Prof. Dr Yongquan Qu (瞿永泉)

Employment

Feb/2012-present	Principal Investigator at the level of Professor, Center for Applied Chemical Research (CACR), Frontier Institute of Science and Technology (FIST), Xi'an Jiaotong University (XJTU), China
Feb/2009-Feb/2011	Postdoctoral, Department of Chemistry & Biochemistry, University of California, Los Angeles

Education

Oct/2004-Jan/2009	Ph. D in Chemistry University of California, Davis
Sep/2001-Jun/2004	M.S. in Chemistry Dalian Institute of Chemical physics, Chinese Academy of Sciences
Oct/1997-Jun/2001	B.S. in Material Science and Engineering Nanjing University

Awards

- "Bairen" Shanxi Province, 2012
- 1000 Young Talent Plan, 2012

Research Interests

- Sustainable Electrocatalysts for Eletrocatalytic Oxygen Evolution Reaction and Hydrogen Evolution Reactions. Focus on Well Defined Transitional Metal (Hydr)oxides
- Sustainable Photoelectrodes/Photocatalysts for Water Splitting and Organic Catalysis. Focus on the Rationally Designed Architecture with Long-Term Performance
- Sustainable High Temperature Catalysis. Focus on Anti-Coking and Anti-Sintering of Metal Nanoclusters under High Temperature for Important Catalytic Processes including CO Oxidation, Methane Reforming, Soot Reactions, etc.
- Sustainable Systems for Heterogeneous Organic Catalysis
- Sustainable Electroactive Materials for Energy Storage
- Understanding the Biological Phenomena from Catalytic Behavior

Book Chapter

1. **Qu Y.**; Lien J; and Guo, T.* Synthesis of symmetric and asymmetric nanosilica for materials, optical, and medical applications. Nanomaterials for the Life Sciences Vol. 2: Nanostructures Oxides. Edited by Challa S.S. Kumar, 2009 WILEY-VCH, 2009, 55-82.
2. **Qu Y.**; and Han, K. L.* Structures of semiconductor surfaces and origins of surface reactivity with organic molecules. Functionalization of Semiconductor Surfaces, WILEY-VCH, 2012, 27.
3. **Qu Y.***; and Duan, X. F.* Porous silicon nanowires. Processing, Properties, and Applications of Nanowires of Silicon and Silicides. Stanford Publishing, 2013, 389-412.
4. Ma Y.; Li J.; **Qu Y.*** One-Dimensional Silicon Nanowire Composites for Photocatalysis. Edited by Yugang Sun, World Scientific Series in Nanoscience and Nanotechnology: Volume 12 Nanomaterials for Photocatalytic Chemistry, World Scientific, 2016, 57-80.

Patent

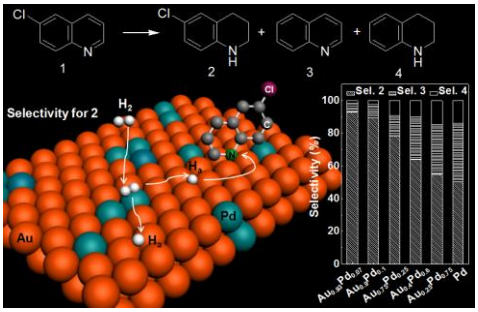
1. **Qu Y.**; Li J.; Ma Y. Cerium dioxide nanoparticles and methods for their preparation and use. PCT/CN2014/071872.
2. **Qu Y.**; Ma Y.; Tian Z. Porous nanorods of ceria based ELISA devices for detection of bio-molecules. 201510213393.9.

Publications

Xi'an Jiaotong University

2017

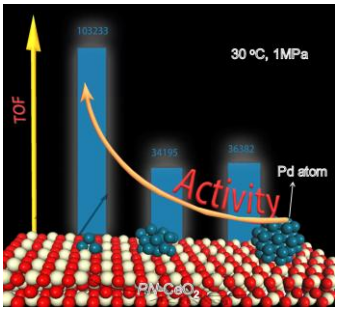
1. Zhang S.; Xia Z. M.; Ni T.; Zhang H.; Wu C.; Wu Z.; Wang Y. and **Qu Y.*** Tuning chemical compositions of bimetallic AuPd catalysts for selective catalytic hydrogenation of halogenated quinolines. Submitted to ***Journal of Material Chemistry A***, 2017, Under Revision.



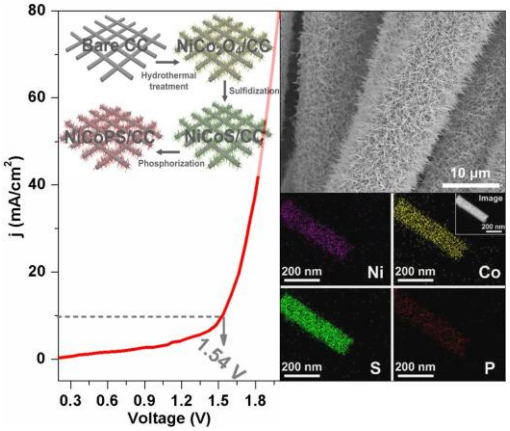
2. Zhang S.; Huang Z. Q., Ma Y.; Gao W.; Li J.; Chang C. R.* and **Qu Y.*** All-Solid Frustrated Lewis

Pair Catalysts Constructed by Surface Regulations on the Defects of Porous Nanorods of CeO2 for Hydrogenation of Alkenes and Alkynes, ***Nature Communications***, 2017, Under Revision.

3. Zhang S.; Li J.; Xia Z.M.; Wu C.; Zhang Z. Y.; Ma Y. and **Qu Y.*** Towards highly active Pd/CeO_2 for alkene hydrogenation by tuning Pd dispersion and surface properties of catalysts. Submitted to ***Nanoscale***, 2017, under revision.



4. Li J.; Xia Z.; Zhou X.; Qin W.; Ma Y. and **Qu Y.*** Quaternary pyrite-structural nickel/cobalt phosphosulphide nanowires on carbon cloth as efficient and robust bifunctional electrodes for water electrolysis, ***Nano Research***, 2017, Accepted.



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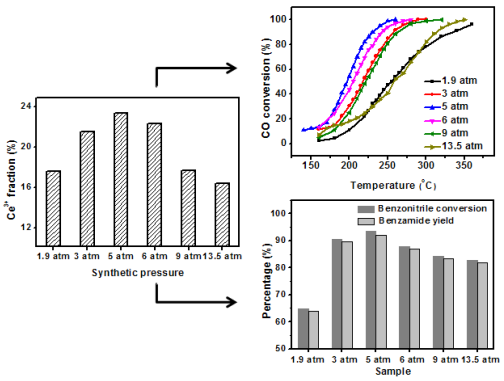
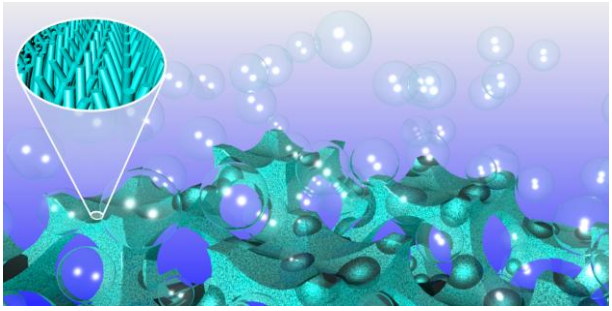
5. Li J.; Gao W.; Zhang Z.; Zhang S.; Ma Y.* and **Qu Y.*** Pressure regulations on the surface properties of CeO_2 nanorods and their catalytic activity for CO oxidation and nitrile hydrolysis reactions. ***ACS Applied Materials & Interfaces***, 2016, 8, 22988-22996.

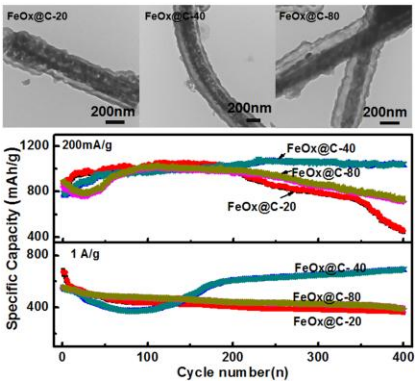


6. Xiao S.; Chen H.; Jiang F.; Bai Y.; Zhu Z.; Zhang T.; Zheng X.; Qian G.; Hu C.; Zhou Y.; **Qu Y.** and Yang S.* Hierarchical Dual-scaffolds Enhance Charge Separation and Collection for High Efficiency Semitransparent Perovskite Solar Cells. ***Advanced Materials Interfaces***. 2016, DOI: 10.1002/admi.201600484.

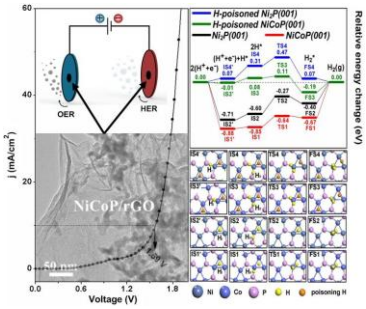
7. Fang M.; Gao W.; Dong G.; Xia Z.; Yip S.; Qin Q.; **Qu Y.*** and Ho J. C.* Hierarchical NiMo-Based 3D Electrocatalysts for Highly-Efficient Hydrogen Evolution. ***Nano Energy***, 2016, 27, 247-254.



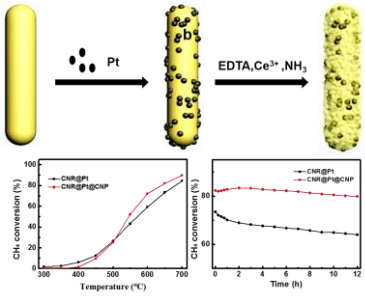
8. Li X.; Ma Y.*; Cao G. and **Qu. Y.*** FeO_x@carbon yolk/shell nanowires with tailored void spaces as stable and high-capacity anodes for lithium ion battery. ***Journal of Material Chemistry A***, 2016, 4, 12487 - 12496.



9. Li J. Y.; Yan M.; Zhou X. M.; Xia Z. M.; Chang C.R.;* Ma Y.* and **Qu Y.*** Highly active and robust ternary $Ni_{2-x}Co_xP$/graphene hybrids for hydrogen evolution reaction over a wide pH range of 0-14. ***Advanced Functional Materials***, 2016, 26, 6785-6796.



10. Zhang Z.; Li J.; Gao W.; Xia Z.; Qin Y.; **Qu Y.** and Ma Y.* Thermally stable sandwich-type catalysts of Pt nanoparticles encapsulated in CeO_2 nanorod/CeO_2 nanoparticle core/shell supports for methane oxidation at high temperatures. ***RSC Advances***, 2016, 6, 40323-40329.



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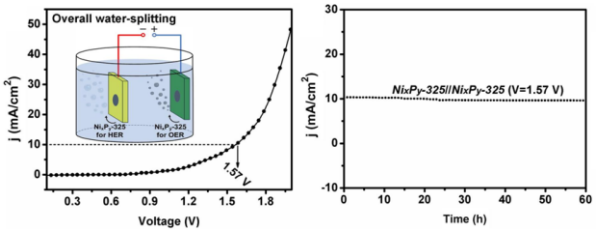

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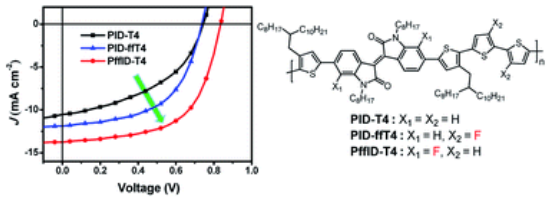

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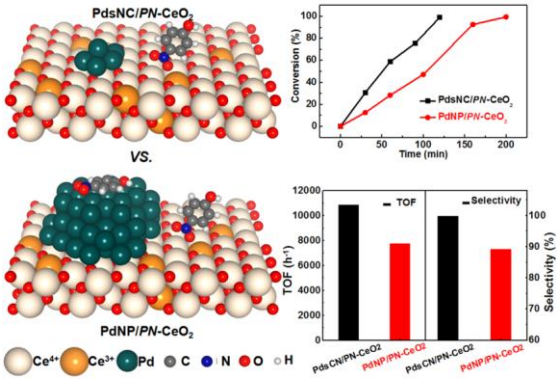

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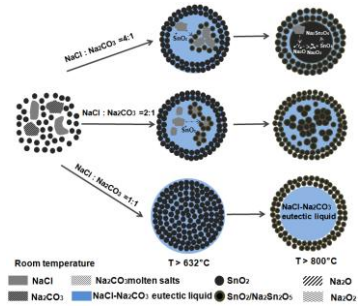

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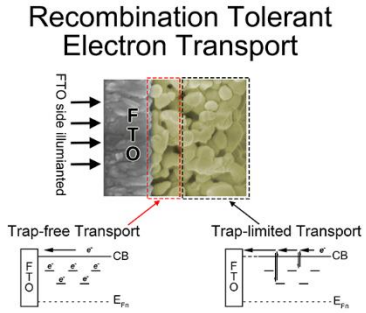
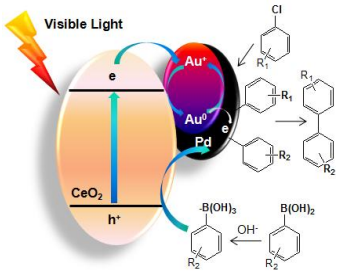
15. Xiao S.; Chen H.; Yang Z.; Long X.; Wang Z.; Zhu Z.; **<u>Qu Y.</u>**; Yang S. * Origin of the Different Photoelectrochemical Performance of Mesoporous $BiVO_4$ Photoanodes between the $BiVO_4$ and the FTO Side Illumination. ***The Journal of Physical Chemistry C***, 2015, 23350-23357.



16. Zhang S.; Gao W.; Ma Y.; **<u>Qu Y.</u>*** Visible-Light-Activated Suzuki-Miyaura Coupling Reactions of Aryl Chlorides over the Multifunctional Pd/Au/Porous Nanorods of CeO_2 Catalysts. ***ACS Catalysis***, 2015, 5, 6481-6488.



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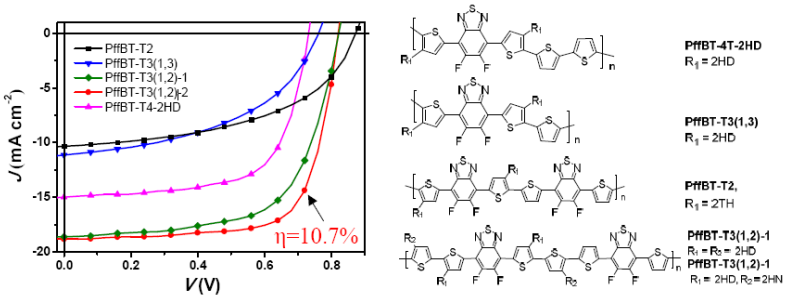
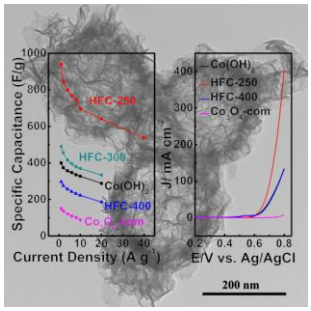


18. Zhou X. M.; Shen X. T.; Xia Z. M.; Zhang Z. Y.; Li J.; Ma Y.*; **Qu Y.***, Hollow fluffy Co_3O_4 cages as efficient electroactive materials for supercapacitors and oxygen evolution reaction. ***ACS Applied Materials & Interfaces***, 2015, 7, 20322-20331.



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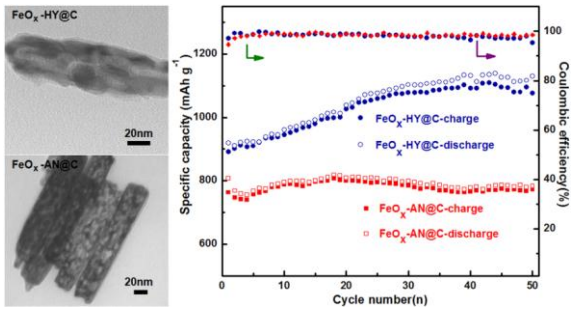

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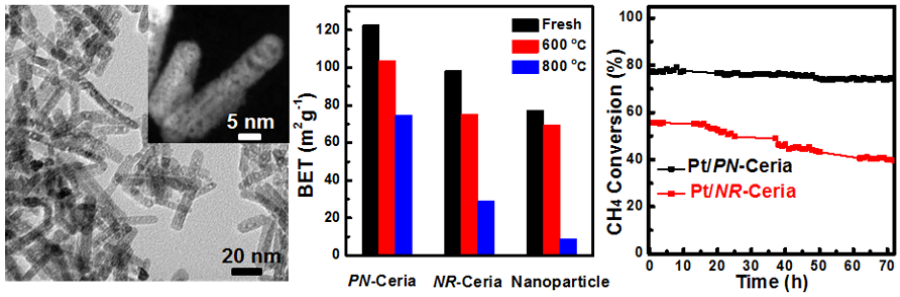
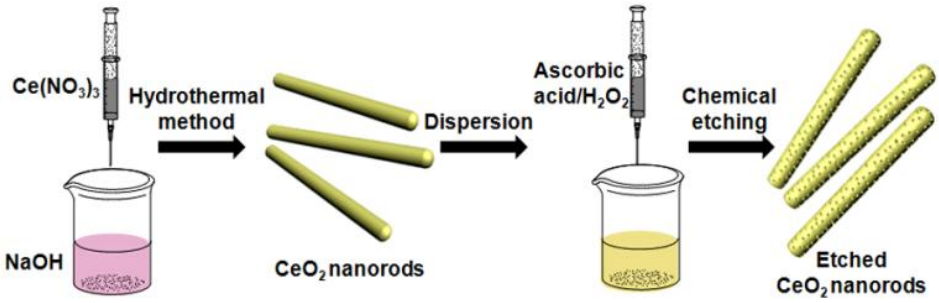


21. Xia Z.; Zhou X.; Li J.; **Qu Y.*** Protection strategy for improved catalytic stability of silicon photoanodes for water oxidation. ***Science Bulletins.***, **2015**, 60, 1395-1402. (Invited Review).
22. Gao W.; Zhang Z.; Li J.; Ma Y.*; **Qu Y.*** Surface Engineering on CeO_2 Nanorods by Chemical Redox Etching and their Enhanced Catalytic Activity for CO Oxidation. ***Nanoscale*, 2015,** 7, 11686-11691.



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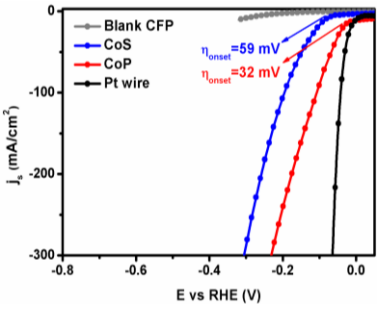

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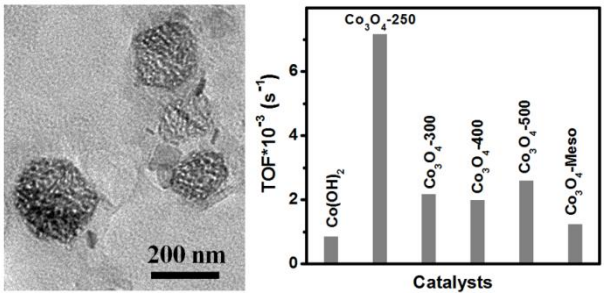
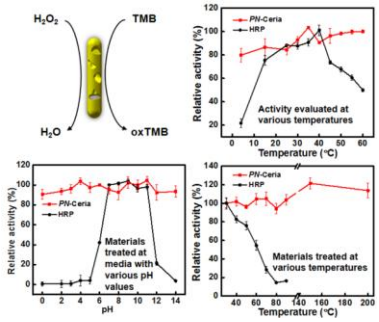
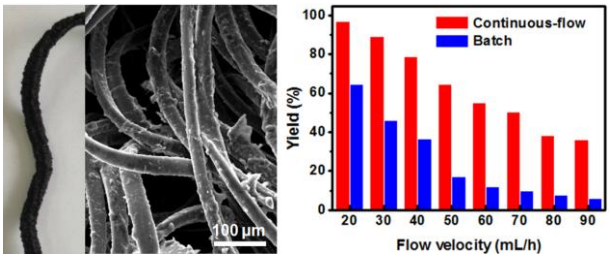


25. Tian Z.; Li J.; Zhang Z.; Gao W.; Zhou X.; **Qu Y.*** Highly sensitive and robust peroxidase-like activity of porous nanorods of ceria and their application for breast cancer detection, ***Biomaterials,*** *2015*, 59, 116-124.



26. Zhang S.; Ma Y.; Shen X.; Zheng Z.; Ma Y.* and **Qu Y.*** 3D Graphene/Nylon Rope as Skeleton of Noble Metal Nanocatalysts for Highly Efficient Heterogeneous Continuous-Flow Reaction, ***Journal of Material Chemistry A,*** *2015*, 10504-10511.



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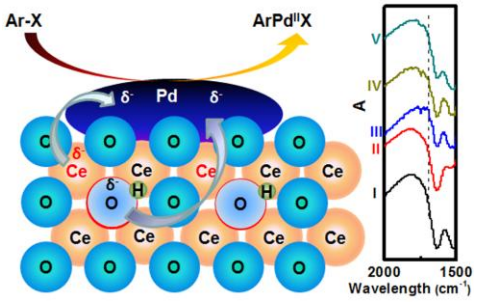

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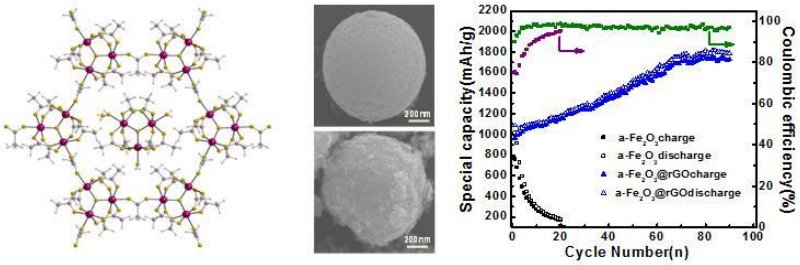

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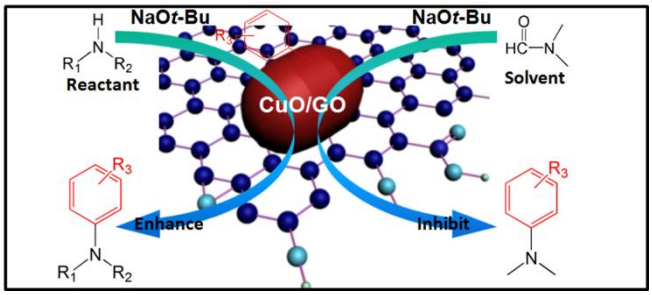

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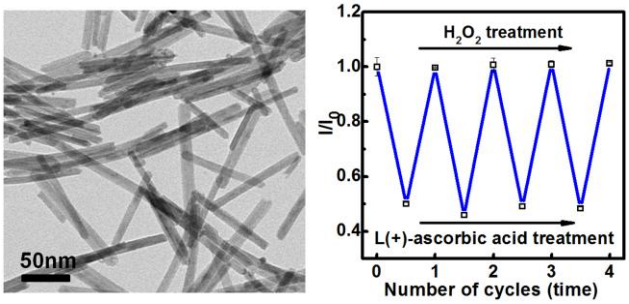

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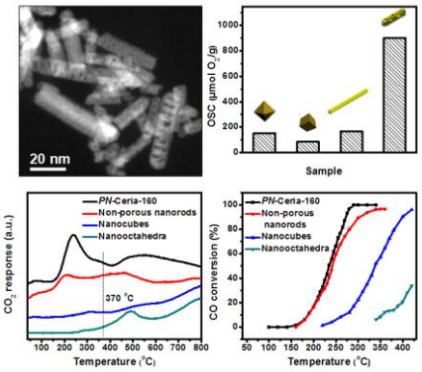

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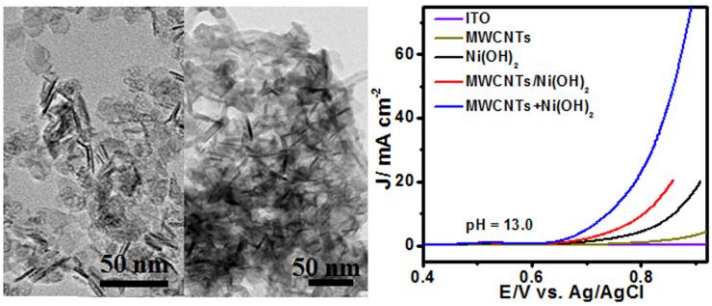

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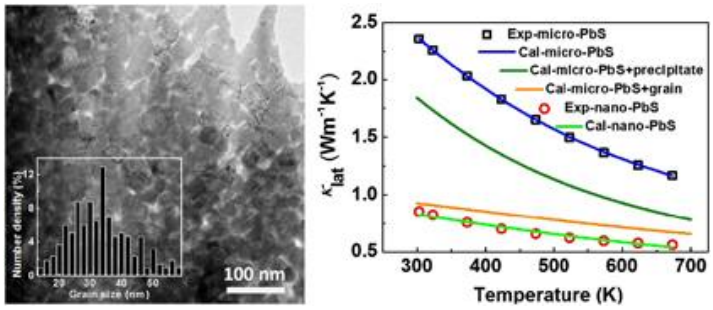

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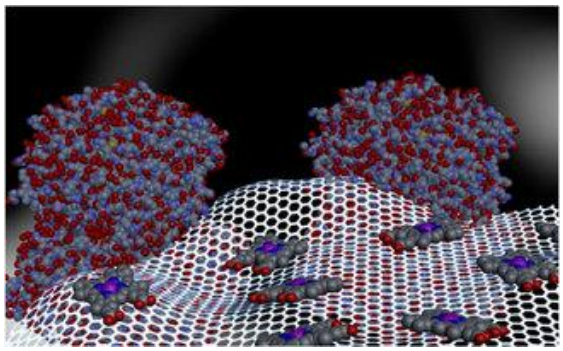

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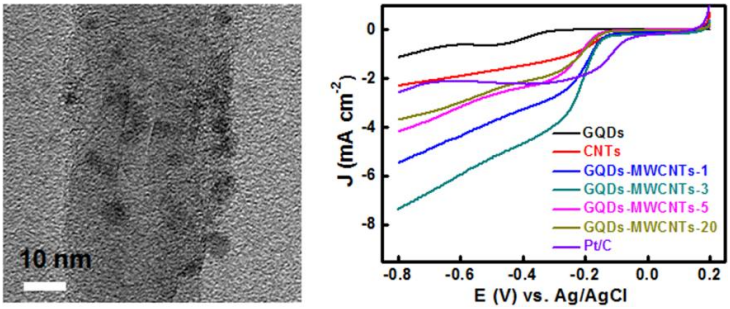

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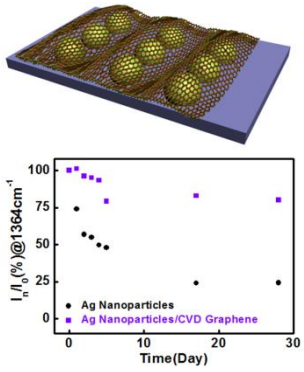

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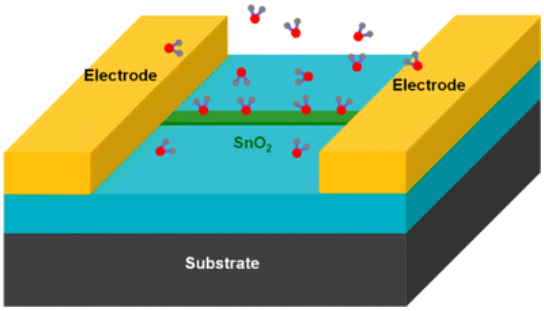

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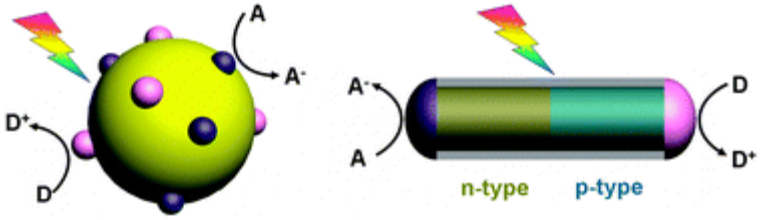

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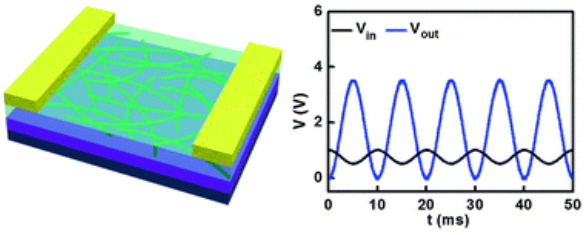

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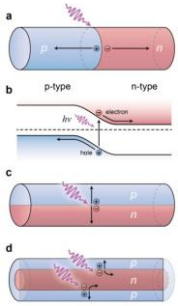

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