

Electrocatalysis of Single Entities

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Abstract: Due to the importance of electrocatalysis in energy process, we study the electrocatalysis at single-molecule single-entity level. In this talk, I will introduce the application of single-molecule fluorescence microscopy in the single-particle-electrocatalyzed hydrogen oxidation reaction oxygen reduction reaction and methanol oxidation reaction for the revealing of novel new information for these important reactions in energy transfer devices [1-3]. Moreover, I will also introduce some new work in our lab about the developing of highly efficient single-atom electrocatalysts for energy transfer devices [4-5].

References:

- [1] Tao Chen, Weilin Xu et al. *Angew. Chem. Int. Ed.* 2016, 55, 1839.
- [2] Yuwei Zhang, Weilin Xu et al. *PNAS* 2015, 112, 8959.
- [3] Yi Xiao, Weilin Xu et al. *JACS*, 2020, DOI: 10.1021/jacs.0c06020
- [4] Jing Liu, Weilin Xu et al. *Angew. Chem. Int. Ed.* 2019, 58, 1163.
- [5] Fa Yang, Weilin Xu et al. *Angew. Chem.* 2018, 57, 12303.

Biography: Prof. Weilin Xu graduated from Jilin University with Bachelor's degree in 2001. He obtained his Ph. Degree from Changchun Institute of Applied Chemistry (CIAC) in 2006. After that, he did postdoc research at Cornell University, UC Berkeley and Lawrence Berkeley National Lab, sub sequentially. In 2012, he joined CIAC and built his own research group by focusing on energy process-related basic (single-molecule single-particle nanocatalysis) and practical (functional materials for fuel cells) research.

