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Latest and Hot Papers

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近期热点文章
Latest and Hot Papers

Metal-Free Dihydrogen Oxidation by a Borenium Cation: A Combined Electrochemical/Frustrated Lewis Pair Approach

E. J. Lawrence, T. J. Herrington, A. E. Ashley, G. G. Wildgoose

Angew. Chem. Int. Ed. DOI:10.1002/anie.201405721

以一种含硼杂环分子为电子传递媒介,催化有机介质中的氢氧化反应(HOR).

Exfoliation of Layered Double Hydroxides for Enhanced Oxygen Evolution Catalysis

F. Song, X. Hu

Nature Commun. DOI: 10.1038/ncomms5477

制备单层 NiCo 层状双氢氧化物(LDH),用于催化碱性介质中的氧析出反应(OER),表现出高于 IrO_2 的活性.

How Surface Potential Determines the Kinetics of the First Hole Transfer of Photocatalytic Water Oxidation

M. M. Waegele, X. Chen, D. M. Herlihy, T. Cuk

J. Am. Chem. Soc. DOI:10.1021/ja503603k

运用暂态光谱方法研究水氧化过程 *n*-$SrTiO_3$ 与 OH^- 之间的空穴转移过程.

Ligand Modification Transforms a Catalase Mimic into a Water Oxidation Catalyst

W.-T. Lee, S. B. Muñoz III, D. A. Dickie, J. M. Smith

Angew. Chem. Int. Ed. DOI:10.1002/anie.201402407

通过将 Mn 配合物的取代基团从 H 或 Me 改为大体积的 tBu,可关闭其催化 H_2O_2 歧化反应的活性,激活催化水氧化反应的活性.

Self-Supported Cu_3P Nanowire Arrays as an Integrated High-Performance Three-Dimensional Cathode for Generating Hydrogen from Water

J. Tian, Q. Liu, N. Cheng, A. M. Asiri, X. Sun

Angew. Chem. Int. Ed. DOI: 10.1002/anie.201403842

多孔 Cu 泡沫支撑的 Cu_3P 纳米线阵列, 对酸性介质中的氢析出反应(HER)具有高的催化活性.

Rechargeable Lithium-Sulfur Batteries

A. Manthiram, Y. Fu, S.-H. Chung, C. Zu, Y.-S. Su

Chem. Rev. DOI: 10.1021/cr500062v

锂硫电池的综述. 引用了 183 篇参考文献.

Insertion-Type Electrodes for Nonaqueous Li-Ion Capacitors

V. Aravindan, J. Gnanaraj, Y.-S. Lee, S, Madhavi

Chem. Rev. DOI: 10.1021/cr5000915

非水锂离子电容器嵌入式电极的综述. 引用了 161 篇参考文献.

Synthesis of Structurally Ordered Pt_3Ti and Pt_3V Nanoparticles as Methanol Oxidation Catalysts

Z. Cui, H. Chen, M. Zhao, D. Marshall , Y. Yu, H. Abruña, F. J. DiSalvo

J. Am. Chem. Soc. DOI: 10.1021/ja504573a

合成小粒径 Pt_3Ti 和 Pt_3V 金属间化合物纳米颗粒,对甲醇氧化反应(MOR)具有优于 Pt 的催化活性和稳定性.

Water Oxidation by a Nickel-Glycine Catalyst

D. Wang, G. Ghirlanda, J. P. Allen

J. Am. Chem. Soc. DOI: 10.1021/ja504282w

以 Ni 的甘氨酸配合物为前体得到的氢氧化镍催化 pH 11 介质中的 OER, 超电势小于 0.5 V 时获得 1 $mA\cdot cm^{-2}$ 的电流密度.

High-Rate Oxygen Electroreduction over Graphitic-N Species Exposed on 3D Hierarchically Porous Nitrogen-Doped Carbons

W. He, C. Jiang, J. Wang, L. Lu

Angew. Chem. Int. Ed. DOI: 10.1002/anie.201404333

合成了具有多级孔结构的三维氮杂碳,对碱性介质中的氧还原反应(ORR)具有高的催化活性,且抗甲醇.

Mesoporous Silicon Sponge as An Anti-Pulverization Structure for High-Performance Lithium-Ion Battery Anodes

X. Li, M. Gu, S. Hu, R. Kennard, P. Yan, X. Chen, C.

Wang, M. J. Sailor, J. -G. Zhang, J. Liu
Nature Commun. DOI: 10.1038/ncomms5150
合成了具有海绵结构的介孔 Si 材料,用作锂离子电池负极材料,具有 ~750mAh·g^{-1} 的容量,循环 1000 周后容量保持 > 80%.

Electrochemical Tuning of Layered Lithium Transition Metal Oxides for Improvement of Oxygen Evolution Reaction
Z. Lu, H. Wang, D. Kong, K. Yan, P. -C. Hsu, G. Zheng, H. Yao, Z. Liang, X. Sun, Y. Cui
Nature Commun. DOI: 10.1038/ncomms5345
在有机介质中制备部分脱锂的 $LiMO_2$ (M = Fe, Co, or Ni),对碱性介质中的 OER 具有高的催化活性.

Regulating Proton-Coupled Electron Transfer for Efficient Water Splitting by Manganese Oxides at Neutral pH
A. Yamaguchi, R. Inuzuka, T. Takashima, T. Hayashi, K. Hashimoto, R. Nakamura
Nature Commun. DOI: 10.1038/ncomms5256
通过加入吡啶及其衍生物, 调控 Mn 离子催化中性介质 OER 的质子耦合电子转移过程.

Mn_xO_y/NC and Co_xO_y/NC Nanoparticles Embedded in a Nitrogen-Doped Carbon Matrix for High-Performance Bifunctional Oxygen Electrodes
J. Masa, W. Xia, I. Sinev, A. Zhao, Z. Sun, S. Grützke, P. Weide, M. Muhler, W. Schuhmann
Angew. Chem. Int. Ed. DOI: 10.1002/anie.201402710
将 Mn_3O_4 和 Co_3O_4 纳米颗粒嵌入到氮杂碳网络中,形成可催化 OER 和 ORR 的双功能氧电极催化剂.

Capturing Metastable Structures during High-Rate Cycling of $LiFePO_4$ Nanoparticle Electrodes
H. Liu, F. C. Strobridge, O. J. Borkiewicz, K. M. Wiaderek, K. W. Chapman, P. J. Chupas, C. P. Grey
Science DOI: 10.1126/science.1252817
采用时间分辨现场 X 射线粉末衍射技术, 研究 $LiFePO_4$ 纳米颗粒在高倍率嵌/脱锂循环过程中的亚稳态结构.

Ultrasensitive Electrochemical Biomolecular Detection Using Nanostructured Microelectrodes
A. T. Sage, J. D. Besant, B. Lam, E. H. Sargent, S. O. Kelley
Acc. Chem. Res. DOI: 10.1021/ar500130m
关于用纳米结构微电极进行超灵敏电化学生物分子检测的综述. 引用了 49 篇参考文献.

Pt Skin on AuCu Intermetallic Substrate: A Strategy to Maximize Pt Utilization for Fuel Cells
G. Wang, B. Huang, L. Xiao, Z. Ren, H. Chen, D. Wang, H. D. Abrunña, J. Lu, L. Zhuang
J. Am. Chem. Soc. 136 (2014) 6578.
AuCu 金属间化合物纳米粒子覆盖 1.5 单层的 Pt,对 ORR 的面积催化活性是 Pt/C 催化剂的两倍,质量催化活性达 0.56 A·mg^{-1}Pt@0.9 V.

General Synthesis of Multi-Shelled Mixed Metal Oxide Hollow Spheres with Superior Lithium Storage Properties
G. Zhang, X. W. Lou
Angew. Chem. Int. Ed. DOI: 10.1002/anie.201404604
合成多层空壳结构的复合金属氧化材料, 具有高达 726 mAh·g^{-1} 的储锂容量,200 周循环容量保持 100%.

Anion Charge Storage through Oxygen Intercalation in $LaMnO_3$ Perovskite Pseudocapacitor Electrodes
J. T. Mefford, W. G. Hardin, S. Dai, K. P. Johnston, K. J. Stevenson
Nature Mater. 13 (2014) 726.
研究基于 $LaMnO_3$ 钙钛矿的氧化还原电极的氧离子嵌入行为,提出基于阴离子嵌入的储能电极的思想.

Beyond the Active Site: The Impact of the Outer Coordination Sphere on Electrocatalysts for Hydrogen Production and Oxidation
B. Ginovska-Pangovska, A. Dutta, M. L. Reback, J. C. Linehan, W. J. Shaw
Acc. Chem. Res. DOI: 10.1021/ar5001742
关于 NiFe 氢化酶外部配位环境对 HER 与 HOR 的影响的综述. 引用了 45 篇参考文献.

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