

<u>基本信息</u>	
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<u>教育背景</u>	
2008.09-2012.11	哈尔滨工业大学，化学工程与技术专业，工学博士
2006.09-2008.07	哈尔滨工业大学，无机化学专业，理学硕士
2002.09-2006.07	哈尔滨工业大学，应用化学专业，理学学士
<u>工作经历</u>	
2017.01-至今	北京理工大学，化学与化工学院，预聘助理教授
2016.07-2016.12	北京理工大学，化学与化工学院，讲师
2012.12-2016.06	北京理工大学，化工与环境学院，讲师
<u>研究方向</u>	
1.	固体氧化物电池
2.	钠离子电池
3.	新型锂二次电池
4.	电化学能源转换与存储技术
<u>荣誉奖励</u>	
1.	2018 年国家技术发明二等奖（第五完成人）
2.	2017 年教育部科技进步一等奖（第五完成人）
3.	2019 年全国石油和化工教育优秀教学团队成员（第三完成人）

<u>承担项目</u>	
1.	基于自恢复机制的微纳结构 SOFC 阳极材料的设计制备与电化学行为研究，国家自然科学基金青年项目，2016.01-2018.12，21 万，主持
2.	柔性锂空气电池的开发及其关键技术问题研究，特种化学电源国家重点实验室开放课题，2017.12-2019.12，10 万元，主持
3.	直接柴油/煤油燃料电池高效发电技术，装备预研领域基金重点项目，300 万元，2018.11-2020.12，300 万元，参与
4.	*****电源系统技术，总装备部，2011.07~2016.06，480 万，参与
<u>研究成果</u>	
<p>主要从事高温电化学（固体氧化物电池）、新型电化学储能技术（高比能量锂离子电池、锂氧电池、钠离子电池）的研究及应用开发，主持国家自然科学基金项目 1 项，国家重点实验室开放课题 1 项，参与总装“863”重大项目、企业横向课题多项，迄今在 <i>Adv. Energy Mater.</i>、<i>Appl. Catal. B-Environ.</i>、<i>J. Mater. Chem. A</i>、<i>Chem. Eng. J</i> 等期刊发表 SCI 论文 50 篇，授权国家发明专利 3 项，获 2017 年度教育部科技进步一等奖及 2018 年度国家技术发明二等奖（第五完成人）。</p>	
1.	在固体氧化物燃料电池领域，采用微纳异质结构调控、缺陷调控、纳米化设计的策略对钙钛矿氧化物电极材料进行优化改性，使其在燃料氧化、氧还原的电化学反应过程中表现出高催化活性，并表现出优异的抗积碳、耐硫中毒、耐 CO ₂ 毒化能力。
2.	在固体氧化物电解池领域，通过缺陷调控、微纳异质结构设计的手段，开发了新型钙钛矿氧化物阴极材料，显著改善了对 CO ₂ 的吸附能力和高温电催化活性。
3.	开发了新型异原子掺杂中空碳材料，作为锂/钠离子电池负极材料，表现出优异的循环及倍率性能。
4.	设计了从一维到三维的多种锂氧电池正极材料，改善了双功能催化活性，提高了电池的循环寿命。
5.	参与设计了新型正极材料、新体系隔膜材料，打通了全电池生产环节，研发了高比能量锂离子电池。
<u>代表性论文</u>	
1.	Ni Dan, Sun Wang* , Wang Zhenhua, Bai Yu, Lei Hongshuai, Lai Xinhua, Sun Kening*. Heteroatom-Doped Mesoporous Hollow Carbon Spheres for Fast Sodium Storage with an Ultralong Cycle Life. <i>Advanced Energy Materials</i> , 2019, 9: 1900036

2.	Xu Chunming, Sun Wang* , Ren Rongzheng, Yang Xiaoxia, Ma Minjian, Qiao Jinshuo, Wang Zhenhua, Zhen Shuying, Sun Kening*. A highly active and carbon-tolerant anode decorated with in situ grown cobalt nano-catalyst for intermediate-temperature solid oxide fuel cells. <i>Applied Catalysis B: Environmental</i> , 2021, 282: 119553
3.	Xu Chunming, Sun Kening, Yang Xiaoxia, Ma Minjian, Ren Rongzheng, Qiao Jinshuo, Wang Zhenhua, Zhen Shuying, Sun Wang* . Highly active and CO ₂ -tolerant Sr ₂ Fe _{1.3} Ga _{0.2} Mo _{0.5} O _{6-δ} cathode for intermediate-temperature solid oxide fuel cells. <i>Journal of Power Sources</i> , 2020, 450: 227722
4.	Yang Xiaoxia, Sun Kening, Ma Minjian, Xu Chunming, Ren Rongzheng, Qiao Jinshuo, Wang Zhenhua, Zhen Shuying, Hou Ruijun, Sun Wang* . Achieving strong chemical adsorption ability for efficient carbon dioxide electrolysis. <i>Applied Catalysis B: Environmental</i> , 2020, 272: 118968
5.	Zhang Lihong, Sun Wang* , Xu Chunming, Ren Rongzheng, Yang Xiaoxia, Qiao Jinshuo, Wang Zhenhua, Sun Kening, Attenuating metal-oxygen bond of double perovskite oxide via anion doping to enhance its catalytic activity for oxygen reduction reaction, <i>Journal of Materials Chemistry A</i> , 2020, 8: 14091-14098
6.	Xu Chuming. Zhen Shuying*. Ren Rongzheng. Chen Haosen. Song Weili. Wang Zhenhua. Sun Wang* . Sun Kening*. Cu-Doped Sr ₂ Fe _{1.5} Mo _{0.5} O _{6-δ} as a highly active cathode for solid oxide electrolytic cells. <i>Chemical Communications</i> , 2019, 55: 8009-8012
7.	Shen Junrong. Wu Haitao. Sun Wang* . Wu Qibing. Zhen Shuying. Wang Zhenhua. Sun Kening*. Biomass-derived hierarchically porous carbon skeletons with in situ decorated IrCo nanoparticles as high-performance cathode catalysts for Li-O ₂ batteries. <i>Journal of Materials Chemistry A</i> , 2019,7:10662-10671
8.	Shen Junrong, Wu Haitao, Sun Wang* , Qiao Jinshuo, Cai Huiqun, Wang Zhenhua, Sun Kening*. In-situ nitrogen-doped hierarchical porous hollow carbon spheres anchored with iridium nanoparticles as efficient cathode catalysts for reversible lithium-oxygen batteries. <i>Chemical Engineering Journal</i> , 2018, 358: 340-350
9.	Ni Dan, Sun Wang* , Lu Chengyi, Wang Zhenhua, Qiao Jinshuo, Cai Huiqun, Liu Chunhe, Sun Kening*. Improved rate and cycling performance of FeF ₂ -rGO hybrid cathode with poly (acrylic acid) binder for sodium ion batteries. <i>Journal of Power Sources</i> , 2018, 413: 449-458
10.	Wu Haitao, Sun Wang* , Shen Junrong, David W. Rooney, Wang Zhenhua, Sun Kening*. Role of flower-like ultrathin Co ₃ O ₄ nanosheets in water splitting and non-aqueous Li-O ₂ batteries. <i>Nanoscale</i> , 2018, 10: 10221-10231
11.	Wu Haitao, Sun Wang* , Shen Junrong, Lu Chengyi, Wang Yan, Wang Zhenhua, Sun Kening*. Improved structural design of single- and doublewall MnCo ₂ O ₄ nanotube cathodes for long-life Li-O ₂ batteries.

	Nanoscale, 2018, 10: 13149-13158
12.	Wu Haitao, Sun Wang* , Shen Junrong, Mao Zhu, Wang Huaguo, Cai Huiqun, Wang Zhenhua, Sun Kening*. Electrospinning Derived Hierarchically Porous Hollow CuCo_2O_4 Nanotubes as an Effectively Bifunctional Catalyst for Reversible Li-O ₂ Batteries. ACS sustainable chemistry & engineering, 2018, 6: 15180-15190
13.	Wu Haitao, Sun Wang* , Wang Yan, Wang Fang, Liu Junfei, Yue Xinyang, Wang Zhenhua, Qiao Jinshuo, David W. Rooney, Sun Kening *. Facile Synthesis of Hierarchical Porous Three-Dimensional Free-Standing MnCo_2O_4 Cathodes for Long-Life Li-O ₂ Batteries. ACS Applied Materials & Interfaces, 2017, 9: 12355-12365
14.	Ni Dan, Sun Wang* , Xie Liqiang, Fan Qinghua, Wang Zhenhua, Sun Kening*. Bismuth oxyfluoride @ CMK-3 nanocomposite as cathode for lithium ion batteries. Journal of Power Sources, 2017, 374: 166-174
15.	Sun Wang, Li Peiqian, Xu Chunming, Dong Linkun, Qiao Jinshuo, Wang Zhenhua, David Rooney, Sun Kening*. Investigation of Sc doped $\text{Sr}_2\text{Fe}_{1.5}\text{Mo}_{0.5}\text{O}_6$ as a cathode material for intermediate temperature solid oxide fuel cells. Journal of Power Sources, 2017, 343: 237-245
16.	Sun Wang, Wang Yan, Wu Haitao, Wang Zhenhua, David Rooney, Sun Kening*. 3D free-standing hierarchical CuCo_2O_4 nanowire cathodes for rechargeable lithium–oxygen batteries. Chemistry Communications, 2017, 53: 8711-8714
17.	Yang Yuxiang, Sun Wang*, Zhang Jing, Yue Xinyang, Wang Zhenhua, Sun Kening*. High rate and stable cycling of lithium-sulfur batteries with carbon fiber cloth interlayer. Electrochimica Acta, 2016, 209: 691-699
18.	Sun Wang[#] , Ou Xianguo [#] , Yue Xinyang, Yang Yuxiang, Wang Zhenhua, David Rooney, Sun Kening*. A simply effective double-coating cathode with MnO_2 nanosheets/ graphene as functionalized interlayer for high performance lithium-sulfur batteries. Electrochimica Acta, 2016, 207: 198-206
19.	Yue Xinyang, Sun Wang* , Zhang Jing, Wang Fang, Yang Yuxiang, Lu Chengyi, Wang Zhenhua, David Rooney, Sun Kening*. Macro-mesoporous hollow carbon spheres as anodes for lithium-ion batteries with high rate capability and excellent cycling performance. Journal of Power Sources, 2016, 331: 10-15
20.	Li Pengfa, Zhang Jiakai, Yu Qilin, Qiao Jinshuo, Wang Zhenhua, David Rooney, Sun Wang* , Sun Kening*. One-dimensional porous $\text{La}_{0.5}\text{Sr}_{0.5}\text{CoO}_{2.91}$ nanotubes as a highly efficient electrocatalyst for rechargeable lithium-oxygen batteries. Electrochimica Acta, 2015, 165: 78-84
21.	Hou Mingyue, Sun Wang* , Li Pengfa, Feng Jie, Yang Guoquan, Qiao Jinshuo, Wang Zhenhua, David Rooney, Feng Jinsheng*, Sun Kening*. Investigation into the effect of molybdenum-site substitution on the

	performance of $\text{Sr}_2\text{Fe}_{1.5}\text{Mo}_{0.5}\text{O}_{6d}$ for intermediate temperature solid oxide fuel cells. <i>Journal of Power Sources</i> , 2014, 272: 759-765
22.	Zhang Jiakai, Li Pengfa, Wang Zhenhua, Qiao Jinshuo, David Rooney, Sun Wang* , Sun Kening*. Three-dimensional graphene- Co_3O_4 cathodes for rechargeable Li- O_2 batteries. <i>Journal of Materials Chemistry A</i> , 2014, 3: 1504-1510
23.	Sun Wang , Zhang Naiqing, Mao Yachun, Sun Kening*. Fabrication of anode-supported Sc_2O_3 -stabilized- ZrO_2 electrolyte micro-tubular Solid Oxide Fuel Cell by phase-inversion and dip-coating. <i>Electrochemistry Communications</i> , 2012, 20: 117-120
24.	Sun Wang, Zhang Naiqing, Mao Yachun, Sun Kening*. Facile one-step fabrication of dual-pore anode for planar solid oxide fuel cell by the phase inversion. <i>Electrochemistry Communications</i> , 2012, 22: 41-44
25.	Sun Wang, Zhang Naiqing, Mao Yachun*, Sun Kening*. Preparation of dual-pore anode supported Sc_2O_3 -stabilized- ZrO_2 electrolyte planar solid oxide fuel cell by phase-inversion and dip-coating. <i>Journal of Power Sources</i> , 2012, 218: 352-356