# **Zm Wang**

#### List of Publications by Citations

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| #   | Paper   | IF           | Citations |
|-----|---|--------------|-----------|
| 472 | Recent advances in micro-/nano-structured hollow spheres for energy applications: From simple to complex systems. <i>Energy and Environmental Science</i> , <b>2012</b> , 5, 5604-5618                                  | 35.4         | 996       |
| 471 | Synthesis, Properties, and Applications of Hollow Micro-/Nanostructures. <i>Chemical Reviews</i> , <b>2016</b> , 116, 10983-1060  | 68.1         | 996       |
| 470 | Formation of nickel cobalt sulfide ball-in-ball hollow spheres with enhanced electrochemical pseudocapacitive properties. <i>Nature Communications</i> , <b>2015</b> , 6, 6694  | 17.4         | 941       |
| 469 | Designed Formation of CoDINiCoDIDouble-Shelled Nanocages with Enhanced Pseudocapacitive and Electrocatalytic Properties. <i>Journal of the American Chemical Society</i> , <b>2015</b> , 137, 5590-5                    | 16.4         | 880       |
| 468 | Confining sulfur in double-shelled hollow carbon spheres for lithium-sulfur batteries. <i>Angewandte Chemie - International Edition</i> , <b>2012</b> , 51, 9592-5  | 16.4         | 625       |
| 467 | Self-templated formation of uniform NiCo2O4 hollow spheres with complex interior structures for lithium-ion batteries and supercapacitors. <i>Angewandte Chemie - International Edition</i> , <b>2015</b> , 54, 1868-72 | 16.4         | 618       |
| 466 | Double-shelled CoMn2O4 hollow microcubes as high-capacity anodes for lithium-ion batteries. <i>Advanced Materials</i> , <b>2012</b> , 24, 745-8   | 24           | 618       |
| 465 | Synthesis and Lithium Storage Properties of Co3O4 Nanosheet-Assembled Multishelled Hollow Spheres. <i>Advanced Functional Materials</i> , <b>2010</b> , 20, 1680-1686   | 15.6         | 615       |
| 464 | ⊞e2O3 multi-shelled hollow microspheres for lithium ion battery anodes with superior capacity and charge retention. <i>Energy and Environmental Science</i> , <b>2014</b> , 7, 632-637                                  | 35.4         | 582       |
| 463 | Accurate control of multishelled Co3O4 hollow microspheres as high-performance anode materials in lithium-ion batteries. <i>Angewandte Chemie - International Edition</i> , <b>2013</b> , 52, 6417-20                   | 16.4         | 580       |
| 462 | Hollow Micro/Nanomaterials with Multilevel Interior Structures. Advanced Materials, 2009, 21, 3621-363  | 3 <b>8</b> 4 | 571       |
| 461 | Symmetric and asymmetric Ostwald ripening in the fabrication of homogeneous core-shell semiconductors. <i>Small</i> , <b>2005</b> , 1, 566-71   | 11           | 563       |
| 460 | Metal Sulfide Hollow Nanostructures for Electrochemical Energy Storage. <i>Advanced Energy Materials</i> , <b>2016</b> , 6, 1501333   | 21.8         | 563       |
| 459 | Formation of ZnMn2O4 ball-in-ball hollow microspheres as a high-performance anode for lithium-ion batteries. <i>Advanced Materials</i> , <b>2012</b> , 24, 4609-13  | 24           | 557       |
| 458 | Multi-shelled hollow micro-/nanostructures. <i>Chemical Society Reviews</i> , <b>2015</b> , 44, 6749-73   | 58.5         | 540       |
| 457 | Complex Hollow Nanostructures: Synthesis and Energy-Related Applications. <i>Advanced Materials</i> , <b>2017</b> , 29, 1604563   | 24           | 529       |
| 456 | TiO2-Coated Multilayered SnO2 Hollow Microspheres for Dye-Sensitized Solar Cells. <i>Advanced Materials</i> , <b>2009</b> , 21, 3663-3667   | 24           | 512       |

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| 455 | Rational designs and engineering of hollow micro-/nanostructures as sulfur hosts for advanced lithiumBulfur batteries. <i>Energy and Environmental Science</i> , <b>2016</b> , 9, 3061-3070  | 35.4 | 502 |
|-----|--|------|-----|
| 454 | One-Pot Synthesis and Hierarchical Assembly of Hollow Cu2O Microspheres with Nanocrystals-Composed Porous Multishell and Their Gas-Sensing Properties. <i>Advanced Functional Materials</i> , <b>2007</b> , 17, 2766-2771                              | 15.6 | 481 |
| 453 | General synthesis and gas-sensing properties of multiple-shell metal oxide hollow microspheres. <i>Angewandte Chemie - International Edition</i> , <b>2011</b> , 50, 2738-41   | 16.4 | 473 |
| 452 | Metal-organic-frameworks-derived general formation of hollow structures with high complexity.<br>Journal of the American Chemical Society, <b>2013</b> , 135, 10664-72   | 16.4 | 464 |
| 451 | Accurate control of multishelled ZnO hollow microspheres for dye-sensitized solar cells with high efficiency. <i>Advanced Materials</i> , <b>2012</b> , 24, 1046-9   | 24   | 457 |
| 450 | Formation of Onion-Like NiCo S Particles via Sequential Ion-Exchange for Hybrid Supercapacitors. <i>Advanced Materials</i> , <b>2017</b> , 29, 1605051   | 24   | 453 |
| 449 | Double-Shelled Nanocages with Cobalt Hydroxide Inner Shell and Layered Double Hydroxides Outer Shell as High-Efficiency Polysulfide Mediator for Lithium-Sulfur Batteries. <i>Angewandte Chemie - International Edition</i> , <b>2016</b> , 55, 3982-6 | 16.4 | 447 |
| 448 | Template synthesis of multishelled Cu2O hollow spheres with a single-crystalline shell wall. <i>Angewandte Chemie - International Edition</i> , <b>2007</b> , 46, 1489-92  | 16.4 | 445 |
| 447 | Metalbrganic-framework-engaged formation of Co nanoparticle-embedded carbon@Co9S8 double-shelled nanocages for efficient oxygen reduction. <i>Energy and Environmental Science</i> , <b>2016</b> , 9, 107-111  | 35.4 | 427 |
| 446 | Intricate Hollow Structures: Controlled Synthesis and Applications in Energy Storage and Conversion. <i>Advanced Materials</i> , <b>2017</b> , 29, 1602914   | 24   | 424 |
| 445 | Nanostructured Conversion-type Anode Materials for Advanced Lithium-Ion Batteries. <i>CheM</i> , <b>2018</b> , 4, 972-996  | 16.2 | 410 |
| 444 | Construction of Complex CoS Hollow Structures with Enhanced Electrochemical Properties for Hybrid Supercapacitors. <i>CheM</i> , <b>2016</b> , 1, 102-113  | 16.2 | 406 |
| 443 | Dual-Confined Flexible Sulfur Cathodes Encapsulated in Nitrogen-Doped Double-Shelled Hollow Carbon Spheres and Wrapped with Graphene for LiB Batteries. <i>Advanced Energy Materials</i> , <b>2015</b> , 5, 1402                                       | 2263 | 402 |
| 442 | Preparation of SnO2/Carbon Composite Hollow Spheres and Their Lithium Storage Properties. <i>Chemistry of Materials</i> , <b>2008</b> , 20, 6562-6566  | 9.6  | 393 |
| 441 | Multishelled TiO2 hollow microspheres as anodes with superior reversible capacity for lithium ion batteries. <i>Nano Letters</i> , <b>2014</b> , 14, 6679-84   | 11.5 | 366 |
| 440 | MS2 (M = Co and Ni) Hollow Spheres with Tunable Interiors for High-Performance Supercapacitors and Photovoltaics. <i>Advanced Functional Materials</i> , <b>2014</b> , 24, 2155-2162   | 15.6 | 362 |
| 439 | One-pot facile synthesis of double-shelled SnOlyolk-shell-structured powders by continuous process as anode materials for Li-ion batteries. <i>Advanced Materials</i> , <b>2013</b> , 25, 2279-83, 2250  | 24   | 357 |
| 438 | Self-Templated Formation of Hollow Structures for Electrochemical Energy Applications. <i>Accounts of Chemical Research</i> , <b>2017</b> , 50, 293-301  | 24.3 | 336 |

| 437 | Formation of Double-Shelled Zinc-Cobalt Sulfide Dodecahedral Cages from Bimetallic Zeolitic Imidazolate Frameworks for Hybrid Supercapacitors. <i>Angewandte Chemie - International Edition</i> , <b>2017</b> , 56, 7141-7145                | 16.4 | 326 |
|-----|--|------|-----|
| 436 | Recent Developments on and Prospects for Electrode Materials with Hierarchical Structures for Lithium-Ion Batteries. <i>Advanced Energy Materials</i> , <b>2018</b> , 8, 1701415   | 21.8 | 321 |
| 435 | SnO2 hollow structures and TiO2 nanosheets for lithium-ion batteries. <i>Journal of Materials Chemistry</i> , <b>2011</b> , 21, 9912   |      | 308 |
| 434 | New Nanoconfined Galvanic Replacement Synthesis of Hollow Sb@C Yolk-Shell Spheres Constituting a Stable Anode for High-Rate Li/Na-Ion Batteries. <i>Nano Letters</i> , <b>2017</b> , 17, 2034-2042   | 11.5 | 306 |
| 433 | Multi-shelled metal oxides prepared via an anion-adsorption mechanism for lithium-ion batteries. <i>Nature Energy</i> , <b>2016</b> , 1,   | 62.3 | 304 |
| 432 | Metal organic frameworks-derived Co3O4 hollow dodecahedrons with controllable interiors as outstanding anodes for Li storage. <i>Journal of Materials Chemistry A</i> , <b>2014</b> , 2, 12194-12200   | 13   | 304 |
| 431 | Recent developments in the chemical synthesis of inorganic porous capsules. <i>Journal of Materials Chemistry</i> , <b>2009</b> , 19, 6073   |      | 303 |
| 430 | Coordination Polymers Derived General Synthesis of Multishelled Mixed Metal-Oxide Particles for Hybrid Supercapacitors. <i>Advanced Materials</i> , <b>2017</b> , 29, 1605902  | 24   | 296 |
| 429 | Multilayer CuO@NiO Hollow Spheres: Microwave-Assisted Metal-Organic-Framework Derivation and Highly Reversible Structure-Matched Stepwise Lithium Storage. <i>ACS Nano</i> , <b>2015</b> , 9, 11462-71                                       | 16.7 | 290 |
| 428 | Thylakoid-Inspired Multishell g-CN Nanocapsules with Enhanced Visible-Light Harvesting and Electron Transfer Properties for High-Efficiency Photocatalysis. <i>ACS Nano</i> , <b>2017</b> , 11, 1103-1112                                    | 16.7 | 289 |
| 427 | Necklace-like Multishelled Hollow Spinel Oxides with Oxygen Vacancies for Efficient Water Electrolysis. <i>Journal of the American Chemical Society</i> , <b>2018</b> , 140, 13644-13653   | 16.4 | 288 |
| 426 | Metal-Organic Framework Hybrid-Assisted Formation of Co O /Co-Fe Oxide Double-Shelled Nanoboxes for Enhanced Oxygen Evolution. <i>Advanced Materials</i> , <b>2018</b> , 30, e1801211  | 24   | 287 |
| 425 | Shell-by-shell synthesis of tin oxide hollow colloids with nanoarchitectured walls: cavity size tuning and functionalization. <i>Small</i> , <b>2007</b> , 3, 261-5  | 11   | 269 |
| 424 | Hydrothermal etching assisted crystallization: a facile route to functional yolk-shell titanate microspheres with ultrathin nanosheets-assembled double shells. <i>Journal of the American Chemical Society</i> , <b>2011</b> , 133, 15830-3 | 16.4 | 268 |
| 423 | Quintuple-shelled SnO(2) hollow microspheres with superior light scattering for high-performance dye-sensitized solar cells. <i>Advanced Materials</i> , <b>2014</b> , 26, 905-9   | 24   | 260 |
| 422 | General Formation of MS (M = Ni, Cu, Mn) Box-in-Box Hollow Structures with Enhanced Pseudocapacitive Properties. <i>Advanced Functional Materials</i> , <b>2014</b> , 24, 7440-7446  | 15.6 | 260 |
| 421 | Hollow Functional Materials Derived from Metal-Organic Frameworks: Synthetic Strategies, Conversion Mechanisms, and Electrochemical Applications. <i>Advanced Materials</i> , <b>2019</b> , 31, e1804903                                     | 24   | 248 |
| 420 | Template-free synthesis of VO2 hollow microspheres with various interiors and their conversion into V2O5 for lithium-ion batteries. <i>Angewandte Chemie - International Edition</i> , <b>2013</b> , 52, 2226-30                             | 16.4 | 244 |

| 419 | Multi-shelled CeOlhollow microspheres as superior photocatalysts for water oxidation. <i>Nanoscale</i> , <b>2014</b> , 6, 4072-7  | 7.7   | 226 |
|-----|---|-------|-----|
| 418 | Engineering nonspherical hollow structures with complex interiors by template-engaged redox etching. <i>Journal of the American Chemical Society</i> , <b>2010</b> , 132, 16271-7   | 16.4  | 223 |
| 417 | General Synthesis of Multishell Mixed-Metal Oxyphosphide Particles with Enhanced Electrocatalytic Activity in the Oxygen Evolution Reaction. <i>Angewandte Chemie - International Edition</i> , <b>2017</b> , 56, 2386-2389 | 16.4  | 222 |
| 416 | The Design and Synthesis of Hollow Micro-/Nanostructures: Present and Future Trends. <i>Advanced Materials</i> , <b>2018</b> , 30, e1800939   | 24    | 218 |
| 415 | Construction of Complex Co O @Co V O Hollow Structures from Metal-Organic Frameworks with Enhanced Lithium Storage Properties. <i>Advanced Materials</i> , <b>2018</b> , 30, 1702875  | 24    | 213 |
| 414 | Double-Walled SnO2 Nano-Cocoons with Movable Magnetic Cores. <i>Advanced Materials</i> , <b>2007</b> , 19, 3328-3   | 33,42 | 212 |
| 413 | Formation of Fe3O4@MnO2 ball-in-ball hollow spheres as a high performance catalyst with enhanced catalytic performances. <i>Journal of Materials Chemistry A</i> , <b>2016</b> , 4, 1414-1422                               | 13    | 211 |
| 412 | ZnO hollow spheres with double-yolk egg structure for high-performance photocatalysts and photodetectors. <i>Advanced Materials</i> , <b>2012</b> , 24, 3421-5  | 24    | 211 |
| 411 | Controllable preparation of multishelled NiO hollow nanospheres via layer-by-layer self-assembly for supercapacitor application. <i>Journal of Power Sources</i> , <b>2014</b> , 246, 24-31                                 | 8.9   | 205 |
| 410 | Hollow Multi-Shelled Structures of CoO Dodecahedron with Unique Crystal Orientation for Enhanced Photocatalytic CO Reduction. <i>Journal of the American Chemical Society</i> , <b>2019</b> , 141, 2238-2241                | 16.4  | 205 |
| 409 | General synthesis of multi-shelled mixed metal oxide hollow spheres with superior lithium storage properties. <i>Angewandte Chemie - International Edition</i> , <b>2014</b> , 53, 9041-4                                   | 16.4  | 204 |
| 408 | General Synthesis of Homogeneous Hollow CoreBhell Ferrite Microspheres. <i>Journal of Physical Chemistry C</i> , <b>2009</b> , 113, 2792-2797   | 3.8   | 203 |
| 407 | Controlling the Compositional Chemistry in Single Nanoparticles for Functional Hollow Carbon Nanospheres. <i>Journal of the American Chemical Society</i> , <b>2017</b> , 139, 13492-13498                                  | 16.4  | 202 |
| 406 | A facile vesicle template route to multi-shelled mesoporous silica hollow nanospheres. <i>Journal of Materials Chemistry</i> , <b>2010</b> , 20, 4595   |       | 199 |
| 405 | Design of highly stable and selective core/yolkEhell nanocatalysts Areview. <i>Applied Catalysis B: Environmental</i> , <b>2016</b> , 188, 324-341  | 21.8  | 196 |
| 404 | A Facile Multi-interface Transformation Approach to Monodisperse Multiple-Shelled Periodic Mesoporous Organosilica Hollow Spheres. <i>Journal of the American Chemical Society</i> , <b>2015</b> , 137, 7935-44             | 16.4  | 195 |
| 403 | Design of Heterostructured Hollow Photocatalysts for Solar-to-Chemical Energy Conversion. <i>Advanced Materials</i> , <b>2019</b> , 31, e1900281  | 24    | 191 |
| 402 | Multi-shelled Hollow Metal-Organic Frameworks. <i>Angewandte Chemie - International Edition</i> , <b>2017</b> , 56, 5512-5516   | 16.4  | 188 |

| 401 | Soft template synthesis of yolk/silica shell particles. <i>Advanced Materials</i> , <b>2010</b> , 22, 1516-20   | 24                                | 186 |
|-----|---|-----------------------------------|-----|
| 400 | In Situ Self-Template Synthesis of Fe-N-Doped Double-Shelled Hollow Carbon Microspheres for Oxygen Reduction Reaction. <i>ACS Nano</i> , <b>2018</b> , 12, 208-216  | 16.7                              | 180 |
| 399 | Multilayered Nanocrystalline SnO2 Hollow Microspheres Synthesized by Chemically Induced Self-Assembly in the Hydrothermal Environment. <i>Journal of Physical Chemistry C</i> , <b>2007</b> , 111, 14067-1407                                 | ,3.8                              | 179 |
| 398 | Cheap and scalable synthesis of Fe2O3 multi-shelled hollow spheres as high-performance anode materials for lithium ion batteries. <i>Chemical Communications</i> , <b>2013</b> , 49, 8695-7   | 5.8                               | 178 |
| 397 | A templated method to Bi2WO6 hollow microspheres and their conversion to double-shell Bi2O3/Bi2WO6 hollow microspheres with improved photocatalytic performance. <i>Inorganic Chemistry</i> , <b>2012</b> , 51, 6245-50                       | 5.1                               | 172 |
| 396 | MetalBrganic framework-derived CoSe2/(NiCo)Se2 box-in-box hollow nanocubes with enhanced electrochemical properties for sodium-ion storage and hydrogen evolution. <i>Journal of Materials Chemistry A</i> , <b>2017</b> , 5, 18823-18830     | 13                                | 171 |
| 395 | Rational design of yolk-shell nanostructures for photocatalysis. <i>Chemical Society Reviews</i> , <b>2019</b> , 48, 1874   | 4 <sub>5</sub> 89 <sub>5</sub> 07 | 171 |
| 394 | Facile Synthesis of Multi-shelled ZnS-CdS Cages with Enhanced Photoelectrochemical Performance for Solar Energy Conversion. <i>CheM</i> , <b>2018</b> , 4, 162-173  | 16.2                              | 170 |
| 393 | Metal oxide hollow nanostructures: Fabrication and Li storage performance. <i>Journal of Power Sources</i> , <b>2013</b> , 238, 376-387   | 8.9                               | 163 |
| 392 | Core-shell yolk-shell Si@C@Void@C nanohybrids as advanced lithium ion battery anodes with good electronic conductivity and corrosion resistance. <i>Journal of Power Sources</i> , <b>2017</b> , 342, 529-536                                 | 8.9                               | 160 |
| 391 | Serial ionic exchange for the synthesis of multishelled copper sulfide hollow spheres. <i>Angewandte Chemie - International Edition</i> , <b>2012</b> , 51, 949-52  | 16.4                              | 158 |
| 390 | Multi-shelled hollow micro-/nanostructures: promising platforms for lithium-ion batteries. <i>Materials Chemistry Frontiers</i> , <b>2017</b> , 1, 414-430  | 7.8                               | 157 |
| 389 | Revitalized interest in vanadium pentoxide as cathode material for lithium-ion batteries and beyond. <i>Energy Storage Materials</i> , <b>2018</b> , 11, 205-259  | 19.4                              | 157 |
| 388 | Hollow nanoparticles as emerging electrocatalysts for renewable energy conversion reactions. <i>Chemical Society Reviews</i> , <b>2018</b> , 47, 8173-8202  | 58.5                              | 157 |
| 387 | Integrating large specific surface area and high conductivity in hydrogenated NiCo2O4 double-shell hollow spheres to improve supercapacitors. <i>NPG Asia Materials</i> , <b>2015</b> , 7, e165-e165  | 10.3                              | 156 |
| 386 | Formation of Triple-Shelled Molybdenum-Polydopamine Hollow Spheres and Their Conversion into MoO /Carbon Composite Hollow Spheres for Lithium-Ion Batteries. <i>Angewandte Chemie - International Edition</i> , <b>2016</b> , 55, 14668-14672 | 16.4                              | 152 |
| 385 | Functionalization of Hollow Nanomaterials for Catalytic Applications: Nanoreactor Construction. <i>Advanced Materials</i> , <b>2019</b> , 31, e1800426  | 24                                | 147 |
| 384 | Nitrogen-doped porous interconnected double-shelled hollow carbon spheres with high capacity for lithium ion batteries and sodium ion batteries. <i>Electrochimica Acta</i> , <b>2015</b> , 155, 174-182                                      | 6.7                               | 145 |

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| 383 | pH-Regulated Synthesis of Multi-Shelled Manganese Oxide Hollow Microspheres as Supercapacitor Electrodes Using Carbonaceous Microspheres as Templates. <i>Advanced Science</i> , <b>2014</b> , 1, 1400011     | 13.6 | 145 |
|-----|---|------|-----|
| 382 | Cobalt(II,III) oxide hollow structures: fabrication, properties and applications. <i>Journal of Materials Chemistry</i> , <b>2012</b> , 22, 23310   |      | 142 |
| 381 | Template-Assisted Formation of Rattle-type V2O5 Hollow Microspheres with Enhanced Lithium Storage Properties. <i>Advanced Functional Materials</i> , <b>2013</b> , 23, 5669-5674                              | 15.6 | 140 |
| 380 | Constructing SrTiO -TiO Heterogeneous Hollow Multi-shelled Structures for Enhanced Solar Water Splitting. <i>Angewandte Chemie - International Edition</i> , <b>2019</b> , 58, 1422-1426                      | 16.4 | 139 |
| 379 | Multi ball-in-ball hybrid metal oxides. <i>Advanced Materials</i> , <b>2011</b> , 23, 1720-3  | 24   | 135 |
| 378 | Synthesis and self-assembly of complex hollow materials. <i>Journal of Materials Chemistry</i> , <b>2011</b> , 21, 7511   |      | 133 |
| 377 | Double-shell Li-rich layered oxide hollow microspheres with sandwich-like carbon@spinel@layered@spinel@carbon shells as high-rate lithium ion battery cathode. <i>Nano Energy</i> , <b>2019</b> , 59, 184-196 | 17.1 | 132 |
| 376 | MOF-derived hierarchical double-shelled NiO/ZnO hollow spheres for high-performance supercapacitors. <i>Dalton Transactions</i> , <b>2016</b> , 45, 13311-6   | 4.3  | 131 |
| 375 | Synthesis of MOF-derived nanostructures and their applications as anodes in lithium and sodium ion batteries. <i>Coordination Chemistry Reviews</i> , <b>2019</b> , 388, 172-201                              | 23.2 | 128 |
| 374 | Yolk-shell, hollow, and single-crystalline ZnCo(2)O(4) powders: preparation using a simple one-pot process and application in lithium-ion batteries. <i>ChemSusChem</i> , <b>2013</b> , 6, 2111-6             | 8.3  | 128 |
| 373 | Hierarchically micro/nanostructured photoanode materials for dye-sensitized solar cells. <i>Journal of Materials Chemistry</i> , <b>2012</b> , 22, 15475  |      | 127 |
| 372 | Shell-by-shell synthesis of multi-shelled mesoporous silica nanospheres for optical imaging and drug delivery. <i>Biomaterials</i> , <b>2011</b> , 32, 556-64   | 15.6 | 125 |
| 371 | Hollow carbon spheres with a controllable shell structure. <i>Journal of Materials Chemistry</i> , <b>2006</b> , 16, 4413   | 3    | 125 |
| 370 | Hollow Metal-Organic-Framework Micro/Nanostructures and their Derivatives: Emerging Multifunctional Materials. <i>Advanced Materials</i> , <b>2019</b> , 31, e1803291   | 24   | 123 |
| 369 | Synthesis of CuS@CoS Double-Shelled Nanoboxes with Enhanced Sodium Storage Properties.<br>Angewandte Chemie - International Edition, <b>2019</b> , 58, 7739-7743  | 16.4 | 120 |
| 368 | Porous double-shell CdS@C3N4 octahedron derived by in situ supramolecular self-assembly for enhanced photocatalytic activity. <i>Applied Catalysis B: Environmental</i> , <b>2019</b> , 252, 33-40            | 21.8 | 120 |
| 367 | Magnetic yolkBhell mesoporous silica microspheres with supported Au nanoparticles as recyclable high-performance nanocatalysts. <i>Journal of Materials Chemistry A</i> , <b>2015</b> , 3, 4586-4594          | 13   | 118 |
| 366 | Synthesis of Spheres with Complex Structures Using Hollow Latex Cages as Templates. <i>Advanced Functional Materials</i> , <b>2005</b> , 15, 1523-1528  | 15.6 | 118 |

| 365 | Synthesis of Cobalt Sulfide Multi-shelled Nanoboxes with Precisely Controlled Two to Five Shells for Sodium-Ion Batteries. <i>Angewandte Chemie - International Edition</i> , <b>2019</b> , 58, 2675-2679   | 16.4 | 117 |
|-----|---|------|-----|
| 364 | Controllable Synthesis of Functional Hollow Carbon Nanostructures with Dopamine As Precursor for Supercapacitors. <i>ACS Applied Materials &amp; Samp; Interfaces</i> , <b>2015</b> , 7, 18609-17           | 9.5  | 116 |
| 363 | Double mesoporous silica shelled spherical/ellipsoidal nanostructures: Synthesis and hydrophilic/hydrophobic anticancer drug delivery. <i>Journal of Materials Chemistry</i> , <b>2011</b> , 21, 5290       |      | 116 |
| 362 | Mesoporous single-crystal CoSn(OH)6 hollow structures with multilevel interiors. <i>Scientific Reports</i> , <b>2013</b> , 3, 1391  | 4.9  | 115 |
| 361 | Multishelled Metal Oxide Hollow Spheres: Easy Synthesis and Formation Mechanism. <i>Chemistry - A European Journal</i> , <b>2016</b> , 22, 8864-71  | 4.8  | 115 |
| 360 | Design and Preparation of MnO2/CeO2-MnO2 Double-Shelled Binary Oxide Hollow Spheres and Their Application in CO Oxidation. <i>ACS Applied Materials &amp; Design Section</i> , 8, 8670-7                    | 9.5  | 114 |
| 359 | Synthesis for yolk-shell-structured metal sulfide powders with excellent electrochemical performances for lithium-ion batteries. <i>Small</i> , <b>2014</b> , 10, 474-8                                     | 11   | 113 |
| 358 | Hollow Multishelled Structures for Promising Applications: Understanding the Structure-Performance Correlation. <i>Accounts of Chemical Research</i> , <b>2019</b> , 52, 2169-2178                          | 24.3 | 110 |
| 357 | Nanofibers Comprising Yolk-Shell Sn@void@SnO/SnOland Hollow SnO/SnOland SnOl Nanospheres via the Kirkendall Diffusion Effect and Their Electrochemical Properties. <i>Small</i> , <b>2015</b> , 11, 4673-81 | 11   | 110 |
| 356 | Sequential Templating Approach: A Groundbreaking Strategy to Create Hollow Multishelled Structures. <i>Advanced Materials</i> , <b>2019</b> , 31, e1802874  | 24   | 110 |
| 355 | Double-walled Au nanocage/SiO2 nanorattles: integrating SERS imaging, drug delivery and photothermal therapy. <i>Small</i> , <b>2015</b> , 11, 985-93   | 11   | 108 |
| 354 | Engineering of multi-shelled SnO2 hollow microspheres for highly stable lithium-ion batteries. <i>Journal of Materials Chemistry A</i> , <b>2016</b> , 4, 17673-17677                                       | 13   | 108 |
| 353 | Multi-Shell Porous TiO2 Hollow Nanoparticles for Enhanced Light Harvesting in Dye-sensitized Solar Cells. <i>Advanced Functional Materials</i> , <b>2014</b> , 24, 7619-7626                                | 15.6 | 108 |
| 352 | Formation of Septuple-Shelled (Co Mn ) (Co Mn ) O Hollow Spheres as Electrode Material for Alkaline Rechargeable Battery. <i>Advanced Materials</i> , <b>2017</b> , 29, 1700550                             | 24   | 108 |
| 351 | Hollow ZSM-5 with Silicon-Rich Surface, Double Shells, and Functionalized Interior with Metallic Nanoparticles and Carbon Nanotubes. <i>Advanced Functional Materials</i> , <b>2015</b> , 25, 7479-7487     | 15.6 | 105 |
| 350 | Self-Templating Approaches to Hollow Nanostructures. <i>Advanced Materials</i> , <b>2019</b> , 31, e1802349   | 24   | 105 |
| 349 | Hollow-in-hollow carbon spheres with hollow foam-like cores for lithiumBulfur batteries. <i>Nano Research</i> , <b>2015</b> , 8, 2663-2675  | 10   | 104 |
| 348 | Multi-shelled hollow carbon nanospheres for lithiumBulfur batteries with superior performances.  Journal of Materials Chemistry A, <b>2014</b> , 2, 16199-16207   | 13   | 104 |

## (2010-2010)

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| MOFDerived hollow doubleDhelled NiO nanospheres for highDerformance supercapacitors.  Journal of Alloys and Compounds, <b>2018</b> , 734, 1-8   | 5.7  | 101  |
| Hollow Multi-Shelled Structural TiO with Multiple Spatial Confinement for Long-Life Lithium-Sulfur Batteries. <i>Angewandte Chemie - International Edition</i> , <b>2019</b> , 58, 9078-9082  | 16.4   | 100  |
| Multi-shell hollow structured Sb2S3 for sodium-ion batteries with enhanced energy density. <i>Nano Energy</i> , <b>2019</b> , 60, 591-599   | 17.1   | 100  |
| Hierarchical nanoscale multi-shell Au/CeO2 hollow spheres. <i>Chemical Science</i> , <b>2014</b> , 5, 4221-4226   | 9.4  | 100  |
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| 301 | Structural Engineering of Multishelled Hollow Carbon Nanostructures for High-Performance Na-Ion Battery Anode. <i>Advanced Energy Materials</i> , <b>2018</b> , 8, 1800855   | 21.8 | 78 |
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| 283 | Double-shelled hollow rods assembled from nitrogen/sulfur-codoped carbon coated indium oxide nanoparticles as excellent photocatalysts. <i>Nature Communications</i> , <b>2019</b> , 10, 2270   | 17.4  | 71 |
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| 281 | Enhanced Electroresponsive Performance of Double-Shell SiO2/TiO2 Hollow Nanoparticles. <i>ACS Nano</i> , <b>2015</b> , 9, 4939-49   | 16.7  | 70 |
| 280 | Double-shell CuS nanocages as advanced supercapacitor electrode materials. <i>Journal of Power Sources</i> , <b>2017</b> , 355, 31-35   | 8.9   | 69 |
| 279 | Highly controlled synthesis of multi-shelled NiO hollow microspheres for enhanced lithium storage properties. <i>Materials Research Bulletin</i> , <b>2017</b> , 87, 224-229  | 5.1   | 69 |
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| 268 | A Review: Enhanced Anodes of Li/Na-Ion Batteries Based on Yolk-Shell Structured Nanomaterials. <i>Nano-Micro Letters</i> , <b>2018</b> , 10, 40   | 19.5                 | 62              |  |
| 267 | Preparation of Magnetic Hybrid Copolymer Lobalt Hierarchical Hollow Spheres by Localized Ostwald Ripening. <i>Chemistry of Materials</i> , <b>2007</b> , 19, 6485-6491  | 9.6                  | 62              |  |
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| 264 | Interior Structural Tailoring of Cu2O Shell-in-Shell Nanostructures through Multistep Ostwald Ripening. <i>Journal of Physical Chemistry C</i> , <b>2011</b> , 115, 18479-18485   | 3.8                  | 61              |  |
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| 260 | Rational synthesis of metalBrganic framework composites, hollow structures and their derived porous mixed metal oxide hollow structures. <i>Journal of Materials Chemistry A</i> , <b>2016</b> , 4, 183-192   | 13                   | 59              |  |
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| 258 | Self-template synthesis of double shelled ZnS-NiS1.97 hollow spheres for electrochemical energy storage. <i>Applied Surface Science</i> , <b>2018</b> , 435, 993-1001   | 6.7                  | 59              |  |

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| 250 | Hollow Multishelled Structure of Heterogeneous Co3O4LeO2N Nanocomposite for CO Catalytic Oxidation. <i>Advanced Functional Materials</i> , <b>2019</b> , 29, 1806588   | 15.6 | 55 |
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| 244 | Diaminomaleonitrile functionalized double-shelled hollow MIL-101 (Cr) for selective removal of uranium from simulated seawater. <i>Chemical Engineering Journal</i> , <b>2019</b> , 368, 951-958   | 14.7 | 52 |
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| 241 | Fabrication of cubic Zn2SnO4/SnO2 complex hollow structures and their sunlight-driven photocatalytic activity. <i>Nanoscale</i> , <b>2016</b> , 8, 12858-62  | 7.7  | 51 |
| 240 | Tunable construction of multi-shell hollow SiO2 microspheres with hierarchically porous structure as high-performance anodes for lithium-ion batteries. <i>Chemical Engineering Journal</i> , <b>2017</b> , 323, 252-259   | 14.7 | 50 |

| 239 | Novel Au/Cu2O multi-shelled porous heterostructures for enhanced efficiency of photoelectrochemical water splitting. <i>Journal of Materials Chemistry A</i> , <b>2017</b> , 5, 14415-14421   | 13   | 50 |
|-----|---|------|----|
| 238 | High-Performance Energy Storage Device Based on Triple-Shelled Cobalt Gallium Oxide Hollow Spheres and Graphene Wrapped Copper Iron Disulfide Porous Spheres. <i>ACS Sustainable Chemistry and Engineering</i> , <b>2019</b> , 7, 7908-7917 | 8.3  | 50 |
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| 236 | Coordination Polymer-Derived Multishelled Mixed Ni-Co Oxide Microspheres for Robust and Selective Detection of Xylene. <i>ACS Applied Materials &amp; Amp; Interfaces</i> , <b>2018</b> , 10, 15314-15321                                   | 9.5  | 50 |
| 235 | Control of Amphiphile Self-Assembly via Bioinspired Metal Ion Coordination. <i>Journal of the American Chemical Society</i> , <b>2018</b> , 140, 1409-1414  | 16.4 | 50 |
| 234 | Electrochemical properties of yolk@hell and hollow CoMn2O4 powders directly prepared by continuous spray pyrolysis as negative electrode materials for lithium ion batteries. <i>RSC Advances</i> , <b>2013</b> , 3, 13110                  | 3.7  | 50 |
| 233 | Controllable and enhanced HCHO sensing performances of different-shelled ZnO hollow microspheres. <i>Sensors and Actuators B: Chemical</i> , <b>2013</b> , 183, 467-473   | 8.5  | 50 |
| 232 | Construction of complex NiS multi-shelled hollow structures with enhanced sodium storage. <i>Energy Storage Materials</i> , <b>2019</b> , 23, 17-24   | 19.4 | 49 |
| 231 | Multi-shelled ZnCo2O4 yolk-shell spheres for high-performance acetone gas sensor. <i>Applied Surface Science</i> , <b>2018</b> , 443, 114-121   | 6.7  | 49 |
| 230 | NiCo2S4 multi-shelled hollow polyhedrons as high-performance anode materials for lithium-ion batteries. <i>Electrochimica Acta</i> , <b>2019</b> , 299, 289-297   | 6.7  | 49 |
| 229 | Hierarchical TiO /SnO Hollow Spheres Coated with Graphitized Carbon for High-Performance Electrochemical Li-Ion Storage. <i>Small</i> , <b>2017</b> , 13, 1604283   | 11   | 48 |
| 228 | Using simple spray pyrolysis to prepare yolk-shell-structured ZnO-Mn3O4 systems with the optimum composition for superior electrochemical properties. <i>Chemistry - A European Journal</i> , <b>2014</b> , 20, 3014-8                      | 4.8  | 48 |
| 227 | General Synthetic Route toward Functional Hollow Spheres with Double-Shelled Structures. <i>Angewandte Chemie</i> , <b>2005</b> , 117, 6885-6888  | 3.6  | 48 |
| 226 | Metal Nanoparticles Confined in the Nanospace of Double-Shelled Hollow Silica Spheres for Highly Efficient and Selective Catalysis. <i>Chemistry of Materials</i> , <b>2016</b> , 28, 5596-5600   | 9.6  | 48 |
| 225 | Controlled synthesis of MOF-derived quadruple-shelled CoS2 hollow dodecahedrons as enhanced electrodes for supercapacitors. <i>Electrochimica Acta</i> , <b>2019</b> , 312, 54-61   | 6.7  | 47 |
| 224 | Multi-shelled MgCo2O4 hollow microspheres as anodes for lithium ion batteries. <i>Journal of Materials Chemistry A</i> , <b>2016</b> , 4, 12263-12272   | 13   | 47 |
| 223 | Alkaline electrochemical water oxidation with multi-shelled cobalt manganese oxide hollow spheres. <i>Chemical Communications</i> , <b>2017</b> , 53, 8641-8644   | 5.8  | 46 |
| 222 | Fully integrated hierarchical double-shelled CoS@CNT nanostructures with unprecedented performance for Li-S batteries. <i>Nanoscale Horizons</i> , <b>2019</b> , 4, 182-189   | 10.8 | 46 |

| 221 | Kilogram-scale synthesis of Pd-loaded quintuple-shelled Co3O4 microreactors and their application to ultrasensitive and ultraselective detection of methylbenzenes. <i>ACS Applied Materials &amp; Amp; Interfaces</i> , <b>2015</b> , 7, 7717-23 | 9.5                | 45 |
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| 220 | Fabrication of ZnO nanorod-assembled multishelled hollow spheres and enhanced performance in gas sensor. <i>Journal of Materials Chemistry</i> , <b>2011</b> , 21, 14277  |                    | 45 |
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| 218 | Effect of esterification reaction of citric acid and ethylene glycol on the formation of multi-shelled cobalt oxide powders with superior electrochemical properties. <i>Nano Research</i> , <b>2014</b> , 7, 1738-1748                           | 10                 | 44 |
| 217 | Formation of multi-shelled carbon nanoparticles by arc discharge in liquid benzene. <i>Materials Chemistry and Physics</i> , <b>2004</b> , 88, 235-238  | 4.4                | 44 |
| 216 | Hollow shell-in-shell Ni3S4@Co9S8 tubes derived from coreEhell Ni-MOF-74@Co-MOF-74 as efficient faradaic electrodes. <i>CrystEngComm</i> , <b>2018</b> , 20, 889-895  | 3.3                | 43 |
| 215 | Synthesis of Single-Component Metal Oxides with Controllable Multi-Shelled Structure and their Morphology-Related Applications. <i>Chemical Record</i> , <b>2020</b> , 20, 102-119  | 6.6                | 43 |
| 214 | Ni-Co-MoSx ball-in-ball hollow nanospheres as Pt-free bifunctional catalysts for high-performance solar cells and hydrogen evolution reactions. <i>Chemical Engineering Journal</i> , <b>2019</b> , 368, 202-211                                  | 14.7               | 42 |
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| 212 | Design of multishell microsphere of transition metal oxides/carbon composites for lithium ion battery. <i>Chemical Engineering Journal</i> , <b>2020</b> , 380, 122489  | 14.7               | 42 |
| 211 | Nano-Si/C microsphere with hollow double spherical interlayer and submicron porous structure to enhance performance for lithium-ion battery anode. <i>Electrochimica Acta</i> , <b>2019</b> , 312, 242-250  | 6.7                | 41 |
| 210 | Effect of Cation Substitution on the Gas-Sensing Performances of Ternary Spinel MCoO (M = Mn, Ni, and Zn) Multishelled Hollow Twin Spheres. <i>ACS Applied Materials &amp; District Materials</i> (1) 11, 28023-2                                 | 8032               | 41 |
| 209 | Double-Shelled Mn2O3 Hollow Spheres and Their Application in Water Treatment. <i>European Journal of Inorganic Chemistry</i> , <b>2010</b> , 2010, 1172-1176  | 2.3                | 41 |
| 208 | Phenolic Resin and Derived Carbon Hollow Spheres. <i>Macromolecular Chemistry and Physics</i> , <b>2006</b> , 207, 1633-1639  | 2.6                | 41 |
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|-----|--|------------------|----|--|
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| 201 | Double-shell Fe2O3 hollow box-like structure for enhanced photo-Fenton degradation of malachite green dye. <i>Journal of Physics and Chemistry of Solids</i> , <b>2018</b> , 112, 209-215  | 3.9              | 39 |  |
| 200 | YolkBhell carbon microspheres with controlled yolk and void volumes and shell thickness and their application as a cathode material for LiB batteries. <i>Journal of Materials Chemistry A</i> , <b>2017</b> , 5, 988-995  | 13               | 39 |  |
| 199 | Easy hydrothermal synthesis of multi-shelled La2O3 hollow spheres for lithium-ion batteries.<br>Journal of Materials Science: Materials in Electronics, 2018, 29, 1232-1237  | 2.1              | 39 |  |
| 198 | Controllable synthesis of mesoporous multi-shelled ZnO microspheres as efficient photocatalysts for NO oxidation. <i>Applied Surface Science</i> , <b>2018</b> , 435, 468-475  | 6.7              | 39 |  |
| 197 | One-pot controllable synthesis of CoFe2O4 solid, hollow and multi-shell hollow nanospheres as superior anode materials for lithium ion batteries. <i>Journal of Materials Chemistry A</i> , <b>2017</b> , 5, 21994-2200  | o <del>3</del> 3 | 38 |  |
| 196 | Multishelled Transition Metal-Based Microspheres: Synthesis and Applications for Batteries and Supercapacitors. <i>Small</i> , <b>2019</b> , 15, e1804737  | 11               | 38 |  |
| 195 | A Synthetic Protocol for Preparation of Binary Multi-shelled Hollow Spheres and Their Enhanced Oxidation Application. <i>Chemistry of Materials</i> , <b>2017</b> , 29, 10104-10112  | 9.6              | 38 |  |
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| 193 | Shell-in-shell monodispersed triamine-functionalized SiO2 hollow microspheres with micro-mesostructured shells for highly efficient removal of heavy metals from aqueous solutions. <i>Journal of Environmental Chemical Engineering</i> , <b>2019</b> , 7, 102832 | 6.8              | 37 |  |
| 192 | Mesoporous hollow ZnCo2S4 core-shell nanospheres for high performance supercapacitors. <i>Ceramics International</i> , <b>2018</b> , 44, 17464-17472   | 5.1              | 37 |  |
| 191 | Advanced yolk-shell nanoparticles as nanoreactors for energy conversion. <i>Chinese Journal of Catalysis</i> , <b>2017</b> , 38, 970-990   | 11.3             | 36 |  |
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| 189 | Degradation of rhodamine B by a novel Fe3O4/SiO2 double-mesoporous-shelled hollow spheres through photo-Fenton process. <i>Materials Chemistry and Physics</i> , <b>2019</b> , 227, 302-312  | 4.4              | 36 |  |
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| 185 | Electrocatalytic activity of carbon spheres towards NADH oxidation at low overpotential and its applications in biosensors and biofuel cells. <i>RSC Advances</i> , <b>2011</b> , 1, 1301  | 3.7               | 35 |
|-----|--|-------------------|----|
| 184 | YDLYbl+/Erl+ Hollow Spheres with Controlled Inner Structures and Enhanced Upconverted Photoluminescence. <i>Small</i> , <b>2015</b> , 11, 2768-73  | 11                | 34 |
| 183 | Controlled synthesis of double-shelled CeO2 hollow spheres and enzyme-free electrochemical bio-sensing properties for uric acid. <i>Journal of Materials Chemistry</i> , <b>2012</b> , 22, 17079   |                   | 34 |
| 182 | Tuning interior nanogaps of double-shelled Au/Ag nanoboxes for surface-enhanced Raman scattering. <i>Scientific Reports</i> , <b>2015</b> , 5, 8382  | 4.9               | 33 |
| 181 | Au Nanodisk-Core Multishell Nanoparticles: Synthetic Method for Controlling Number of Shells and Intershell Distance. <i>Chemistry of Materials</i> , <b>2014</b> , 26, 3618-3623  | 9.6               | 33 |
| 180 | Tunable Co3O4 hollow structures (from yolkEhell to multi-shell) and their Li storage properties.  Journal of Materials Chemistry A, <b>2017</b> , 5, 12757-12761   | 13                | 32 |
| 179 | Hierarchical triple-shelled porous hollow zinc oxide spheres wrapped in graphene oxide as efficient sensor material for simultaneous electrochemical determination of synthetic antioxidants in vegetable oil. Sensors and Actuators B: Chemical, 2016, 235, 707-716 | 8.5               | 32 |
| 178 | Unique double-shelled hollow silica microspheres: template-guided self-assembly, tunable pore size, high thermal stability, and their application in removal of neutral red. <i>Journal of Materials Chemistry</i> , <b>2011</b> , 21, 19124                         |                   | 32 |
| 177 | Metal-organic frameworks-derived porous ZnO/Ni0.9Zn0.1O double-shelled nanocages as gas sensing material for selective detection of xylene. <i>Sensors and Actuators B: Chemical</i> , <b>2017</b> , 252, 649-65   | 56 <sup>8.5</sup> | 31 |
| 176 | MOF-derived formation of nickel cobalt sulfides with multi-shell hollow structure towards electrocatalytic hydrogen evolution reaction in alkaline media. <i>Composites Part B: Engineering</i> , <b>2019</b> , 177, 107252  | 10                | 31 |
| 175 | L-Histidine-assisted template-free hydrothermal synthesis of Fe2O3 porous multi-shelled hollow spheres with enhanced lithium storage properties. <i>Journal of Materials Chemistry A</i> , <b>2014</b> , 2, 12361-12   | 36 <sup>13</sup>  | 31 |
| 174 | Synthesis of multi-shelled ZnO hollow microspheres and their improved photocatalytic activity. <i>Nanoscale Research Letters</i> , <b>2014</b> , 9, 468  | 5                 | 31 |
| 173 | Synthesis and Performance of CuO with Complex Hollow Structure as Anode Material for Lithium Secondary Batteries. <i>Journal of the Electrochemical Society</i> , <b>2011</b> , 158, A814  | 3.9               | 31 |
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| 171 | Rapid sensitive sensing platform based on yolk-shell hybrid hollow sphere for detection of ethanol. <i>Sensors and Actuators B: Chemical</i> , <b>2018</b> , 256, 479-487  | 8.5               | 31 |
| 170 | Synthesis of amorphous ZnSnO3 double-shell hollow microcubes as advanced anode materials for lithium ion batteries. <i>Electrochimica Acta</i> , <b>2015</b> , 182, 327-333  | 6.7               | 30 |
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|-----|--|------|----|--|
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| 164 | Resonance-Enhanced Absorption in Hollow Nanoshell Spheres with Omnidirectional Detection and High Responsivity and Speed. <i>Advanced Materials</i> , <b>2018</b> , 30, e1801972   | 24   | 29 |  |
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| 160 | Self-assembly synthesis of graphene oxide double-shell hollow-spheres decorated with Mn3O4 for electrochemical supercapacitors. <i>Carbon</i> , <b>2016</b> , 107, 100-108   | 10.4 | 29 |  |
| 159 | Morella-rubra-like metal®rganic-framework-derived multilayered Co3O4/NiO/C hybrids as high-performance anodes for lithium storage. <i>Journal of Materials Chemistry A</i> , <b>2017</b> , 5, 24269-24274  | 13   | 28 |  |
| 158 | Porous Double-shelled SnO 2 @ C Hollow Spheres as High-Performance Anode Material for Lithium Ion Batteries. <i>Electrochimica Acta</i> , <b>2016</b> , 195, 208-215   | 6.7  | 28 |  |
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| 156 | Enhanced gas sensing by amorphous double-shell Fe2O3 hollow nanospheres functionalized with PdO nanoparticles. <i>Sensors and Actuators B: Chemical</i> , <b>2017</b> , 252, 322-329   | 8.5  | 28 |  |
| 155 | Highly Porous Double-Shelled Hollow Hematite Nanoparticles for Gas Sensing. <i>ACS Applied Nano Materials</i> , <b>2019</b> , 2, 2347-2357   | 5.6  | 27 |  |
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| 152 | In-situ formation of supported Au nanoparticles in hierarchical yolk-shell CeO/mSiO structures as highly reactive and sinter-resistant catalysts. <i>Journal of Colloid and Interface Science</i> , <b>2017</b> , 488, 196-206   | 59.3 | 27 |  |
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| 150 | Scalable and controllable synthesis of multi-shell hollow carbon microspheres for high-performance supercapacitors. <i>Carbon</i> , <b>2019</b> , 154, 330-341   | 10.4 | 26 |  |

| 149 | Construction of multi-shelled Bi2WO6 hollow microspheres with enhanced visible light photo-catalytic performance. <i>Materials Research Bulletin</i> , <b>2018</b> , 99, 331-335  | 5.1  | 26 |
|-----|---|------|----|
| 148 | Hollow-in-Hollow Carbon Spheres for Lithium-ion Batteries with Superior Capacity and Cyclic Performance. <i>Electrochimica Acta</i> , <b>2015</b> , 186, 436-441  | 6.7  | 25 |
| 147 | Facile fabrication of LiMn2O4 microspheres from multi-shell MnO2 for high-performance lithium-ion batteries. <i>Materials Letters</i> , <b>2014</b> , 135, 75-78  | 3.3  | 25 |
| 146 | Uniform double-shelled silica hollow spheres: acid/base selective-etching synthesis and their drug delivery application. <i>RSC Advances</i> , <b>2013</b> , 3, 5649  | 3.7  | 25 |
| 145 | Carbon nanotube-stabilized CoS dual-shell hollow spheres for high-performance K-ion storage. <i>Chemical Communications</i> , <b>2019</b> , 55, 1406-1409   | 5.8  | 24 |
| 144 | Multi-shelled ZnO decorated with nitrogen and phosphorus co-doped carbon quantum dots: synthesis and enhanced photodegradation activity of methylene blue in aqueous solutions <i>RSC Advances</i> , <b>2019</b> , 9, 7362-7374 | 3.7  | 24 |
| 143 | Tunable construction of multi-shelled hollow carbonate nanospheres and their potential applications. <i>Nanoscale</i> , <b>2016</b> , 8, 8687-95  | 7.7  | 24 |
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| 141 | Triple-, Double-, and Single-Shelled Hollow Spheres of Sulfonated Microporous Organic Network as Drug Delivery Materials. <i>Chemistry of Materials</i> , <b>2019</b> , 31, 300-304   | 9.6  | 24 |
| 140 | Feasibility of using hollow double walled Mn2O3 nanocubes for hybrid Na-air battery. <i>Chemical Engineering Journal</i> , <b>2019</b> , 360, 415-422   | 14.7 | 24 |
| 139 | Effects of calcination temperature for rate capability of triple-shelled ZnFeO hollow microspheres for lithium ion battery anodes. <i>Scientific Reports</i> , <b>2017</b> , 7, 46378   | 4.9  | 23 |
| 138 | General Synthesis of Mixed Semiconducting Metal Oxide Hollow Spheres with Tunable Compositions for Low-Temperature Chemiresistive Sensing. <i>ACS Applied Materials &amp; Compositions</i> 11, 35060-35067                      | 9.5  | 23 |
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| 135 | Controllable fabrication and magnetic properties of double-shell cobalt oxides hollow particles. <i>Scientific Reports</i> , <b>2015</b> , 5, 8737  | 4.9  | 23 |
| 134 | Surface-enhanced Raman spectroscopy of double-shell hollow nanoparticles: electromagnetic and chemical enhancements. <i>Langmuir</i> , <b>2013</b> , 29, 6253-61  | 4    | 23 |
| 133 | Double-Shelled TiO Hollow Spheres Assembled with TiO Nanosheets. <i>Chemistry - A European Journal</i> , <b>2017</b> , 23, 4336-4343  | 4.8  | 22 |
| 132 | A novel core-shell polyhedron Co3O4/MnCo2O4.5 as electrode materials for supercapacitors. <i>Ceramics International</i> , <b>2019</b> , 45, 12558-12562   | 5.1  | 22 |

| 131 | Self-templated formation of CuCo2O4 triple-shelled hollow microspheres for all-solid-state asymmetric supercapacitors. <i>Journal of Alloys and Compounds</i> , <b>2019</b> , 787, 694-699                | 5.7               | 22 |  |
|-----|---|-------------------|----|--|
| 130 | Facile fabrication of multishelled SnO 2 hollow microspheres for gas sensing application. <i>Materials Letters</i> , <b>2016</b> , 164, 56-59   | 3.3               | 22 |  |
| 129 | Facile synthesis, magnetic and optical properties of double-shelled Co3O4 hollow microspheres. <i>Advanced Powder Technology</i> , <b>2014</b> , 25, 1780-1785  | 4.6               | 22 |  |
| 128 | Multi-shelled FeCo2O4 hollow porous microspheres/CCFs magnetic hybrid and its dual-functional catalytic performance. <i>Chemical Engineering Journal</i> , <b>2017</b> , 330, 792-803                     | 14.7              | 22 |  |
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| 126 | Contribution of multiple reflections to light utilization efficiency of submicron hollow TiO2 photocatalyst. <i>Science China Materials</i> , <b>2016</b> , 59, 1017-1026                                 | 7.1               | 22 |  |
| 125 | Multi-shelled Fe2O3 microspheres for high-rate supercapacitors. <i>Science China Materials</i> , <b>2016</b> , 59, 247-253  | 7.1               | 22 |  |
| 124 | Multi-shelled ceria hollow spheres with a tunable shell number and thickness and their superior catalytic activity. <i>Dalton Transactions</i> , <b>2017</b> , 46, 1634-1644                              | 4.3               | 21 |  |
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| 122 | Design of three-dimensional hierarchical TiO2/SrTiO3 heterostructures towards selective CO2 photoreduction. <i>Inorganic Chemistry Frontiers</i> , <b>2019</b> , 6, 1667-1674                             | 6.8               | 20 |  |
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| 120 | A multi-shelled V2O3/C composite with an overall coupled carbon scaffold enabling ultrafast and stable lithium/sodium storage. <i>Journal of Materials Chemistry A</i> , <b>2019</b> , 7, 19234-19240     | 13                | 20 |  |
| 119 | An unusual temperature gradient crystallization process: facile synthesis of hierarchical ZnO porous hollow spheres with controllable shell numbers. <i>CrystEngComm</i> , <b>2014</b> , 16, 7933-7941    | 3.3               | 20 |  |
| 118 | Synthesis of multi-shell carbon microspheres. <i>Carbon</i> , <b>2006</b> , 44, 190-193   | 10.4              | 20 |  |
| 117 | Fabrication of Zn2SnO4 microspheres with controllable shell numbers for highly efficient dye-sensitized solar cells. <i>Solar Energy</i> , <b>2019</b> , 181, 424-429                                     | 6.8               | 20 |  |
| 116 | Encapsulation pyrolysis synchronous deposition for hollow carbon sphere with tunable textural properties. <i>Carbon</i> , <b>2019</b> , 143, 467-474  | 10.4              | 20 |  |
| 115 | A yolk-double-shelled heterostructure-based sensor for acetone detecting application. <i>Journal of Colloid and Interface Science</i> , <b>2019</b> , 539, 490-496  | 9.3               | 20 |  |
| 114 | The controlled synthesis of complex hollow nanostructures and prospective applications.  Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2019, 475, 20180677         | 7 <sup>2.</sup> 4 | 19 |  |

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|-----|---|------|----|
| 112 | Designed synthesis of MO (M = Zn, Fe, Sn, Ni, Mn, Co, Ce, Mg, Ag), Pt, and Au nanoparticles supported on hierarchical CuO hollow structures. <i>Nanoscale</i> , <b>2016</b> , 8, 19684-19695  | 7.7  | 19 |
| 111 | Precursor-mediated synthesis of double-shelled V2O5 hollow nanospheres as cathode material for lithium-ion batteries. <i>CrystEngComm</i> , <b>2016</b> , 18, 4068-4073   | 3.3  | 19 |
| 110 | Porous multishelled NiO hollow microspheres encapsulated within three-dimensional graphene as flexible free-standing electrodes for high-performance supercapacitors. <i>Nanoscale</i> , <b>2019</b> , 11, 16071-160                              | o79  | 19 |
| 109 | Rationally Designed Double-Shell Dodecahedral Microreactors with Efficient Photoelectron Transfer: N-Doped-C-Encapsulated Ultrafine In O Nanoparticles. <i>Chemistry - A European Journal</i> , <b>2019</b> , 25, 3053-3060                       | 4.8  | 19 |
| 108 | Fabrication of Ellipsoidal Silica Yolk-Shell Magnetic Structures with Extremely Stable Au Nanoparticles as Highly Reactive and Recoverable Catalysts. <i>Langmuir</i> , <b>2017</b> , 33, 2698-2708   | 4    | 18 |
| 107 | Synthesis of NiO-TiO2 hybrids/mSiO2 yolk-shell architectures embedded with ultrasmall gold nanoparticles for enhanced reactivity. <i>Applied Surface Science</i> , <b>2017</b> , 412, 616-626   | 6.7  | 18 |
| 106 | Perovskite-type ZnSn(OH)6 hollow cubes with controllable shells for enhanced formaldehyde sensing performance at low temperature. <i>Sensors and Actuators B: Chemical</i> , <b>2019</b> , 288, 298-306   | 8.5  | 18 |
| 105 | Kinetically Controlled Synthesis of LiNi0.5Mn1.5O4 Micro- and Nanostructured Hollow Spheres as High-Rate Cathode Materials for Lithium Ion Batteries. <i>Industrial &amp; Discourse Material Chemistry Research</i> , <b>2016</b> , 55, 9352-9361 | 3.9  | 18 |
| 104 | Aerosol construction of multi-shelled LiMn2O4 hollow microspheres as a cathode in lithium ion batteries. <i>New Journal of Chemistry</i> , <b>2016</b> , 40, 1839-1844  | 3.6  | 18 |
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| 102 | Controlled synthesis of multi-shelled transition metal oxide hollow structures through one-pot solution route. <i>Chinese Chemical Letters</i> , <b>2013</b> , 24, 1-6  | 8.1  | 18 |
| 101 | In-situ construction of Au nanoparticles confined in double-shelled TiO2/mSiO2 hollow architecture for excellent catalytic activity and enhanced thermal stability. <i>Applied Surface Science</i> , <b>2017</b> , 392, 36-45                     | 6.7  | 18 |
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| 99  | Construction of hybrid multi-shell hollow structured CeO2MnOx materials for selective catalytic reduction of NO with NH3. <i>RSC Advances</i> , <b>2017</b> , 7, 5989-5999  | 3.7  | 17 |
| 98  | Porous hollow carbon nanobubbles@ZnCdS multi-shelled dodecahedral cages with enhanced visible-light harvesting for ultrasensitive photoelectrochemical biosensors. <i>Biosensors and Bioelectronics</i> , <b>2019</b> , 133, 125-132              | 11.8 | 17 |
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|----|---|---------------|----|
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| 90 | Double-shelled hollow Na2FePO4F/C spheres cathode for high-performance sodium-ion batteries.<br>Journal of Materials Science, <b>2018</b> , 53, 2735-2747   | 4.3           | 17 |
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| 86 | Cu2O hollow structuresthicrostructural evolution and photocatalytic properties. <i>RSC Advances</i> , <b>2016</b> , 6, 103700-103706  | 3.7           | 16 |
| 85 | Hollow multi-shell structured SnO2 with enhanced performance for ultraviolet photodetectors. <i>Inorganic Chemistry Frontiers</i> , <b>2019</b> , 6, 1968-1972  | 6.8           | 16 |
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| 83 | Enhanced-absorption template method for preparation of double-shell NiO hollow nanospheres with controllable particle size for nanothermite application. <i>Chemical Engineering Journal</i> , <b>2020</b> , 379, 122330  | 14.7          | 16 |
| 82 | Facile fabrication of multishelled Cr2O3 hollow microspheres with enhanced gas sensitivity.  Materials Letters, 2015, 140, 158-161  | 3.3           | 15 |
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| 80 | Rapid microwave-assisted synthesis of ball-in-ball CuO microspheres and its application as a H2O2 sensor. <i>Materials Letters</i> , <b>2013</b> , 92, 96-99  | 3.3           | 15 |
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|----|--|------|----|
| 76 | Ionic liquid assisted hydrothermal synthesis of hollow core/shell MoS2 microspheres. <i>Materials Letters</i> , <b>2015</b> , 160, 550-554   | 3.3  | 14 |
| 75 | Investigation of the Enhanced Lithium Battery Storage in a Polyoxometalate Model: From Solid Spheres to Hollow Balls. <i>Small Methods</i> , <b>2018</b> , 2, 1800154  | 12.8 | 14 |
| 74 | Al-Stabilized Double-Shelled Hollow CaO-Based Microspheres with Superior CO2 Adsorption Performance. <i>Energy &amp; Double Superior CO2 Adsorption</i> Performance. | 4.1  | 14 |
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| 72 | Fabrication and photocatalytic properties of SnO2 double-shelled and triple-shelled hollow spheres. <i>Solid State Sciences</i> , <b>2016</b> , 56, 63-67  | 3.4  | 14 |
| 71 | Mesoporous Nb2O5 microspheres with filled and yolk-shell structure as anode materials for lithium-ion batteries. <i>Journal of Alloys and Compounds</i> , <b>2019</b> , 776, 722-730   | 5.7  | 14 |
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| 68 | Fabrication of hollow spheres of metal oxide using fructose-derived carbonaceous spheres as sacrificial templates. <i>Comptes Rendus Chimie</i> , <b>2015</b> , 18, 379-384  | 2.7  | 13 |
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| 66 | Preparation of Double-Shelled C/SiO2Hollow Spheres with Enhanced Adsorption Capacity. <i>Industrial &amp; Engineering Chemistry Research</i> , <b>2015</b> , 54, 641-648   | 3.9  | 13 |
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| 61 | Multishelled Hollow Structures of Yttrium Oxide for the Highly Selective and Ultrasensitive Detection of Methanol. <i>Small</i> , <b>2019</b> , 15, e1804688   | 11   | 12 |
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|----|--|-----|----|
| 58 | Double-shelled MnO 2 hollow spheres for supercapacitors. <i>Materials Letters</i> , <b>2014</b> , 136, 78-80   | 3.3 | 12 |
| 57 | Fabrication of Hollow and YolkBhell Structured Fe2O3 Nanoparticles with Versatile Configurations. <i>Industrial &amp; Engineering Chemistry Research</i> , <b>2013</b> , 52, 1303-1308                       | 3.9 | 12 |
| 56 | Double-shell CeO2@TiO2 hollow spheres composites with enhanced light harvesting and electron transfer in dye-sensitized solar cells. <i>Journal of Alloys and Compounds</i> , <b>2017</b> , 722, 864-871     | 5.7 | 12 |
| 55 | Synthesis of double-shelled copper chalcogenide hollow nanocages as efficient counter electrodes for quantum dot-sensitized solar cells. <i>Materials Today Energy</i> , <b>2017</b> , 5, 331-337            | 7   | 12 |
| 54 | Unique porous yolk-shell structured Co3O4 anode for high performance lithium ion batteries. <i>Ceramics International</i> , <b>2017</b> , 43, 11058-11064  | 5.1 | 11 |
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| 51 | From harmful Microcystis blooms to multi-functional core-double-shell microsphere bio-hydrochar materials. <i>Scientific Reports</i> , <b>2017</b> , 7, 15477  | 4.9 | 11 |
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| 47 | The effect of copper species in copper-ceria catalysts: structure evolution and enhanced performance in CO oxidation. <i>RSC Advances</i> , <b>2016</b> , 6, 46966-46971                                     | 3.7 | 10 |
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| 45 | Robust, double-shelled ZnGaO hollow spheres for photocatalytic reduction of CO to methane. <i>Dalton Transactions</i> , <b>2017</b> , 46, 10564-10568  | 4.3 | 9  |
| 44 | Hollow copperderia microspheres with single and multiple shells for preferential CO oxidation. <i>CrystEngComm</i> , <b>2019</b> , 21, 3619-3626   | 3.3 | 9  |
| 43 | Controlled synthesis and lithium storage properties of Mn2O3 triple-shelled hollow spheres and porous spheres. <i>Materials Letters</i> , <b>2015</b> , 158, 416-419   | 3.3 | 9  |
| 42 | Ionic liquid assisted hydrothermal synthesis of MoS2 double-shell polyhedral cages with enhanced catalytic hydrogenation activities. <i>RSC Advances</i> , <b>2017</b> , 7, 23523-23529                      | 3.7 | 8  |

| 41 | Template-free synthesis of hierarchical MoO 2 multi-shell architectures with improved lithium storage capability. <i>Materials Research Bulletin</i> , <b>2017</b> , 91, 85-90   | 5.1 | 8 |
|----|--|-----|---|
| 40 | Coordination polymer derived general synthesis of multi-shelled hollow metal oxides for lithium-ion batteries. <i>Nanoscale</i> , <b>2019</b> , 11, 17478-17484  | 7.7 | 8 |
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| 36 | Controlling optical properties of metallic multi-shell nanoparticles through suppressed surface plasmon resonance. <i>Journal of Colloid and Interface Science</i> , <b>2016</b> , 461, 376-382  | 9.3 | 7 |
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| 34 | Fabrication of Yolk/Shell Partially Inverse Spinel Cobalt Ferrite/Mesoporous Silica Nanostructured Catalysts for Organic Pollutants Degradation by Peroxymonosulfate Activation. <i>Catalysis Letters</i> , <b>2017</b> , 147, 1732-1743 | 2.8 | 7 |
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| 29 | Facile synthesis of multi-shelled hollow CuCeO2 microspheres with promoted catalytic performance for preferential oxidation of CO. <i>Materials Chemistry and Physics</i> , <b>2019</b> , 226, 158-168                                   | 4.4 | 7 |
| 28 | The investigation of Ag decorated double-wall hollow TiO2 spheres as photocatalyst. <i>Applied Organometallic Chemistry</i> , <b>2018</b> , 32, e4160  | 3.1 | 7 |
| 27 | Synthesis of double-shell hollow magnetic Au-loaded ellipsoids as highly active and recoverable nanoreactors. <i>New Journal of Chemistry</i> , <b>2017</b> , 41, 4448-4457  | 3.6 | 6 |
| 26 | Activation of the Solid Silica Layer of Aerosol-Based C/SiOIParticles for Preparation of Various Functional Multishelled Hollow Microspheres. <i>Langmuir</i> , <b>2015</b> , 31, 5164-73  | 4   | 6 |
| 25 | Stabilizing the nanostructure of SnO2 anode by constructing heterogeneous yolk@shell hollow composite. <i>Applied Surface Science</i> , <b>2019</b> , 493, 838-846   | 6.7 | 6 |
| 24 | One-pot synthesis of double-shelled ZnV2O4 hollow nanostructures via a template-free route. <i>Materials Letters</i> , <b>2013</b> , 92, 231-234   | 3.3 | 6 |

| 23 | Synthesis and Optical Responses of Ag@Au/Ag@Au Double Shells. <i>Chinese Physics Letters</i> , <b>2015</b> , 32, 024205   | 1.8              | 5           |
|----|---|------------------|-------------|
| 22 | Facile fabrication of double-walled polymeric hollow spheres with independent temperature and pH dual-responsiveness for synergetic drug delivery. <i>Journal of Applied Polymer Science</i> , <b>2016</b> , 133,             | 2.9              | 5           |
| 21 | Nano-resoles-Enabled Elegant Nanostructured Materials. Chemistry - A European Journal, 2018, 24, 14   | 59 <b>გ.</b> 846 | 50 <b>3</b> |
| 20 | Controllable synthesis of multi-shelled NiCoO hollow spheres catalytically for the thermal decomposition of ammonium perchlorate <i>RSC Advances</i> , <b>2019</b> , 9, 23888-23893   | 3.7              | 5           |
| 19 | Polypyrrole single and double-shelled nanospheres templated by pyrrole⊞g(II) complex: Synthesis, characterization, formation mechanism and electrochemical performance. <i>Synthetic Metals</i> , <b>2014</b> , 197, 126-133  | 3.6              | 5           |
| 18 | Multishelled NiO Hollow Spheres Decorated by Graphene Nanosheets as Anodes for Lithium-Ion Batteries with Improved Reversible Capacity and Cycling Stability. <i>Journal of Nanomaterials</i> , <b>2016</b> , 2016, 1-6       | 3.2              | 5           |
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| 14 | Synthetic architecture of integrated nanocatalysts with controlled spatial distribution of metal nanoparticles. <i>Chemical Engineering Journal</i> , <b>2019</b> , 355, 320-334  | 14.7             | 4           |
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| 12 | Large scale combustion synthesis of glass-I-Fe2O3 double shell composite hollow microspheres with tunable magnetic property. <i>RSC Advances</i> , <b>2016</b> , 6, 47089-47095   | 3.7              | 4           |
| 11 | Multi-shelled LiMn1.95Co0.05O4 cages with a tunable Mn oxidation state for ultra-high lithium storage. <i>New Journal of Chemistry</i> , <b>2018</b> , 42, 3953-3960  | 3.6              | 3           |
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| 9  | A Facile Process for the Preparation of Three-Dimensional Hollow Zn(OH)2 Nanoflowers at Room Temperature. <i>Chemistry - A European Journal</i> , <b>2016</b> , 22, 11143-7   | 4.8              | 3           |
| 8  | Investigation of selective etching mechanism and its dependency on the particle size in preparation of hollow silica spheres. <i>Journal of Nanoparticle Research</i> , <b>2015</b> , 17, 1                                   | 2.3              | 2           |
| 7  | Three-dimensional observation of SiO2 hollow spheres with a double-shell structure using aberration-corrected scanning confocal electron microscopy. <i>Microscopy (Oxford, England)</i> , <b>2012</b> , 61, 159-69           | 1.3              | 2           |
| 6  | Mild Strategy to Fabricate Mnx Co3NO4 Multi-Shelled Hollow Spheres with Superior Catalytic Property in CO Oxidation. <i>Journal of Nanoscience and Nanotechnology</i> , <b>2018</b> , 18, 7775-7785                           | 1.3              | 2           |

0.8

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|---|---|------|---|
| 4 | Hybrid Supercapacitors from Framework Materials. <i>CheM</i> , <b>2016</b> , 1, 21-23   | 16.2 | 1 |
| 3 | Studies on pH-Controlled Transition of Myoglobin Capsules from Hollow to Multilayered Structures. <i>Adsorption Science and Technology</i> , <b>2015</b> , 33, 759-768  | 3.6  | 1 |
| 2 | The building of ZnO double-shells hollow spheres for CdS quantum dots sensitized solar cell. <i>IOP Conference Series: Materials Science and Engineering</i> , <b>2019</b> , 479, 012050                                | 0.4  |   |
|   | An Acoustic Hyperlens with Negative Direction Based on Double Split Hollow Sphere. <i>Journal of</i>  | 0.0  |   |

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