Stanford

Simon R Bare

Distinguished Staff Scientist, SLAC National Accelerator Laboratory

Bio

BIO

Simon R Bare is a Distinguished Staff Scientist at Stanford Synchrotron Radiation Lightsource (SSRL) at SLAC National Accelerator Laboratory. His research is focused on in-situ/operando catalyst characterization using techniques available at synchrotrons, with a focus on X-ray absorption spectroscopy to develop structure-property relationships. He enjoys developing and applying new catalyst characterization techniques. His group, the Consortium for Operando and Advanced Catalyst Characterization via Electronic Spectroscopy and Structure (Co-ACCESS), develops methodology to allow any catalysis researcher to perform their experiments effectively, efficiently, and safely at SSRL. His group currently collaborates with over 50 catalysis-focused research groups in the US and globally.

Institute Affiliations

SUNCAT Center for Interface Science and Catalysis

Appointments

2017-now Adjunct Professor, Department of Chemical Engineering, University of California, Davis

2016-now Distinguished Scientist, SSRL, SLAC National Accelerator Laboratory

2010–2016 Research Fellow, UOP LLC, Des Plaines, IL

2003–2010 Senior Research & Development Associate, UOP LLC, Des Plaines, IL

1996–2003 Research & Development Associate, UOP LLC, Des Plaines, IL

1986–1996 Staff Scientist, The Dow Chemical Company, Midland, MI

1984–1986 Postdoctoral Research Associate, Materials & Molecular Research Division, Lawrence Berkeley National Laboratory, Berkeley

1982–1984 Postdoctoral Research Associate, Laboratory of Atomic and Solid State Physics, Cornell University, Ithaca, NY

Professional Preparation

University of Liverpool, U.K. Chemistry B.Sc. (Honors) 1979

University of Liverpool, U.K. Physical Chemistry Ph.D. 1982

CURRENT ROLE AT STANFORD

Stanford Synchrotron Radiation Lightsource (SSRL)

HONORS AND AWARDS

- ACS CATL Exceptional Achievements Award, American Chemical Society (2025)
- Fellow, American Association for the Advancement of Science (2009)

PATENTS

- Bogdan, Paula L., Nemeth, Valeria, Bare, Simon R.. "United States Patent 9162214 Substantially nonporous substrate supported noble metal- and lanthanide-containing catalysts for hydrogenation reactions", UOP LLC, Oct 20, 2015
- Bogdan, Paula L., Nemeth, Valeria, Bare, Simon R.. "United States Patent 9126188 Method of making substantially nonporous substrate supported noble metal- and lanthanide-containing catalysts", UOP LLC, Sep 8, 2015
- Bogdan Paula L, Nemeth Valeria, Bare Simon, R.. "United States Patent 8822370 Substantially non-porous substrate supported noble metal- and lanthanide-containing catalysts", UOP LLC, Sep 2, 2014
- Bare Simon R, Kelly, Shelly D, Sinkler Wharton, Greenlay Nan.. "United States Patent 8693626 Solid material characterization with x-ray spectra in both transmission and fluorescence modes", UOP LLC, Apr 8, 2014
- Lapinski Mark P., Gajda Gregory J., Donner Jeffry, T., Rosin Richard R., Schreier Marc R, Bare Simon R.. "United States Patent 8404105 Process and system for the transfer of a metal catalyst component from one particle to another", UOP LLC, Mar 26, 2013
- Bricker Maureen L, Leonard Laura E, Kruse Todd Michael, Vassilakis James George, Bare Simon R.. "United States Patent 8101807 Methods for converting glycerol to propanol", UOP LLC, Jan 24, 2012
- Lapinski Mark P., Gajda Gregory J., Donner Jeffry T., Rosin Richard R., Schreier Marc R, Bare Simon R. "United States Patent 7909988 Process and system for the transfer of a metal catalyst component from one particle to another", UOP LLC, Mar 22, 2011
- Gajda G.J., Lapinski M.P., Donner J.D., Bare Simon R.. "United States Patent 7799729 Reforming Catalyst", UOP LLC, Sep 21, 2010
- Clark H. W., Bowman R. G., Maj J. J., Bare Simon R., Hartwell G. E.. "United States Patent 5965754 Process for the direct oxidation of olefins to olefin oxides", The Dow Chemical Company, Oct 12, 1999
- Ito L.N., Jones M.E., Bare Simon R. "United States Patent 5637548 Preparation of bimetallic catalysts for hydrodechlorination of chlorinated hydrocarbons", The Dow Chemical Company, Jun 10, 1997

LINKS

- Co-Access: https://web.slac.stanford.edu/coaccess/

Professional

PROFESSIONAL AFFILIATIONS AND ACTIVITIES

- Member, Royal Society of Chemistry (2025 - present)
- Member, North American Catalysis Society (1985 - present)
- Member Executive Committee, International X-ray Absorption Spectroscopy (2018 - present)
- Member, American Physical Society (2016 - present)
- Fellow, American Association for the Advancement of Science (1998 - present)
- Member, American Chemical Society (1985 - present)

Publications

PUBLICATIONS

- **The ever-evolving active site: transformation of single atoms to extended structures during the Rh-catalyzed reverse water-gas shift reaction.** *Faraday discussions*
  Barber, G., Chen, X., Khan, A., Heinlein, J., Gericke, S. M., Li, M., Zakharov, D., Yang, J., Head, A. R., Cargnello, M., Rioux, R. M., Bare, S. R.
  2026
- **Metal hybridization in dilute-alloy catalysts promotes sintering resistance by decreasing surface mobility.** *Nature materials*
  Finzel, J., Dannar, A., Sun, S., Hoffman, A. S., Soni, Y., Wang, B., Bare, S. R., Sykes, E. C., Christopher, P.
  2026

- **Majority Ga(I) Sites in H₂-Activated Ga/γ-Al₂O₃ and Ga/ZSM5 Catalysts Exhibit Distinctive XANES and Anomalous EXAFS Behavior** *ACS CATALYSIS*
  Chalmers, J. A., Vila, F. D., Li, L., Hoffman, A. S., Dong, J., Bare, S. R., Scott, S. L.
  2026
- **Selective chemical looping combustion of acetylene in ethylene-rich streams.** *Science (New York, N.Y.)*
  Jacob, M., Nguyen, H., Raj, R., Garcia-Barriocanal, J., Hong, J., Perez-Aguilar, J. E., Hoffman, A. S., Mkhoyan, K. A., Bare, S. R., Neurock, M., Bhan, A.
  2025; 387 (6735): 744-749
- **Quantifying the Site Heterogeneities of Non-Uniform Catalysts Using QuantEXAFS** *CHEMISTRYMETHODS*
  Rana, R., Hong, J., Hoffman, A. S., Werghi, B., Bare, S. R., Kulkarni, A. R.
  2024
- **Recommendations to standardize reporting, execution, and interpretation of X-ray Absorption Spectroscopy measurements** *JOURNAL OF CATALYSIS*
  Meyer, R. J., Bare, S. R., Canning, G. A., Chen, J. G., Chu, P. M., Hock, A. S., Hoffman, A. S., Karim, A. M., Kelly, S. D., Lei, Y., Stavitski, E., Wrasman, C. J.
  2024; 432
- **Tracking Active Phase Behavior on Boron Nitride during the Oxidative Dehydrogenation of Propane Using Operando X-ray Raman Spectroscopy.** *Journal of the American Chemical Society*
  Cendejas, M. C., Paredes Mellone, O. A., Kurumbail, U., Zhang, Z., Jansen, J. H., Ibrahim, F., Dong, S., Vinson, J., Alexandrova, A. N., Sokaras, D., Bare, S. R., Hermans, I.
  2023
- **CatMass: software for calculating optimal sample masses for X-ray absorption spectroscopy experiments involving complex sample compositions.** *Journal of synchrotron radiation*
  Perez-Aguilar, J. E., Caine, A., Bare, S. R., Hoffman, A. S.
  2023
- **Bridging the Gap between the X-ray Absorption Spectroscopy and the Computational Catalysis Communities in Heterogeneous Catalysis: A Perspective on the Current and Future Research Directions** *ACS CATALYSIS*
  Rana, R., Vila, F. D., Kulkarni, A. R., Bare, S. R.
  2022; 12 (22): 13813-13830
- **A Theory-Guided X-ray Absorption Spectroscopy Approach for Identifying Active Sites in Atomically Dispersed Transition-Metal Catalysts.** *Journal of the American Chemical Society*
  Chen, Y., Rana, R., Sours, T., Vila, F. D., Cao, S., Blum, T., Hong, J., Hoffman, A. S., Fang, C., Huang, Z., Shang, C., Wang, C., Zeng, et al
  2021
- **Low-Temperature Restructuring of CeO2-Supported Ru Nanoparticles Determines Selectivity in CO2 Catalytic Reduction.** *Journal of the American Chemical Society*
  Aitbekova, A. n., Wu, L. n., Wrasman, C. J., Boubnov, A. n., Hoffman, A. S., Goodman, E. D., Bare, S. R., Cargnello, M. n.
  2018; 140 (42): 13736–45
- **Effects of Polymer Morphology on Solvent and Catalyst Accessibility during Polyethylene and Polystyrene Autoxidation** *JACS AU*
  Maurya, A. K., Asundi, A. S., Hesse, S. A., Ebrahim, A. M., Sullivan, K. P., Miscall, J., Richardson, J. A., Bare, S. R., Sarangi, R., Beckham, G. T., Tassone, C. J.
  2026
- **Polymer Deconstruction and Redesign Strategies for Plastics Recycling** *ADVANCED MATERIALS TECHNOLOGIES*
  Maurya, A. K., Asundi, A. S., Bozkurt, O. D., Knauer, K. M., Bare, S. R., Tassone, C. J.
  2026
- **Probing Terra Incognita of Ni-P Catalysts: Operando Explorations during Hydrogen Evolution Reaction.** *Journal of the American Chemical Society*
  Kong, S., Soto, E., Hong, J., Davis, R., Nelson, E., Roddatis, V., Lebedev, O. I., Zheng, W., Odhiambo, H. W., Oh, N., Upadhyay, V., Spera, N. C., Raturi, et al
  2026

- **Solventless, ambient-pressure production of bio-based lactones over earth-abundant, mixed metal oxide catalysts for circular polyesters.** *Nature communications*
  Kiani, D., Rosetto, G., Ibrahim, F., Bozkurt, O. D., Pal, A., Van Roijen, E. C., DesVeaux, J. S., Bare, S. R., Hermans, I., Beckham, G. T.
  2026
- **Highly Stable Supported Cu-Ni Dilute Alloy Catalyst for Efficient CO2 Reforming of Methane.** *Journal of the American Chemical Society*
  Wang, L., Hong, J., Yang, W., Liang, Y., Vila, F., Hu, J., Chang, H., Tao, Y., Wang, Z., Haynes, B. S., Bare, S. R., Gates, B. C., Huang, et al
  2026
- **Adapted Cell Design for the Operando X-Ray Absorption Study of a Structurally Evolving Cu Nanoparticle Ensemble during the CO₂ Electroconversion to Multicarbon Products** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Louisia, S., Feijoo, J., Yang, Y., Yu, S., Fonseca Guzman, M. V., Shan, Y., Tusini, E., Hoffman, A. S., Bare, S. R., Yang, P.
  2025
- **Dynamic Features of Cu-Ceria Interface under CO₂ Hydrogenation to Methanol** *ACS CATALYSIS*
  Li, Y., Chen, Y., Song, H., Unocic, K. A., Perez-Aguilar, J., Hong, J., Hoffman, A. S., Moncada, J., Kim, J., Daemen, L., Cheng, Y., Wang, C., Senanayake, et al
  2025
- **Operando XAS and DFT Uncover Structure-Performance Relationships in Re/TiO2 for Selective CO2 Hydrogenation to Methanol.** *ACS catalysis*
  Gothe, M. L., Braga, A. H., Borges, L. R., Hong, J., Farias, G., Torrez Baptista, A. D., Larico, B. A., Cansian, A. B., Rodrigues Miranda, C., Bare, S. R., Rossi, L. M., Vidinha, P.
  2025; 15 (22): 19111-19126
- **Reversible temperature-induced shape transition of Pt nanoparticles supported on Al2O3.** *Nanoscale advances*
  Pool Mazun, R., Khan, S. A., Liao, V., Hansen, T. W., Yousuf, M. R., Yang, P., Shrotri, A., Hoffman, A. S., Bare, S. R., Vlachos, D. G., Karim, A. M.
  2025
- **Operando XAS and DFT Uncover Structure-Performance Relationships in Re/TiO₂ for Selective CO₂ Hydrogenation to Methanol** *ACS CATALYSIS*
  Gothe, M., Braga, A., Borges, L., Hong, J., Farias, G., Torrez Baptista, A., Larico, B., Cansian, A., Rodrigues Miranda, C., Bare, S. R., Rossi, L., Vidinha, P.
  2025
- **X-ray absorption spectroscopy of lanmodulin-derived peptides bound to rare earth elements.** *Journal of synchrotron radiation*
  Smerigan, A., Hoffman, A. S., Perez-Aguilar, J., Shi, R., Bare, S. R.
  2025
- **Defect-Driven Redox Interplay on Anatase TiO2: Surface-Structure Dependent Activation for CO2 Hydrogenation Catalysis.** *Journal of the American Chemical Society*
  Chen, X., Lee, Y., Hong, S., Schroeder, E. K., Gericke, S. M., Barber, G. D., Chen, Z., Hesse, S. A., Tassone, C. J., Rioux, R. M., Christopher, P., Bare, S. R., Li, et al
  2025
- **Tuning Catalytic Reactivity via Wetting Control through Oxygen Vacancies: Ru Clusters on Anatase TiO2 and CeO2 Supports.** *Journal of the American Chemical Society*
  Chen, L., Moore, C. G., Umhey, C. E., Perez-Aguilar, J. E., Hong, J., Hoffman, A. S., Thorpe, R. M., Moreira, J. B., Kovarik, L., Bare, S. R., Raugei, S., McEwen, J. S., Szanyi, et al
  2025
- **Titanium-, Nitrogen-Doped Carbon Flowers Catalyze Electrochemical Nitrate Reduction Reaction to Ammonia.** *Journal of the American Chemical Society*
  Liu, M. J., Fernández Otero, C. A., Patino, D. U., Gong, H., Hossain, M. D., Matthews, J. E., Williams, K. S., Vargas, A., Zachman, M. J., Hoffman, A. S., Nordlund, D., Bajdich, M., Bare, et al
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- **Structural Evolution and Stability of Rh/TiO₂ Catalysts under CO₂ Hydrogenation Conditions: Influence of the Initial Rh Structure** *ACS CATALYSIS*
  Schroeder, E. K., Hong, S., Chen, X., Hoffman, A. S., Chen, Z., Khan, A., Barber, G. D., Bac, S., Rioux, R. M., Yang, J., Tassone, C. J., Bare, S. R., Christopher, et al

2025

- **Volcano-like Activity Trends in Au@Pd Catalysts: The Role of Pd Loading and Nanoparticle Size.** *Chemphyschem : a European journal of chemical physics and physical chemistry*
  Braga, A. H., Fiorio, J. L., Yang, O., Silva, K. L., Silva, T. A., Hoffman, A. S., Bare, S. R., Bettini, J., Mogili, N. V., Rossi, L. M.
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- **Exploring characteristics of palladium-loaded tin (IV) oxide nanohybrids towards chemiresistive gas sensing** *APPLIED SURFACE SCIENCE*
  Ozbakir, Y., Li, Z., Zheng, Q., Hong, J., Perez-Aguilar, J. E., Bare, S. R., Alghannam, A., Goel, N., Bart, S., Carraro, C., Maboudian, R.
  2025; 690
- **Intermediate-Temperature Reverse Water-Gas Shift under Process-Relevant Conditions Catalyzed by Dispersed Alkali Carbonates.** *JACS Au*
  Tamakuwala, K. N., Kennedy, R. P., Li, C. S., Mutz, B., Boller, P., Bare, S. R., Kanan, M. W.
  2025; 5 (3): 1083-1089
- **Best practices for in-situ and operando techniques within electrocatalytic systems.** *Nature communications*
  Prajapati, A., Hahn, C., Weidinger, I. M., Shi, Y., Lee, Y., Alexandrova, A. N., Thompson, D., Bare, S. R., Chen, S., Yan, S., Kornienko, N.
  2025; 16 (1): 2593
- **Intermediate-Temperature Reverse Water-Gas Shift under Process-Relevant Conditions Catalyzed by Dispersed Alkali Carbonates** *JACS AU*
  Tamakuwala, K. N., Kennedy, R. P., Li, C. S., Mutz, B., Boller, P., Bare, S. R., Kanan, M. W.
  2025
- **Synergistic effects of Pd single atoms and nanoclusters boosting SnO₂ gas sensing performance** *JOURNAL OF MATERIALS CHEMISTRY C*
  Ozbakir, Y., Xia, Y., Pan, A., Hong, J., Perez-Aguilar, J. E., Bare, S. R., Rossi, F., Dhall, R., Alghannam, A., Goel, N., Bart, S., Carraro, C., Maboudian, et al
  2025
- **Advanced EXAFS analysis techniques applied to theL-edges of the lanthanide oxides.** *Journal of applied crystallography*
  Smerigan, A., Hoffman, A. S., Ostervold, L., Hong, J., Perez-Aguillar, J., Caine, A. C., Greenlee, L., Bare, S. R.
  2024; 57 (Pt 6): 1913-1923
- **Dynamic Behavior of Pt Multimetallic Alloys for Active and Stable Propane Dehydrogenation Catalysts.** *Journal of the American Chemical Society*
  Werghi, B., Saini, S., Chung, P. H., Kumar, A., Ebrahim, A. M., Abels, K., Chi, M., Abild-Pedersen, F., Bare, S. R., Cargnello, M.
  2024
- **Metal-support interactions in metal oxide-supported atomic, cluster, and nanoparticle catalysis** *CHEMICAL SOCIETY REVIEWS*
  Leybo, D., Etim, U. J., Monai, M., Bare, S. R., Zhong, Z., Vogt, C.
  2024; 53 (21): 10450-10490
- **Synthesis of Amorphous and Various Phase-Pure Nanoparticles of Nickel Phosphide with Uniform Sizes via a Trioctylphosphine-Mediated Pathway.** *Inorganic chemistry*
  Thompson, D., Hoffman, A. S., Mansley, Z., York, S., Wang, F., Zhu, Y., Bare, S. R., Chen, J.
  2024
- **Steam-Assisted Selective CO2 Hydrogenation to Ethanol over Ru-In Catalysts.** *Angewandte Chemie (International ed. in English)*
  Zhou, C., Aitbekova, A., Liccardo, G., Oh, J., Stone, M., McShane, E. J., Werghi, B., Nathan, S., Song, C., Ciston, J., Bustillo, K., Hoffman, A. S., Hong, et al
  2024: e202406761
- **Understanding and Harnessing Nanoscale Immiscibility in Ru-In Alloys for Selective CO2 Hydrogenation.** *Journal of the American Chemical Society*
  Zhou, C., Liccardo, G., Hoffman, A. S., Oh, J., Holmes, S. E., Vailionis, A., Bare, S. R., Cargnello, M.
  2024
- **Revealing Structural Evolution of Nickel Phosphide-Iron Oxide Core-Shell Nanocatalysts in Alkaline Medium for the Oxygen Evolution Reaction.** *Chemistry of materials : a publication of the American Chemical Society*
  Manso, R. H., Hong, J., Wang, W., Acharya, P., Hoffman, A. S., Tong, X., Wang, F., Greenlee, L. F., Zhu, Y., Bare, S. R., Chen, J.

2024; 36 (13): 6440-6453

- **Revealing Structural Evolution of Nickel Phosphide-Iron Oxide Core-Shell Nanocatalysts in Alkaline Medium for the Oxygen Evolution Reaction** *CHEMISTRY OF MATERIALS*
  Manso, R. H., Hong, J., Wang, W., Acharya, P., Hoffman, A. S., Tong, X., Wang, F., Greenlee, L. F., Zhu, Y., Bare, S. R., Chen, J.
  2024
- **Site requirements for inhibition-free CO oxidation over silica-supported bimetallic PdCu alloys** *CATALYSIS SCIENCE & TECHNOLOGY*
  Kristy, S., Svadlenak, S., Hoffmann, A. S., Bare, S. R., Goulas, K. A.
  2024; 14 (14): 3956-3965
- **A US perspective on closing the carbon cycle to defossilize difficult-to-electrify segments of our economy.** *Nature reviews. Chemistry*
  Shaw, W. J., Kidder, M. K., Bare, S. R., Delferro, M., Morris, J. R., Toma, F. M., Senanayake, S. D., Autrey, T., Biddinger, E. J., Boettcher, S., Bowden, M. E., Britt, P. F., Brown, et al
  2024
- **Dynamic structural evolution of MgO-supported palladium catalysts: from metal to metal oxide nanoparticles to surface then subsurface atomically dispersed cations.** *Chemical science*
  Chen, Y., Rana, R., Zhang, Y., Hoffman, A. S., Huang, Z., Yang, B., Vila, F. D., Perez-Aguilar, J. E., Hong, J., Li, X., Zeng, J., Chi, M., Kronawitter, et al
  2024; 15 (17): 6454-6464
- **A Versatile Electrochemical Cell for Operando XAS** *CHEMCATCHEM*
  Ostervold, L., Hoffman, A. S., Thompson, D., Bare, S. R., Clark, E.
  2024
- **Dynamic structural evolution of MgO-supported palladium catalysts: from metal to metal oxide nanoparticles to surface then subsurface atomically dispersed cations** *CHEMICAL SCIENCE*
  Chen, Y., Rana, R., Zhang, Y., Hoffman, A. S., Huang, Z., Yang, B., Vila, F. D., Perez-Aguilar, J. E., Hong, J., Li, X., Zeng, J., Chi, M., Kronawitter, et al
  2024
- **Reduction of Cofed Carbon Dioxide Modifies the Local Coordination Environment of Zeolite-Supported, Atomically Dispersed Chromium to Promote Ethane Dehydrogenation.** *Journal of the American Chemical Society*
  Zhou, W., Felvey, N., Guo, J., Hoffman, A. S., Bare, S. R., Kulkarni, A. R., Runnebaum, R. C., Kronawitter, C. X.
  2024
- **Acetylene ligands stabilize atomically dispersed supported rhodium complexes under harsh conditions** *CHEMICAL ENGINEERING JOURNAL*
  Zhao, Y., Kurtoglu-Oztulum, S. F., Hoffman, A. S., Hong, J., Perez-Aguilar, J., Bare, S. R., Uzun, A.
  2024; 485
- **Dynamic Behavior of Platinum Atoms and Clusters in the Native Oxide Layer of Aluminum Nanocrystals.** *ACS nano*
  Robatjazi, H., Battsengel, T., Finzel, J., Tieu, P., Xu, M., Hoffman, A. S., Qi, J., Bare, S. R., Pan, X., Chmelka, B. F., Halas, N. J., Christopher, P.
  2024
- **Hydrogenolysis of Polyethylene and Polypropylene into Propane over Cobalt-Based Catalysts (Retraction of Vol 2, Pg 2259, 2022)** *JACS AU*
  Zichittella, G., Ebrahim, A. M., Zhu, J., Brenner, A. E., Drake, G., Beckham, G. T., Bare, S. R., Rorrer, J. E., Roman-Leshkov, Y.
  2024; 4 (2): 865
- **Impact of Local Structure in Supported CaO Catalysts for Soft-Oxidant-Assisted Methane Coupling Assessed through Ca K-Edge X-ray Absorption Spectroscopy** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Filardi, L. R., Vila, F. D., Hong, J., Hoffman, A. S., Perez-Aguilar, J. E., Bare, S. R., Runnebaum, R. C., Kronawitter, C. X.
  2024; 128 (3): 1165-1176
- **Understanding the Control of Speciation of Molybdenum Oxides in MFI-Type Zeolites** *CHEMISTRY OF MATERIALS*
  Hiennadi, E. J., Molajafari, F., Rana, R., Hoffman, A. S., Bare, S. R., Howe, J. D., Khatib, S. J.
  2023; 35 (23): 9907-9923
- **Significant Roles of Surface Hydrides in Enhancing the Performance of Cu/BaTiO_{2.8}H_{0.2} Catalyst for CO₂ Hydrogenation to Methanol** *ANGEWANDTE CHEMIE-INTERNATIONAL EDITION*

He, Y., Li, Y., Lei, M., Polo-Garzon, F., Perez-Aguilar, J., Bare, S. R., Formo, E., Kim, H., Daemen, L., Cheng, Y., Hong, K., Chi, M., Jiang, et al
2023: e202313389

- **Ceria Incorporation in Sinter-Resistant Platinum-Based Catalysts** *ACS CATALYSIS*
  Stone, M. L., Cendejas, M. C., Persson, A., Liccardo, G., Smith, J., Kumar, A., Zhou, C., Gardner, E., Aitbekova, A., Bustillo, K. C., Chi, M., Bare, S. R., Cargnello, et al
  2023; 13 (22): 14853-14863

- **Spectroscopic determination of metal redox and segregation effects during CO and CO/NO oxidation over silica-supported Pd and PdCu catalysts** *APPLIED CATALYSIS B-ENVIRONMENT AND ENERGY*
  Kristy, S., Svadlenak, S., Hoffman, A. S., Bare, S. R., Goulas, K. A.
  2024; 342

- **Cation Incorporation into Copper Oxide Lattice at Highly Oxidizing Potentials.** *ACS applied materials & interfaces*
  Ostervold, L., Smerigan, A., Liu, M. J., Filardi, L. R., Vila, F. D., Perez-Aguilar, J. E., Hong, J., Tarpeh, W. A., Hoffman, A. S., Greenlee, L. F., Clark, E. L., Janik, M. J., Bare, et al
  2023

- **Elucidating the role of Fe-Mo interactions in the metal oxide precursors for Fe promoted Mo/ZSM-5 catalysts in non-oxidative methane dehydroaromatization** *CHEMICAL ENGINEERING JOURNAL*
  Hossain, M., Dhillon, G., Liu, L., Sridhar, A., Hiennadi, E. J., Hong, J., Bare, S. R., Xin, H., Ericson, T., Cozzolino, A., Khatib, S. J.
  2023; 475

- **Aqueous Structure of Lanthanide-EDTA Coordination Complexes Determined by a Combined DFT/EXAFS Approach** *INORGANIC CHEMISTRY*
  Smerigan, A., Biswas, S., Vila, F. D., Hong, J., Perez-Aguilar, J., Hoffman, A. S., Greenlee, L., Getman, R. B., Bare, S. R.
  2023; 62 (36): 14523-14532

- **Size-Dependent Dispersion of Rhodium Clusters into Isolated Single Atoms at LowTemperature and the Consequences for CO Oxidation Activity.** *Angewandte Chemie (International ed. in English)*
  Albrahim, M., Shrotri, A., Unocic, R., Hoffman, A., Bare, S., Karim, A. M.
  2023: e202308002

- **Temporal Ni K-Edge X-ray Absorption Spectroscopy Study Reveals the Kinetics of the Ni Redox Behavior of the Iron-Nickel Oxide Bimetallic OER Catalyst** *JOURNAL OF PHYSICAL CHEMISTRY C*
  Acharya, P., Hong, J., Manso, R., Hoffman, A. S. S., Kekedy-Nagy, L., Chen, J., Bare, S. R. R., Greenlee, L. F. F.
  2023

- **CO Oxidation on Ir-1/TiO2: Resolving Ligand Dynamics and Elementary Reaction Steps** *ACS CATALYSIS*
  Thompson, C. B. B., Liu, L., Leshchev, D. S. S., Hoffman, A. S. S., Hong, J., Bare, S. R. R., Unocic, R. R. R., Stavitski, E., Xin, H., Karim, A. M. M.
  2023; 13 (12): 7802-7811

- **Observations of Ethylene-for-CO Ligand Exchanges on a Zeolite-Supported Single-Site Rh Catalyst by X-ray Absorption Spectroscopy.** *The journal of physical chemistry letters*
  Hoffman, A. S., Muller, O., Hong, J., Canning, G. A., Fang, C., Perez-Aguilar, J. E., Gates, B. C., Bare, S. R.
  2023: 4591-4599

- **Memory-dictated dynamics of single-atom Pt on CeO2 for CO oxidation.** *Nature communications*
  Zhang, Z., Tian, J., Lu, Y., Yang, S., Jiang, D., Huang, W., Li, Y., Hong, J., Hoffman, A. S., Bare, S. R., Engelhard, M. H., Datye, A. K., Wang, et al
  2023; 14 (1): 2664

- **Dynamic Evolution of Palladium Single Atoms on Anatase Titania Support Determines the Reverse Water-Gas Shift Activity.** *Journal of the American Chemical Society*
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