
107	The current status of sodium metal anodes for improved sodium batteries and its future perspectives. <i>APL Materials</i> , 2022, 10, .	5.1	7
108	Form-stable phase change materials based on polyolefin elastomer and octadecylamine-functionalized graphene for thermal energy storage. <i>Nanotechnology</i> , 2020, 31, 245402.	2.6	6

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109	Enhanced utilization of active sites of Fe/N/C catalysts by pore-in-pore structures for ultrahigh mass activity. <i>Nanotechnology</i> , 2020, 31, 315401.	2.6	6
110	Highly efficient lithium utilization in lithium metal full-cell by simulated missile guidance and confinement systems. <i>Science China Materials</i> , 2021, 64, 830-839.	6.3	6
111	Bifunctional effect of Bi(OH) <sub>3</sub> on the PdBi surface as interfacial Brønsted base enables ethanol electro-oxidation. <i>Journal of Colloid and Interface Science</i> , 2022, 611, 327-335.	9.4	5
112	Strongly trapping soluble lithium polysulfides using polar cysteamine groups for highly stable lithium sulfur batteries. <i>Nanotechnology</i> , 2020, 31, 485403.	2.6	4
113	Eliminating Stubborn Insulated Deposition by Coordination Effect to Boost Zn Electrode Reversibility in Aqueous Electrolyte. <i>Frontiers in Chemistry</i> , 2022, 10, 851973.	3.6	4
114	Batteries: Selenium-Doped Cathodes for Lithium-Organosulfur Batteries with Greatly Improved Volumetric Capacity and Coulombic Efficiency ( <i>Adv. Mater.</i> 33/2017). <i>Advanced Materials</i> , 2017, 29, .	21.0	1
115	Wiping off oxygen bonding to maximize heteroatom-induced improvement in oxygen reaction activity of metal site for high-performance zinc-air battery. <i>Nanotechnology</i> , 2020, 31, 195403.	2.6	1