

BING YAN

E-mail: bing.yan@nyu.edu
Homepage: <http://bingyan.me>

EDUCATION

- New York University** *Sep 2022 - Present*
Ph.D. in Computer Science
Advisors: Prof. Kyunghyun Cho and Prof. Joan Bruna
Thesis: Learning-Based Molecule Design and Chemical Reaction Modeling
- Massachusetts Institute of Technology** *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)

PROFESSIONAL APPOINTMENTS

- Massachusetts Institute of Technology** *Aug 2019 - Aug 2022*
Postdoctoral Associate
Advisor: Prof. Yuriy Román, Department of Chemical Engineering
Research Focus: Electrochemical activation of C-C bonds for plastic and biomass deconstruction

PUBLICATIONS

- 10 **Bing Yan**, Kyunghyun Cho. “CatScore: A High-Efficiency Evaluation Metric for Asymmetric Catalyst Design” *ChemRxiv*, 2023.
- 9 **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” *ChemSusChem.*, 2022, 15, e2021023. *Very Important Paper*.
- 8 **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.
- 7 **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.)

- 6 **Bing Yan**, Nolan M. Concannon, Jarrod D. Milshtein, Fikile R. Brushett, Yogesh Surendranath. **Inside Cover**: “A Membrane-Free Neutral pH Formate Fuel Cell Enabled by a Selective Ni₃S₂ Oxygen Reduction Catalyst.” *Angew. Chem. Int. Ed.*, 2017, 56, 7496-7499.
- 5 Siru Ouyang, Zhuosheng Zhang, **Bing Yan**, Xuan Liu, Jiawei Han, Lianhui Qin. “Structured Chemistry Reasoning with Large Language Models.” *arXiv*, 2023.
- 4 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.
- 3 Joseph M. Falkowski, Nolan M. Concannon, **Bing Yan**, Yogesh Surendranath. “Heazlewoodite, Ni₃S₂: A Potent Catalyst for Oxygen Reduction to Water under Benign Conditions.” *J. Am. Chem. Soc.*, 2015, 137, 7978-7981.
- 2 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.
- 1 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 [Hex₄N][Dy(DBM)₄].” *Inorg. Chem. Front.*, 2014, 1, 503-509.

PATENT

Yogesh Surendranath, **Bing Yan**, Marcel Schreier. “Driving Heterogeneous Catalysis via Electrochemical Proton Pumping in Proton-Electron Conducting Films.” APPL. No.: 62/717,381

AWARDS & HONORS

Henry M. MacCracken Fellowship (full graduate funding)	2022-2027
Rowland Fellowship finalist	2021
Moore Fellowship	2018
Women in Chemistry Professional Development Grant	2017
Dow Chemistry scholarship	2013
Hui-Chun Chin and Tsung-Dao Lee Chinese Undergraduate Research Endowment	2013
National Fund for Fostering Talents of Basic Sciences (NSFC J1030413)	2013
Merit Student of Beijing (top 1%)	2012
SK scholarship	2012
Canon scholarship	2011

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 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 EMNLP 2023

Organizer for NYU CILVR Seminar Series 2023

Organizer for NYU AI School 2023

AIChE Young Professional volunteer 2021

Reviewer for Journal of Nanotechnology 2018

Reviewer for Chemistry of Materials 2017