BING YAN

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MIT, Cambridge, MA 02139

PROFESSIONAL APPOINTMENTS

Massachusetts Institute of Technologyy *Aug 2019 - Present*
Postdoctoral Associate
Host: Prof. Yuriy Román, Department of Chemical Engineering
Research Focus: Electrochemcial activation of C-C bonds for plastic and biomass deconstruction

EDUCATION

Massachusetts Institute of Technologyy *Sep 2014 - Jun 2019*
Ph.D. in Chemistry
Advisor: Prof. Yogesh Surendranath
Thesis: Designing Interfacial Structures for Selective Electrocatalysis

Peking University, China *Sep 2010 - Jul 2014*
B.S. in Chemistry
Advisor: Prof. Song Gao
Thesis: Synthesis and Properties of Dysprosium-based Single-Molecule Magnets
Graduated with **Highest Honor** (10 laureates every 2 years)

PUBLICATIONS

Bing Yan, Changxia Shi, Gregg T Beckham, Eugene Y.-X. Chen, Yuriy Román-Leshkov. "Electrochemical Activation of C-C Bonds via Mediated Hydrogen Atom Transfer Reactions" *In Revision. ChemRxiv. Preprint*, 2021.

Bing Yan, Ryan P. Bisbey, Alexander Alabugin, Yogesh Surendranath. "Mixed Electron-Proton Conductors Enable Spatial Separation of Bond Activation and Charge Transfer in Electrocatalysis." *J. Am. Chem. Soc.*, 2019, 141, 11115-11122.

Bing Yan, Dilip Krishnamurthy, Christopher H. Hendon, Siddharth Deshpande, Yogesh Surendranath, Venkatasubramanian Viswanathan. "Surface Restructuring of Nickel Sulfide Generates Optimally Coordinated Active Sites for Oxygen Reduction Catalysis." *Joule*, 2017, 1, 600-612. (**Referred to by** Fang Song, Jordan Katz, Xile Hu. "Catalyst Surface Dynamics Reveals a Simple Geometric Descriptor of Activity" *Joule*, 2017, 1, 421-430.)

Bing Yan, Nolan M. Concannon, Yogesh Surendranath. **Inside Cover**: "A Membrane-Free Neutral pH Formate Fuel Cell Enabled by a Selective Ni_3S_2 Oxygen Reduction Catalyst." *Angew. Chem. Int. Ed.*, 2017, 56, 7496-7499.

Youngmin Yoon, **Bing Yan**, Yogesh Surendranath. "Suppressing Ion Transfer Enables Versatile Measurements of Electrochemical Surface Area for Intrinsic Activity Comparisons." *J. Am. Chem. Soc.*, 2018, 140, 2397-2400.

Joseph M. Falkowski, Nolan M. Concannon, **Bing Yan**, Yogesh Surendranath. "Heazlewoodite, Ni_3S_2: A Potent Catalyst for Oxygen Reduction to Water under Benign Conditions." *J. Am. Chem. Soc.*, 2015, 137, 7978-7981.

Wen-Bin Sun, **Bing Yan**, Li-Hui Jia, Bing-Wu Wang, Qian Yang, Xin Cheng, Hong-Feng Li, Peng Chen, Zhe-Ming Wang, Song Gao. "Dinuclear Dysprosium SMMs Bridged by a Neutral Bipyrimidine Ligand: Two Crystal Systems that Depend on Different Lattice Solvents Lead to a Distinct Slow Relaxation Behavior." *Dalton Trans.*, 2016, 45, 8790-8794.

Wen-Bin Sun, **Bing Yan**, Yi-Quan Zhang, Bing-Wu Wang, Zhe-Ming Wang, Jun-Hua Jia, Song Gao. "The Slow Magnetic Relaxation Regulated by Ligand Conformation of a Lanthanide Single-Ion Magnet $[Hex_4N][Dy(DBM)_4]$." *Inorg. Chem. Front.*, 2014, 1, 503-509.

AWARDS & HONORS

Moore Fellowship 2018

Women in Chemistry Professional Development Grant 2017

Merit Student of Beijing (top 1%) 2012

TALKS & POSTERS

2021 AIChE Annual Meeting (Oral): "Mediated Oxidative Carbon-Carbon Bond Activation and Application to Polystyrene Decomposition." Nov 2021, Boston

MIT Chemistry Student Seminar (Oral): "Selective Oxygen Reduction and Hydrogen Oxidation Catalysis for Fuel Cells." May 2018, Cambridge

Electrochemistry Gordon Research Seminar & Conference (Oral): "Exploiting Hydrogen Spillover for Selective Electrocatalysis." Jan 2018, Ventura

Sixth Annual C3E Women in Clean Energy Symposium (Poster): "Selective Cathode and Anode Electrocatalysis for Membrane-Free Fuel Cells." Nov 2017, Cambridge

The 68th Annual Meeting of the International Society of Electrochemistry (Oral): "Oxygen Reduction Catalyst Ni_3S_2 Oxidative Surface Restructuring and Application in Membrane-Free Fuel Cells." Aug 2017, Providence

Nanomaterials for Applications in Energy Technology Gordon Research Seminar and Conference (Poster): "ORR Catalyst Ni_3S_2 Oxidative Surface Restructuring and Application in Mixed-Reactant Fuel Cells." Feb 2017, Ventura

250th ACS National Meeting (Poster): "Transition Metal Chalcogenide Nanofilms: Oxygen Reduction Reaction Catalysts Prepared by E-ALD." Aug 2015, Boston

TEACHING & MENTORING

Outreach

Putnam Avenue Upper School (PAUS) with NetPals STEM Explorations Club Jan - May 2021

East Boston Public High School 2015 - 2019

Teaching Assistant

Principle of Inorganic Chemistry II Aug - Dec 2015

Organic & Inorganic Laboratory Aug - Dec 2014

Mentoring Undergraduates

Alexander Alabugin Jun - Aug 2017

Nolan M. Concannon Jun 2015 - Dec 2016

PROFESSIONAL SERVICE

Reviewer for Journal of Nanotechnology 2018

Reviewer for Chemistry of Materials 2017