Max Joshua Hülsey
PhD – National University of Singapore
Schmidt Science Fellow - MIT

Department of Chemistry
Massachusetts Institute of Technology
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Personal details

Email: mhuelsey@mit.edu
Phone number: +1-617-949-6236
Nationality: German
Date of Birth: 23rd April 1993

Professional Appointments

2022 – **Schmidt Science Fellow in Chemistry**
Massachusetts Institute of Technology
Advisor: Prof. Yogesh Surendranath (Department of Chemistry)
Co-Advisor: Prof. Yuriy Román-Leshkov (Department of Chemical Engineering)

2021 **Research Fellow in Chemical Engineering**
National University of Singapore
Advisor: Prof. Ning Yan

Education

2017 – 2021 **Ph.D. in Chemical Engineering**
National University of Singapore
Advisor: Prof. Ning Yan
Thesis: Single-Atom Catalysts Supported on Polyoxometalates – Applications, Spectroscopic and Spectrometric Studies

2019 Academic exchange Oct-2019-Dec-2019
ETH Zurich
Advisor: Prof. Javier Pérez-Ramírez

2015 – 2017 **M.Sc. in Chemistry**
Heidelberg University
Advisor: Prof. Yuriy Román-Leshkov (*Massachusetts Institute of Technology*)
Thesis: Transition Metal based Catalysts and their use in Lignin Depolymerization and Upgrading

2012 – 2015 **B.Sc. in Biochemistry**
Heidelberg University
Advisor: Prof. Nora Kulak, Chemistry (*Free University of Berlin*)
Thesis: Anthraquinonyl-cyclen complexes and their interaction with DNA

Funding Acquisition

2022 – 2024 Personal Grant for the project proposal "Dynamic non-Faradaic conversion of CO_2 to ethylene" as part of the Schmidt Science Fellowship, Schmidt Science Fellows, in partnership with the Rhodes Trust (200,000 USD), **Project awarded**

2023	"Advanced Scientometrics for Tackling the Reproducibility Crisis in STEM", Schmidt Futures, 250,000 USD, **Submitted (Co-PI)**
2020	"Experimental and Theoretical Study on Polyoxometalates Supported Single-Atom Catalysts for Hydrogenation Reaction", Major Research Project, National Natural Science Foundation China, proposed budget: 800,000 RMB, **Grant awarded**
2017 – 2021	Personal Grant for the Ph.D. project SINGA scholarship "Single-atom catalysts for sustainable chemical transformations" (200,000 USD), **Project awarded**
2015 – 2017	Personal Grant for my M.Sc. studies, "Deutschlandstipendium" (7,200 EUR)

List of publications – refereed

^ denotes co-first authorship
* denotes (co)-corresponding authorship

39. Sikai Wang, Hua An, **Max J. Hülsey**, Geng Sun, Qian He, Ning Yan*, "Sulfite-enhanced Aerobic Methane Oxidation to Methanol over Reduced Phosphomolybdate"
Under review.

38. Jinquan Chang,^ Sikai Wang, **Max J. Hülsey**, Shi Nee Lou, Xinbin Ma,* Ning Yan*, 'Electrothermal Conversion of Methane to Methanol at Room-Temperature with Phosphotungstic Acid'
Under review.
Preprint: https://doi.org/10.21203/rs.3.rs-3575070/v1

37. **Max J Hülsey**,^ Geng Sun,^ Bin Zhang,^ Yao Xu, Shipeng Ding, Sie Shing Wong, Ying Zheng, Shinya Furukawa, Hiroyuki Asakura, Yongqiang Cheng, Zili Wu, Rui Si, Ding Ma, Philippe Sautet,* Ning Yan,* "Zero-valent Pd atoms anchored on polyoxometalate for low temperature hydrodeoxygenation"
Under review.
Preprint: https://doi.org/10.26434/chemrxiv.13414691.v1

36. **Max J. Hülsey**, Onyu Jung, Daniel Bregante, Sophia Weng, Wei Lun Toh, Yogesh Surendranath,* "Electrochemical SSITKA reveals interfacial CO_2 exchange kinetics under electrolysis"
Under review.

35. Karl S. Westendorff, **Max J. Hülsey**, Thejas S. Wesley, Yuriy Román-Leshkov,* Yogesh Surendranath,* "Electrically-Driven Proton Transfer Promotes Brønsted Acid Catalysis by Orders of Magnitude"
Under revision
Preprint: https://doi.org/10.26434/chemrxiv-2023-wjrm5

34. Sikai Wang, Victor Fung, **Max J. Hülsey**, Xiaocong Liang, Zhiyang Yu, Jinquan Chang, Andrea Folli, Richard J. Lewis, Graham J. Hutchings,* Qian He,* Ning Yan*, "H_2-reduced phosphomolybdate promotes room-temperature aerobic oxidation of methane to methanol"
Nat. Catal., **2023**, 6, 895-905
https://doi.org/10.1038/s41929-023-01011-5

33. Thejas S. Wesley,^ **Max J. Hülsey**,^ Noah Lewis,^ Karl S. Westendorff,^ Ethan Crumlin,* Yuriy Román-Leshkov,* Yogesh Surendranath,* "Metal nanoparticles supported on a nonconductive oxide undergo pH-dependent spontaneous polarization"
Chem. Sci., **2023**, 14, 7154-7160.
https://doi.org/10.1039/D3SC00884C

32. **Max J. Hülsey,*** Sikai Wang, Bin Zhang, Shipeng Ding, Ning Yan,* "Single-atom catalysts with molecular definition"
Acc. Chem. Res., **2023**, 56, 561-572.
https://doi.org/10.1021/acs.accounts.2c00728

31. Jinquan Chang,^ **Max J. Hülsey**,^ Sikai Wang, Maoshuai Li, Xinbin Ma,* Ning Yan*, "Electro-thermal Water Gas Shift Reaction with Pd_1/CsSMA Single Atom Catalyst at Room Temperature"
Angew. Chem. Int. Ed., **2023**, 62, e202218265.
https://doi.org/10.1002/ange.202218265

30. Ying Zheng, Qiang Wang, Qi Yang, Sikai Wang, **Max J. Hülsey**, Shipeng Ding, Shinya Furukawa, Maoshuai Li, Ning Yan, Xinbin Ma "Boosting the hydroformylation activity of Rh/CeO_2 single-atom catalyst by tuning surface deficiencies"
ACS Catal., **2023**, 13, 7243-7255.
https://doi.org/10.1021/acscatal.3c00810

29. Hua An, Geng Sun, **Max J. Hülsey**, Philippe Sautet, Ning Yan,* "Demonstrating the electron-proton transfer mechanism of aqueous phase 4-nitrophenol hydrogenation using unbiased electrochemical cells"
ACS Catal., **2022**, 12, 15021-15027.
https://doi.org/10.1021/acscatal.2c03133

28. Sie Shing, **Max J. Hülsey**, Hua An, Ning Yan,* "Quantum Yield Enhancement in Photocatalytic HCOOH Decomposition to H_2 under Periodic Illumination"
Catal. Sci. Technol., **2022**, 12, 5217-5228.
https://doi.org/10.1039/D2CY00935H

27. Ricca Rahman Nasaruddin,* **Max J. Hülsey**, Jianping Xie,* "Enhancing catalytic properties of ligand-protected gold-based 25-metal atom nanoclusters by silver doping"
Mol. Catal., **2022**, 518, 112095.
https://doi.org/10.1016/j.mcat.2021.112095

26. **Max J. Hülsey**,^ Victor Fung,^ Xudong Hou, Jishan Wu, Ning Yan,* "Hydrogen spillover and its relation to catalysis: observations on structurally defined single-atom sites"
Angew. Chem. Int. Ed. (Very Important Paper), **2022**, 61, e202208237.
https://doi.org/10.1002/anie.202208237

25. **Max J. Hülsey,** Sambath Baskaran, Shipeng Ding, Sikai Wang, Hiroyuki Asakura, Shinya Furukawa, Shibo Xi, Qi Yu, Cong-Qiao Xu, Jun Li,* Ning Yan,* "Identifying Key Descriptors for the Single-atom Catalyzed CO Oxidation"
CCS Chem, **2022**, 4, 3296-3308.
https://doi.org/10.31635/ccschem.022.202201914

24. Chia Wei Lim,^ **Max J. Hülsey**,^ Ning Yan,* "Non-Faradaic Promotion of Ethylene Hydrogenation Under Oscillating Potentials"
JACS Au, **2021**, 1, 536-542. (featured in AAAS EurekAlert, phys.org, and NUS News)
https://doi.org/10.1021/jacsau.1c00044

23. **Max J. Hülsey**, Geng Sun, Philippe Sautet, Ning Yan,* "Observing single-atom catalytic sites during reactions with electrospray ionization mass spectrometry"
Angew. Chem. Int. Ed., **2021**, 60, 4764-4773. https://doi.org/10.1002/anie.202011632

22. **Max J. Hülsey**,^ Chia Wei Lim,^ Sie Shing Wong, Ning Yan,* "Coverage-dependant formic acid oxidation reaction kinetics determined by oscillating potentials"
Mol. Catal., **2021**, 504, 111482.
https://doi.org/10.1016/j.mcat.2021.111482

21. Shipeng Ding, **Max J. Hülsey**, Qian He, Hiroyuki Asakura,* Min Gao,* Jun-ya Hasegawa, Tsunehiro Tanaka, Ning Yan,* "Ionic Liquid-Stabilized Single-atom Rh Catalyst against Leaching"
CCS Chem., **2021**, 3, 1814-1822.
https://doi.org/10.31635/ccschem.021.202101063

20. Yaxuan Jing. Yanqing Wang, Shinya Furukawa, Chengyang Sun, **Max J. Hülsey**, Yong Guo, Xiaohui Liu, Ning Yan,* "Towards the circular economy: converting aromatic plastic wastes back to arenes over Ru/Nb_2O_5 catalyst"
Angew. Chem. Int. Ed., **2021**, 60, 5527-5535.
https://doi.org/10.1002/anie.202011063

19. Fanghua Li, **Max J. Hülsey**, Ning Yan, Yanjun Dai, Chi-Hwa Wang,* "Co-transesterification of waste cooking oil, algal oil and dimethyl carbonate over sustainable nanoparticle catalysts"
Chem. Eng. J., **2021**, 405, 127036.
https://doi.org/10.1016/j.cej.2020.127036

18. Shipeng Ding, Hsi-An Chen, Okorn Mekasuwandumrong, **Max J. Hülsey**, Xinpu Fu, Qian He, Joongjai Panpranot, Chia-Min Yang, Ning Yan,* "High-temperature Flame Spray Pyrolysis Induced Stabilization of Pt Single-Atom Catalysts"
Appl. Catal. B Environ., **2021**, 281, 119471.
https://doi.org/10.1016/j.apcatb.2020.119471

17. **Max J. Hülsey**, Chia Wei Lim, Ning Yan,* "Promoting heterogeneous catalysis beyond catalyst design"
Chem. Sci., **2020**, 11, 1456-1468.
https://doi.org/10.1039/C9SC05947D

16. Qiming Sun, Benjamin W. J. Chen, Ning Wang, Qian He, Albert Chang, Chia-Min Yang, Hiroyuki Asakura, Tsunehiro Tanaka, **Max J. Hülsey**, Chi-Hwa Wang, Jihong Yu,* Ning Yan,* "Zeolite-Encaged Pd-Mn Nanocatalysts for CO_2 Hydrogenation and Formic Acid Decomposition"
Angew. Chem. Int. Ed., **2020**, 132, 20358-20366.
https://doi.org/10.1002/anie.202008962

15. Song Song,^ Jiafu Qu,^ Peijie Han,^ **Max J. Hülsey**, Guping Zhang, Yunzhu Wang, Shuai Wang, Dongyun Chen,* Jianmei Liu,* Ning Yan,* "Visible-Light-Driven Amino Acids Production from Biomass-based Feedstocks over Ultrathin CdS Nanosheets"
Nat. Commun., **2020**, 11, 4899.
https://doi.org/10.1038/s41467-020-18532-3

14. Shipeng Ding,^ Yalin Guo,^ **Max J. Hülsey**, Bin Zhang, Hiroyuki Asakura,* Lingmei Liu, Yu Han, Min Gao, Jun-ya Hasegawa,* Botao Qiao,* Tao Zhang, Ning Yan,* "Electrostatic Stabilization of Single-Atom Catalysts by Ionic Liquids" (featured in Chem, Eurekalert, phys.org, etc.)
Chem, **2019**, 5, 1-13.
https://doi.org/10.1016/j.chempr.2019.10.007

13. Shipeng Ding, **Max J. Hülsey**, Javier Pérez-Ramírez,* Ning Yan,* "Transforming energy with single-atom catalysts"
Joule, **2019**, 3, 1-33.
https://doi.org/10.1016/j.joule.2019.09.015

12. Zhenhua Zhang, Liyuan Zhang, **Max J. Hülsey**, Ning Yan,* "Zirconia phase effect in Pd/ZrO_2 catalyzed CO_2 hydrogenation into formate"
Mol. Catal., **2019**, 475, 110461.
https://doi.org/10.1016/j.mcat.2019.110461

11. Zhenhua Zhang, Liyuan Zhang, Siyu Yao, Xiaozhe Song, Weixin Huang, **Max J. Hülsey**,* Ning Yan,* "Support-dependent rate-determining step of CO_2 hydrogenation to formic acid on metal oxide supported Pd catalysts"
J. Catal., **2019**, 376, 57-67.
https://doi.org/10.1016/j.jcat.2019.06.048

10. **Max J. Hülsey**,^ Bin Zhang,^ Zhirui Ma, Hiroyuki Asakura, David N. Do, Wei Chen, Tsunehiro Tanaka, Peng Zhang, Zili Wu, Ning Yan,* "In situ Spectroscopy-Guided Engineering of Rhodium Single-Atom Catalysts for CO Oxidation"
Nat. Commun., **2019**, 10, 1330.
https://doi.org/10.1038/s41467-019-09188-9

9. **Max J. Hülsey**, Jiaguang Zhang, Ning Yan,* "Harnessing the Wisdom in Colloidal Chemistry to make Stable Single-Atom Catalysts"
Adv. Mater., **2018**, 30 (47), 1802304.
https://doi.org/10.1002/adma.201802304

8. **Max J. Hülsey**, Huiying Yang, Ning Yan,* "Sustainable routes for the synthesis of renewable heteroatom-containing chemicals"
ACS Sustain. Chem. Eng., **2018**, 6 (5), 5694-5707.
https://doi.org/10.1021/acssuschemeng.8b00612

7. **Max J. Hülsey**,* "Shell Biorefinery: A Comprehensive Introduction"
Green Energy Environ., **2018**, 3 (4), 318-327.
https://doi.org/10.1016/j.gee.2018.07.007

6. Ricca Rahman Nasaruddin, Qiaofeng Yao, Tiankai Chen, **Max J. Hülsey**, Ning Yan,* Jianping Xie,* "Hydride-Induced Ligand Dynamic and Structural Transformation of Gold Nanoclusters during Catalytic Reaction"
Nanoscale, **2018**, 10, 23113-23121.
https://doi.org/10.1039/C8NR07197G

5. Eric Anderson, Michael L. Stone, **Max J. Hülsey**, Gregg T. Beckham,* Yuriy Román-Leshkov,* "Kinetic Studies of Lignin Solvolysis and Reduction for the Production of Monomers by Flow-through Reductive Catalytic Fractionation"
ACS Sustain. Chem. Eng., **2018**, 6 (6), 7951–7959 (Editor's choice).
https://doi.org/10.1021/acssuschemeng.8b01256

4. Jan Hormann, Jaroslav Malina, Oliver Lemke, **Max J. Hülsey**, Stefanie Wedepohl, Jan Potthoff, Claudia Schmidt, Ingo Ott, Bettina G. Keller, Viktor Brabec, Nora Kulak,* "Multiply intercalator-substituted Cu(II) cyclen complexes as DNA condensers and DNA/RNA synthesis inhibitors" *Inorg. Chem.*, **2018**, 57 (9), 5004-5012.
https://doi.org/10.1021/acs.inorgchem.8b00027

3. Weiping Deng,^ Yunzhu Wang,^ Sui Zhang, Krishna M. Gupta, **Max J. Hülsey**, Hiroyuki Asakura, Lingmei Liu, Yu Han, Eric M Karp, Gregg T. Beckham, Paul J. Dyson, Jianwen Jiang, Tsunehiro Tanaka, Ye Wang, Ning Yan,* "Catalytic amino acid production from biomass-derived intermediates" (featured in Chem, Chin. J. Catal., The Straits Times, phys.org, etc.)
Proc. Natl. Acad. Sci. U. S. A., **2018**, 115, 5093-5098.
https://doi.org/10.1073/pnas.1800272115

2. Sudipta De, Maria V. Babak, **Max J. Hülsey**, Wee Han Ang,* Ning Yan,* "Designed precursor for the controlled synthesis of highly active atomic and sub-nanometric platinum catalysts on mesoporous silica"
Chem. Asian J., **2018**, 13(8), 1053-1059.
https://doi.org/10.1002/asia.201800125

1. Xi Chen, Huiying Yang, **Max J. Hülsey**, Ning Yan,* "One-step Synthesis of N-heterocyclic Compounds from Carbohydrates over Tungsten-based Catalysts"
ACS Sustain. Chem. Eng., **2017**, 5 (11), 11096-11104.
https://doi.org/10.1021/acssuschemeng.7b03048

Talks and posters

33. **Max J. Hülsey**, Yogesh Surendranath "Interfacial CO_2 exchange kinetics measured by differential electrochemical mass spectrometry", **North American Meeting**, June, 2023

32. **Max J. Hülsey**, Yogesh Surendranath "CO_2 uptake and interfacial pH swing measurements by differential electrochemical mass spectrometry", **American Chemical Society Spring Meeting**, March, 2023

31. **Max J. Hülsey** "Controlling the local reaction environment to drive catalysis", Department seminar, **Rice University**, March, 2023 (Invited)

30. **Max J. Hülsey**, Yogesh Surendranath "Metal nanoparticles supported on a nonconductive oxide undergo pH-dependent spontaneous polarization", **Reactions at Surfaces Gordon Research Conference**, February, 2023

29. **Max J. Hülsey** "Controlling the local reaction environment to drive catalysis", Department seminar, **New York University**, Februar, 2023 (Invited)

28. **Max J. Hülsey**, Yogesh Surendranath "Differential electrochemical mass spectrometry reveals interfacial CO_2 uptake", **American Institute of Chemical Engineers Annual Meeting**, November, 2022

27. **Max J. Hülsey**, Ning Yan "Dynamic Promotion of Heterogeneous Catalysis By Oscillating Electric Potentials", **American Institute of Chemical Engineers Annual Meeting**, November, 2022

26. **Max J. Hülsey**, Ning Yan "Hydrogen spillover and its relation to catalysis", **American Institute of Chemical Engineers Annual Meeting**, November, 2022

25. **Max J. Hülsey**, Yuriy Román-Leshkov, Yogesh Surendranath "Sustainable catalysis on dynamic active sites", **American Institute of Chemical Engineers Annual Meeting**, November, 2022

24. **Max J. Hülsey**, "Dynamics of catalytic active sites", **Chemistry Student Seminar MIT Chemistry**, October, 2022 (Invited)

23. **Max J. Hülsey**, Yogesh Surendranath "Transient Kinetic Isotope Analysis Reveals Interfacial CO_2 dissolution kinetics", **Electrochemistry Gordon Research Conference**, September, 2022

22. **Max J. Hülsey**, "Polyoxometalate-Supported Single-Atom Catalysts", **Catalysis Gordon Research Conference**, June, 2022

21. **Max J. Hülsey**, "Catalytic technologies for a decarbonized chemical economy", **Shanghai Jiaotong University – China-UK Low Carbon College**, March, 2022 (Invited)

20. **Max J. Hülsey**, Victor Fung, Ning Yan "Hydrogen spillover and its relation to catalysis", **Catalysis Talks**, April, 2021 (Invited)

19. **Max J. Hülsey**, Victor Fung, Ning Yan "Hydrogen spillover and its relation to catalysis", **Just Another Webinar Series (JAWS)**, February, 2020

18. **Max J. Hülsey**, Ning Yan "Dynamic promotion of heterogeneous catalysis by oscillating electric potentials", **Catalysis Talks**, December, 2020

17. **Max J. Hülsey**, Ning Yan "Polyoxometalate-Supported Single-Atom Catalysts", **2020 Virtual AIChE Annual Meeting**, November, 2020

16. **Max J. Hülsey**, Geng Sun, Philippe Sautet, Ning Yan "Observing Single-Atom Catalytic Sites during Reactions Using Electrospray Ionization Mass Spectrometry", **2020 Virtual AIChE Annual Meeting**, November, 2020

15. **Max J. Hülsey**, Bin Zhang, Shipeng Ding, Hiroyuki Asakura, Zili Wu, Philippe Sautet, Ning Yan "Low-Temperature Hydrodeoxygenation By Polyoxometalate-Supported Pd1 Single-Atom Catalysts", **2020 Virtual AIChE Annual Meeting**, November, 2020

14. **Max J. Hülsey**, Sambath Baskaran, Jun Li, Ning Yan "Establishing Non-Linear Scaling Relations for Single-Atom Catalysts", **The 3rd International Symposium on Single-Atom Catalysis** (cancelled due to COVID-19), Pacific Grove, United States of America, June, 2020

13. **Max J. Hülsey**, Geng Sun, Zili Wu, Philippe Sautet, Ning Yan "Low-temperature hydrodeoxygenation using polyoxometalate-supported Pd_1 single-atom catalysts", **17th International Congress on Catalysis 2020 Vision** (cancelled due to COVID-19), San Diego, United Stated of America, June, 2020 (supported by the Young Scientist Travel Support Prize)

12. **Max J. Hülsey**, Bin Zhang, Hiroyuki Asakura, Tsunehiro Tanaka, Ning Yan "In situ Spectroscopy-Guided Engineering of Rhodium Single-Atom Catalysts for CO Oxidation", **The 8th Asia Pacific Congress on Catalysis**, Bangkok, Thailand, August, 2019

11. **Max J. Hülsey**, Bin Zhang, Ning Yan "In situ Spectroscopy-Guided Engineering of Rhodium Single-Atom Catalysts for CO Oxidation", **Southeast Asia Catalysis Conference 2019**, Singapore, May, 2019 (ChemCatChem Best Poster Award)

10. **Max J. Hülsey**, Bin Zhang, Hiroyuki Asakura, Tsunehiro Tanaka, Ning Yan "Heteropoly Acid-Supported Single-Atom Catalysts", **AM30 Symposium Singapore – Advanced Emerging Soft Materials**, Singapore, December, 2018

9. **Max J. Hülsey**, Weiping Deng, Yunzhu Wang, Ning Yan, "Catalytic Amino Acid Production from Biomass", **2018 AIChE Meeting**, United States of America, November, 2018

8. **Max J. Hülsey**, Bin Zhang, Ning Yan, "Correlation between Atom-Support Interaction and Catalyst Stability & Activity: Implications from a Series of Heteropoly Acids Based Pt1 Catalysts", **2018 AIChE Meeting**, Pittsburgh, United States of America, November, 2018

7. **Max J. Hülsey**, Bin Zhang, Ning Yan, "In-Situ Spectroscopic Evidence for the Mars-Van Krevelen Mechanism in the Rh Single-Atom Catalyzed CO Oxidation", **2018 AIChE Meeting**, Pittsburgh, United States of America, November, 2018

6. **Max J. Hülsey**, Bin Zhang, Ning Yan, "Platinum single atoms supported on heteropoly acids – structure, Stability and Reactivity", **2018 International Symposium on Advancement and Prospect of Catalysis Science & Technology**, Sydney, Australia, July, 2018

5. **Max J. Hülsey**, Bin Zhang, Hiroyuki Asakura, Tsunehiro Tanaka, Peng Zhang, Ning Yan, "In-situ Spectroscopic Evidence for the Mars-van Krevelen Mechanism in the Rh Single-Atom Catalyzed CO Oxidation", **International Symposium on Relations between Homogeneous and Heterogeneous Catalysis**, Sydney, Australia, July, 2018

4. **Max J. Hülsey**, Bin Zhang, Ning Yan, "In-situ Spectroscopic Evidence for the Mars-van Krevelen Mechanism in the Rh Single-Atom Catalyzed CO Oxidation", **The 2nd International Symposium on Single-Atom Catalysis**, Beijing, China, June, 2018

3. **Max J. Hülsey**, Bin Zhang, Ning Yan, "In-situ Spectroscopic Evidence for the Mars-van Krevelen Mechanism in the Rh Single-Atom Catalyzed CO Oxidation", **9th Singapore Catalysis Society Forum**, Singapore, May, 2018

2. Bin Zhang, **Max J. Hülsey**, Hiroyuki Asakura, Ning Yan, "Atomically dispersed rhodium on Self-assembled phosphotungstic acid: structural features and catalytic CO oxidation properties", **2017 AIChE meeting**, Minneapolis, United States of America, October, 2017

1. Jan Hormann, **Max J. Hülsey**, Nora Kulak, "Copper complexes of novel anthraquinone-substituted cyclen derivatives for DNA binding", **13th International Symposium on Applied Bioinorganic Chemistry**, Galway, Ireland, June, 2015

Graduate student supervision experience

2020 –

Chia Wei Lim
Sie Shing Wong
Jinquan Chang
Sikai Wang
Hua An
Chen Chen
National University of Singapore

Teaching Experience

2020 – 2021

Guest Lecturer
National University of Singapore
Guest Lecturer for and involved in the conception and design of the new module 'Advanced topics in Catalysis'

2017 – 2021

Graduate Teaching Assistant
National University of Singapore
Chemical Engineering Laboratory I & II, CN 2108 & 3108
Chemical Kinetics and Reactor Design, CN 2116
Chemical Engineering Thermodynamics, CN 2121
Chemical Engineering Principles and Practice II, CN2102

2014 – 2016	**Student instructor** *Heidelberg University* General and Inorganic Chemistry I; Inorganic Chemistry III; Physical Chemistry I

Awards and Honors

2022 – 2024	Schmidt Science Fellowship
2020	Young Scientist Travel Support Prize (for ICC 2020)
2019	ChemCatChem Best Poster Award SACC 2019
2018	Best Poster Award AM30
2017 – 2021	SINGA scholarship
2015 – 2016	Germany Scholarship
2015	DAAD Rise
2012	Emmy-Noether Award

Academic Service

2024 –	Chair of the 'Crossroads between thermal and electrocatalysis' symposium for the 267th ACS National Meeting, Spring 2024
2023 –	Independent reviewer for grant proposals for the *European Science Foundation (ESF)* & the *National Science Foundation (NSF)*
2023 –	Chair of the 'Intersection Between Thermal and Electrocatalysis' session for the 2023 AIChE Annual Meeting in Orlando
2023 –	Chair of the 'Electrochemical CO_2 conversion IV' session for the 28th North American Meeting
2023 –	Chair of the 'Crossroads between thermal and electrocatalysis' symposium for the 265th ACS National Meeting, Spring 2023
2022	Chair of the 'Environmental Catalysis III: Emerging Catalytic Technologies' session at the 2022 AIChE Annual Meeting
2022 –	Early Career Editorial Board member of *Mol. Catal.*
2019 – 2021	Lead of the NUS ChBE literature club
2018 –	Independent reviewer for manuscripts (90 in total as of 11.07.2023) in *Chem*, *J. Am. Chem. Soc.*, *Nat. Commun.*, *Angew. Chem. Int. Ed.*, *ACS Catal.*, *Commun. Chem.*, *Appl. Catal. B*, *J. Catal.*, *Small*, *Mater. Today Chem.*, *ACS Sustain. Chem. Eng.*, *AIChE J.*, *Green Energy Environ.*, *Carbon Neutrality*, *Biomass Convers. Biorefin.*, *Mol. Catal.*, & *RSC Adv.*
2012 – 2015	Course speaker, member of the study commission & examination commission

List of references

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E-mail: yroman@mit.edu; Letter might be sent by Alina Haverty (haverty@mit.edu) on his behalf