

# Rui Cai

## List of Publications by Year in descending order

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36  
papers

1,524  
citations

304743

22  
h-index

361022

35  
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36  
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36  
docs citations

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times ranked

2248  
citing authors

#	ARTICLE	IF	CITATIONS
1	Binder-free $\pm$ -MoO <sub>3</sub> nanobelt electrode for lithium-ion batteries utilizing van der Waals forces for film formation and connection with current collector. <i>Journal of Materials Chemistry A</i> , 2013, 1, 4736.	10.3	142
2	Nitrogen- and TiN-modified Li <sub>4</sub> Ti <sub>5</sub> O <sub>12</sub> : one-step synthesis and electrochemical performance optimization. <i>Journal of Materials Chemistry</i> , 2012, 22, 17773.	6.7	112
3	Trapping sulfur in hierarchically porous, hollow indented carbon spheres: a high-performance cathode for lithium-sulfur batteries. <i>Journal of Materials Chemistry A</i> , 2016, 4, 9526-9535.	10.3	100
4	Smart Construction of an Intimate Lithium   Garnet Interface for All-Solid-State Batteries by Tuning the Tension of Molten Lithium. <i>Advanced Functional Materials</i> , 2021, 31, 2101556.	14.9	97
5	Different Effect of the Atmospheres on the Phase Formation and Performance of Li <sub>4</sub> Ti <sub>5</sub> O <sub>12</sub> Prepared from Ball-Milling-Assisted Solid-Phase Reaction with Pristine and Carbon-Precoated TiO <sub>2</sub> as Starting Materials. <i>Journal of Physical Chemistry C</i> , 2011, 115, 4943-4952.	3.1	84
6	Mesoporous and Nanostructured TiO <sub>2</sub> layer with Ultra-High Loading on Nitrogen-Doped Carbon Foams as Flexible and Free-Standing Electrodes for Lithium-Ion Batteries. <i>Small</i> , 2016, 12, 6724-6734.	10.0	79
7	A 3D porous architecture composed of TiO <sub>2</sub> nanotubes connected with a carbon nanofiber matrix for fast energy storage. <i>Journal of Materials Chemistry A</i> , 2013, 1, 12310.	10.3	75
8	Electrospinning based fabrication and performance improvement of film electrodes for lithium-ion batteries composed of TiO <sub>2</sub> hollow fibers. <i>Journal of Materials Chemistry</i> , 2011, 21, 15041.	6.7	68
9	A novel method to enhance rate performance of an Al-doped Li <sub>4</sub> Ti <sub>5</sub> O <sub>12</sub> electrode by post-synthesis treatment in liquid formaldehyde at room temperature. <i>Journal of Materials Chemistry</i> , 2012, 22, 8013.	6.7	67
10	Synthesis of well-crystallized Li <sub>4</sub> Ti <sub>5</sub> O <sub>12</sub> nanoplates for lithium-ion batteries with outstanding rate capability and cycling stability. <i>Journal of Materials Chemistry A</i> , 2013, 1, 13233.	10.3	67
11	The solid-state chelation synthesis of LiNi <sub>1/3</sub> Co <sub>1/3</sub> Mn <sub>1/3</sub> O <sub>2</sub> as a cathode material for lithium-ion batteries. <i>Journal of Materials Chemistry A</i> , 2015, 3, 10536-10544.	10.3	66
12	Combustion-derived nanocrystalline LiMn <sub>2</sub> O <sub>4</sub> as a promising cathode material for lithium-ion batteries. <i>Journal of Power Sources</i> , 2015, 275, 38-44.	7.8	58
13	Solution combustion synthesis of high-rate performance carbon-coated lithium iron phosphate from inexpensive iron (<sc>iii</sc>) raw material. <i>Journal of Materials Chemistry</i> , 2012, 22, 2900-2907.	6.7	54
14	Realizing fourfold enhancement in conductivity of perovskite Li <sub>0.33</sub> La <sub>0.55</sub> Ti <sub>0.3</sub> O <sub>3</sub> electrolyte membrane via a Sr and Ta co-doping strategy. <i>Journal of Membrane Science</i> , 2019, 582, 194-202.	8.2	51
15	Rational design of strontium antimony co-doped Li <sub>7</sub> La <sub>3</sub> Zr <sub>2</sub> O <sub>12</sub> electrolyte membrane for solid-state lithium batteries. <i>Journal of Alloys and Compounds</i> , 2019, 794, 347-357.	5.5	42
16	A Self-Assembled Hetero-Structured Inverse-Spinel and Anti-Perovskite Nanocomposite for Ultrafast Water Oxidation. <i>Small</i> , 2020, 16, e2002089.	10.0	40
17	A simple strategy that may effectively tackle the anode-electrolyte interface issues in solid-state lithium metal batteries. <i>Chemical Engineering Journal</i> , 2022, 427, 131001.	12.7	38
18	Analytical model of Li-ion diffusion-induced stress in nanowire and negative Poisson's ratio electrode under different operations. <i>International Journal of Mechanical Sciences</i> , 2018, 141, 245-261.	6.7	35

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19	Optimal synthesis and new understanding of P2-type Na <sub>2/3</sub> Mn <sub>1/2</sub> Fe <sub>1/4</sub> Co <sub>1/4</sub> O <sub>2</sub> as an advanced cathode material in sodium-ion batteries with improved cycle stability. <i>Ceramics International</i> , 2018, 44, 5184-5192.	4.8	34
20	Preparation and re-examination of Li <sub>4</sub> Ti <sub>4.85</sub> Al <sub>0.15</sub> O <sub>12</sub> as anode material of lithium-ion battery. <i>International Journal of Energy Research</i> , 2011, 35, 68-77.	4.5	32
21	A freestanding composite film electrode stacked from hierarchical electrospun SnO <sub>2</sub> nanorods and graphene sheets for reversible lithium storage. <i>RSC Advances</i> , 2014, 4, 9367-9371.	3.6	26
22	Comparative Study on Constitutive Modeling of Tantalum and Tantalum Tungsten Alloy. <i>Journal of Iron and Steel Research International</i> , 2006, 13, 68-74.	2.8	25
23	Analytical model for crack propagation in spherical nano electrodes of lithium-ion batteries. <i>Electrochimica Acta</i> , 2016, 210, 7-14.	5.2	22
24	Two-Step Fabrication of Li <sub>4</sub> Ti <sub>5</sub> O <sub>12</sub> -Coated Carbon Nanofibers as a Flexible Film Electrode for High-Power Lithium-Ion Batteries. <i>ChemElectroChem</i> , 2017, 4, 2286-2292.	3.4	21
25	Process Investigation of a Solid Carbon-Fueled Solid Oxide Fuel Cell Integrated with a CO <sub>2</sub> -Permeating Membrane and a Sintering-Resistant Reverse Boudouard Reaction Catalyst. <i>Energy &amp; Fuels</i> , 2016, 30, 1841-1848.	5.1	16
26	Low Ca <sup>2+</sup> concentration doping enhances the mechanical properties and ionic conductivity of Na <sub>3</sub> PS <sub>4</sub> superionic conductors based on first-principles. <i>Physical Chemistry Chemical Physics</i> , 2020, 22, 19816-19822.	2.8	14
27	An analytical model for the fracture behavior in hollow cylindrical anodes. <i>International Journal of Mechanical Sciences</i> , 2019, 157-158, 87-97.	6.7	13
28	Modeling of the ratcheting behavior in flexible electrodes during cyclic deformation. <i>Journal of Power Sources</i> , 2020, 446, 227353.	7.8	11
29	Optimization of SnO <sub>2</sub> Nanoparticles Confined in a Carbon Matrix towards Applications as High-Capacity Anodes in Sodium-Ion Batteries. <i>ChemistrySelect</i> , 2018, 3, 4015-4022.	1.5	10
30	A comparative study on ratcheting deformation between negative Poisson's ratio electrode and thin film electrode in Li-ion battery cyclic operation. <i>Mechanics of Materials</i> , 2020, 150, 103567.	3.2	8
31	Theoretical analysis of the mechanical behavior in Li-ion battery cylindrical electrodes with phase transformation. <i>Acta Mechanica</i> , 2020, 231, 1045-1062.	2.1	6
32	Coupling chemo-mechanical model for smart structured electrode with great mechanical long life and electrochemical performance. <i>International Journal of Solids and Structures</i> , 2021, 233, 111179.	2.7	4
33	A new lithium-rich layer-structured cathode material with improved electrochemical performance and voltage maintenance. <i>International Journal of Energy Research</i> , 2019, 43, 7547.	4.5	3
34	Chemo-mechanical analysis of ratcheting deformation in silicon particle electrode under cyclic charging and discharging. <i>Mechanics of Materials</i> , 2021, 162, 104062.	3.2	3
35	Free-standing nitrogen doped V-O-C nanofiber film as promising electrode for flexible lithium-ion batteries. <i>RSC Advances</i> , 2014, 4, 51062-51066.	3.6	1
36	Lithium-Ion Batteries: Mesoporous and Nanostructured TiO <sub>2</sub> layer with Ultra-High Loading on Nitrogen-Doped Carbon Foams as Flexible and Free-Standing Electrodes for Lithium-Ion Batteries (Small 48/2016). <i>Small</i> , 2016, 12, 6768-6768.	10.0	0