近期热点文章
Latest and Hot Papers

Size-Dependent Electrocatalytic Reduction of CO_2 over Pd Nanoparticles
D. Gao, H. Zhou, J. Wang, S. Miao, F. Yang, G. Wang, J. Wang, X. Bao
J. Am. Chem. Soc. DOI: 10.1021/jacs.5b00046
CO_2 还原反应 Pd 纳米催化剂的粒度效应. 发现 3.7 nm 时 CO 产率可达 91.2%.

Platinum Multicubes Prepared by Ni^{2+}-Mediated Shape Evolution Exhibit High Electrocatalytic Activity for Oxygen Reduction
L. Ma, C. Wang, B. Y. Xia, K. Mao, J. He, X. Wu, Y. Xiong, X. W. Lou
Angew. Chem. Int. Ed. DOI: 10.1002/anie.201500947
通过 Ni^{2+} 控制多立方体状 Pt 纳米催化剂的晶面演化,使纳米立方体交界出现高指数晶面,因而表现出对氧还原反应(ORR)高催化活性.

Solvated Graphene Frameworks as High-Performance Anodes for Lithium-Ion Batteries
Y. Xu, Z. Lin, X. Zhong, B. Papandrea, Y. Huang, X. Duan
Angew. Chem. Int. Ed. DOI: 10.1002/anie.201500677
采用可溶剂化石墨烯制备锂离子电池负极,表现出多级孔结构,具有高的充放电可逆性和容量.

Electrochemically Mediated Atom Transfer Radical Polymerization from a Substrate Surface Manipulated by Bipolar Electrolysis: Fabrication of Gradient and Patterned Polymer Brushes
N. Shida, Y. Koizumi, H. Nishiyama, I. Tomita, S. Inagi
Angew. Chem. Int. Ed. DOI: 10.1002/anie.201501647
双极性电解实现表面的原子转移聚合反应,合成出具有三维梯度形状的聚合物刷.

Fabrication of Three-Dimensionally Interconnected Nanoparticle Superlattices and Their Lithium-Ion Storage Properties
Y. Jiao, D. Han, Y. Ding, X. Zhang, G. Guo, J. Hu, D. Yang, A. Dong
Nature Commun. DOI: 10.1038/ncomms7420
一种纳米粒子自组装成三维密堆积超晶格的方法,用于制备锂离子电池 SnO 负极材料.

Ultrathin Platinum Nanowires Grown on Single-Layered Nickel Hydroxide With High Hydrogen Evolution Activity
H. Yin, S. Zhao, K. Zhao, A. Muqsit, H. Tang, L. Chang, H. Zhao, Y. Gao, Z. Tang
Nature Commun. DOI: 10.1038/ncomms7430
在单层 $Ni(OH)_2$ 上生长 Pt 纳米线,表现出高的氢析出反应(HER)催化性能.

Interlayer-Expanded Molybdenum Disulfide Nanocomposites for Electrochemical Magnesium Storage
Y. Liang, H. D. Yoo, Y. Li, J. Shuai, H. A. Calderon, F. C. R. Hernandez, L. C. Grabow, Y. Yao
Nano Lett. 15 (2015) 2194.
一种扩张层状化合物层间距的方法, 以此处理的 MoS_2 可用作镁离子电池正极储镁材料.

High Selectivity for Ethylene from Carbon Dioxide Reduction over Copper Nanocube Electrocatalysts
F. S. Roberts, K. P. Kuhl, A. Nilsson
Angew. Chem. Int. Ed. DOI: 10.1002/anie.201412214
Cu 立方纳米粒子催化 CO_2 还原反应,可高选择性地获得乙烯.

Synthesis of Carbon/Sulfur Nanolaminates by Electrochemical Extraction of Titanium from Ti_2SC
M.-Q. Zhao, M. Sedran, Z. Ling, M. R. Lukatskaya, O. Mashtalir, M. Ghidiu, B. Dyatkin, D. J. Tallman, T. Djenizian, M. W. Barsoum,Y. Gogotsi
Angew. Chem. Int. Ed. DOI: 10.1002/anie.201500110
一种从三元材料 MAX 中去除金属组分 M 的电化学方法, 从而获得难制备的 AX 层状纳米材料. 以 Ti_2SC 为例制得锂硫电池正极材料.

Observation and Quantification of Nanoscale Processes in Lithium Batteries by Operando Electrochemical (S)TEM
B. L. Mehdi, J. Qian, E. Nasybulin, C. Park, D. A. Welch, R. Faller, H. Mehta, W. A. Henderson, W. Xu, C. M. Wang, J. E. Evans, J. Liu, J. -G. Zhang, K. T. Mueller, N. D. Browning
Nano Lett. 15 (2015) 2168.
观察锂离子电池负极嵌脱锂过程的电化学 Operando 方法,可定量观测固体电解质界面(SEI)的变化.

Recent Achievements on Inorganic Electrode Materials for Lithium-Ion Batteries
L. Croguennec, M. R. Palacin
J. Am. Chem. Soc. 137 (2015) 3140.
关于锂离子电池无机电极材料的展望文章. 引用了214 篇参考文献.

Fe-P: A New Class of Electroactive Catalyst for Oxygen Reduction Reaction
K. P. Singh, E. J. Bae, J.-S. Yu
J. Am. Chem. Soc. 137 (2015) 3165.
含 Fe 磷杂碳材料(Fe-P-C),对酸性介质中的 ORR 表现一定的催化活性.

Stable Silicon-Ionic Liquid Interface for Next-Generation Lithium-Ion Batteries
D. M. Piper, T. Evans, K. Leung, T. Watkins, J. Olson, S. C. Kim, S. S. Han, V. Bhat, K. H. Oh, D. A. Buttry, S.-H. Lee
Nature Commun. DOI: 10.1038/ncomms7230
以室温离子液体为电解质的锂离子电池 Si 负极研究,500 周充放电循环后容量保持 70%以上.

Octahedral Pd@$Pt_{1.8}$Ni Core-Shell Nanocrystals with Ultrathin PtNi Alloy Shells as Active Catalysts for Oxygen Reduction Reaction
X. Zhao, S. Chen, Z. Fang, J. Ding, W. Sang, Y. Wang, J. Zhao, Z. Peng, J. Zeng
J. Am. Chem. Soc. 137 (2015) 2804.
Pd@$Pt_{1.8}$Ni 核-壳结构八面体纳米催化剂, 对 ORR 的催化活性约为 Pt/C 的 5 倍.

Electroneutrality Breakdown and Specific Ion Effects in Nanoconfined Aqueous Electrolytes Observed by NMR
Z.-X. Luo, Y.-Z. Xing, Y.-C. Ling, A. Kleinhammes, Y. Wu
Nature Commun. DOI: 10.1038/ncomms7358
采用 NMR 研究多孔石墨化碳材料中纳米限域的水溶液,发现随着材料表面荷电情况的改变,溶液中离子电中性被打破.

High Rate and Stable Cycling of Lithium Metal Anode
J. Qian, W. A. Henderson, W. Xu, P. Bhattacharya, M. Engelhard, O. Borodin, J.-G. Zhang
Nature Commun. DOI: 10.1038/ncomms7362
以高浓度电解液抑制金属 Li 枝晶的生长, 实现金属 Li 负极的高速稳定充放电,4 mA·cm^{-2} 充放1000 周库仑效率保持 98.4%.

The Role of Graphene for Electrochemical Energy Storage
R. Raccichini, A. Varzi, S. Passerini, B. Scrosati
Nature Mater. 14 (2015) 271.
关于石墨烯材料用于电化学储能的研究进展报告. 引用了 100 篇参考文献.

Formation of Nickel Sulfide Nanoframes from Metal-Organic Frameworks with Enhanced Pseudocapacitive and Electrocatalytic Properties
X.-Y. Yu, L. Yu, H. Bin Wu, X. W. Lou
Angew. Chem. Int. Ed. DOI: 10.1002/anie.201500267
从金属框架化合物 MOF 转化为三维纳米框架 NiS 材料, 表现出优良的赝电容和碱性介质中 HER 电催化性能.

Extended π-Conjugated System for Fast-Charge and-Discharge Sodium-Ion Batteries
C. Wang, Y. Xu, Y. Fang, M. Zhou, L. Liang, S. Singh, H. Zhao, A. Schober, Y. Lei
J. Am. Chem. Soc. 137 (2015) 3124.
以 π 共轭有机材料为钠离子电池储钠电极材料, 可实现 10 A·g^{-1} 的高速充放电.

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