

## Adam Hoffman

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### Publications

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#### PUBLICATIONS

- **Environmentally benign synthesis of a PGM-free catalyst for low temperature CO oxidation** *APPLIED CATALYSIS B-ENVIRONMENTAL*  
Riley, C., Canning, G., De La Riva, A., Zhou, S., Peterson, E., Boubnov, A., Hoffman, A., Minh Tran, Bare, S. R., Lin, S., Guo, H., Datye, A.  
2020; 264
- **Uniformity Is Key in Defining Structure-Function Relationships for Atomically Dispersed Metal Catalysts: The Case of Pt/CeO<sub>2</sub>.** *Journal of the American Chemical Society*  
Resasco, J., DeRita, L., Dai, S., Chada, J. P., Xu, M., Yan, X., Finzel, J., Hanukovich, S., Hoffman, A. S., Graham, G. W., Bare, S. R., Pan, X., Christopher, et al  
2019
- **Palladium oxidation leads to methane combustion activity: Effects of particle size and alloying with platinum.** *The Journal of chemical physics*  
Goodman, E. D., Ye, A. A., Aitbekova, A., Mueller, O., Riscoe, A. R., Nguyen Taylor, T., Hoffman, A. S., Boubnov, A., Bustillo, K. C., Nachtegaal, M., Bare, S. R., Cargnello, M.  
2019; 151 (15): 154703
- **A versatile approach for quantification of surface site fractions using reaction kinetics: The case of CO oxidation on supported Ir single atoms and nanoparticles** *JOURNAL OF CATALYSIS*  
Lu, Y., Kuo, C., Kovarik, L., Hoffman, A. S., Boubnov, A., Driscoll, D. M., Morris, J. R., Bare, S. R., Karim, A. M.  
2019; 378: 121–30
- **Transition state and product diffusion control by polymer-nanocrystal hybrid catalysts** *NATURE CATALYSIS*  
Riscoe, A. R., Wrasman, C. J., Herzing, A. A., Hoffman, A. S., Menon, A., Boubnov, A., Vargas, M., Bare, S. R., Cargnello, M.  
2019; 2 (10): 852–63
- **Engineering of Ruthenium-Iron Oxide Colloidal Heterostructures Leads to Improved Yields in CO<sub>2</sub> Hydrogenation to Hydrocarbons.** *Angewandte Chemie (International ed. in English)*  
Cargnello, M., Aitbekova, A., Goodman, E., Wu, L., Boubnov, A., Hoffman, A., Genc, A., Cheng, H., Casalena, L., Bare, S.  
2019
- **Catalyst deactivation via decomposition into single atoms and the role of metal loading** *NATURE CATALYSIS*  
Goodman, E. D., Johnston-Peck, A. C., Dietze, E. M., Wrasman, C. J., Hoffman, A. S., Abild-Pedersen, F., Bare, S. R., Plessow, P. N., Cargnello, M.  
2019; 2 (9): 748–55
- **Structural evolution of atomically dispersed Pt catalysts dictates reactivity.** *Nature materials*  
DeRita, L., Resasco, J., Dai, S., Boubnov, A., Thang, H. V., Hoffman, A. S., Ro, I., Graham, G. W., Bare, S. R., Pacchioni, G., Pan, X., Christopher, P.  
2019
- **Density-dependent deactivation mechanism in supported catalysts by high-temperature decomposition of particles into single atoms**  
Goodman, E., Johnston-Peck, A., Dietze, E., Wrasman, C., Hoffman, A., Abild-Pedersen, F., Bare, S., Plessow, P., Cargnello, M.  
AMER CHEMICAL SOC.2019
- **Role of Co<sub>2</sub>C in ZnO-promoted Co Catalysts for Alcohol Synthesis from Syngas** *CHEMCATCHEM*  
Singh, J. A., Hoffman, A. S., Schumann, J., Boubnov, A., Asundi, A. S., Nathan, S. S., Norskov, J., Bare, S. R., Bent, S. F.  
2019; 11 (2): 799–809

- **Supported Catalyst Deactivation by Decomposition into Single Atoms Is Suppressed by Increasing Metal Loading.** *Nature catalysis*  
Goodman, E. D., Johnston-Peck, A. C., Dietze, E. M., Wrasman, C. J., Hoffman, A. S., Abild-Pedersen, F., Bare, S. R., Plessow, P. N., Cargnello, M.  
2019; 2
- **Understanding Structure-Property Relationships of MoO<sub>3</sub>-Promoted Rh Catalysts for Syngas Conversion to Alcohols.** *Journal of the American Chemical Society*  
Asundi, A. S., Hoffman, A. S., Bothra, P. n., Boubnov, A. n., Vila, F. D., Yang, N. n., Singh, J. A., Zeng, L. n., Raiford, J. A., Abild-Pedersen, F. n., Bare, S. R., Bent, S. F.  
2019
- **In situ observation of phase changes of a silica-supported cobalt catalyst for the Fischer-Tropsch process by the development of a synchrotron-compatible insitu/operando powder X-ray diffraction cell.** *Journal of synchrotron radiation*  
Hoffman, A. S., Singh, J. A., Bent, S. F., Bare, S. R.  
2018; 25 (Pt 6): 1673–82
- **Synthesis of Colloidal Pd/Au Dilute Alloy Nanocrystals and Their Potential for Selective Catalytic Oxidations.** *Journal of the American Chemical Society*  
Wrasman, C. J., Boubnov, A., Riscoe, A. R., Hoffman, A. S., Bare, S. R., Cargnello, M.  
2018
- **Synergistic effect in colloidal Pd/Au single atom alloy nanocrystals for selective oxidations**  
Wrasman, C., Riscoe, A., Hoffman, A., Boubnov, A., Bare, S., Cargnello, M.  
AMER CHEMICAL SOC.2018
- **Beating Heterogeneity of Single-Site Catalysts: MgO-Supported Iridium Complexes** *ACS CATALYSIS*  
Hoffman, A. S., Debeve, L. M., Zhang, S., Perez-Aguilar, J. E., Conley, E. T., Justl, K. R., Arslan, I., Dixon, D. A., Gates, B. C.  
2018; 8 (4): 3489–98
- **Biomimetic oxidation catalyst from polymer-nanocrystal composite material**  
Riscoe, A., Wrasman, C., Hoffman, A., Menon, A., Boubnov, A., Goodman, E., Bare, S., Cargnello, M.  
AMER CHEMICAL SOC.2018
- **Uniform Pt/Pd bimetallic nanocrystals demonstrate platinum effect on palladium methane combustion activity and stability**  
Goodman, E., Dai, S., Yang, A., Wrasman, C., Gallo, A., Bare, S., Hoffman, A., Jaramillo, T., Graham, G., Pan, X., Cargnello, M.  
AMER CHEMICAL SOC.2018
- **Direct observation of the kinetics of gas–solid reactions using in situ kinetic and spectroscopic techniques** *Reaction Chemistry & Engineering*  
Hoffman, A. S., Azzam, S., Zhang, K., Xu, Y., Liu, Y., Bare, S. R., Simonetti, D. A.  
2018; 3: 668-675
- **Low-Temperature Restructuring of CeO<sub>2</sub>-Supported Ru Nanoparticles Determines Selectivity in CO<sub>2</sub> 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
- **High-Energy-Resolution X-ray Absorption Spectroscopy for Identification of Reactive Surface Species on Supported Single-Site Iridium Catalysts** *CHEMISTRY-A EUROPEAN JOURNAL*  
Hoffman, A. S., Sokaras, D., Zhang, S., Debeve, L. M., Fang, C., Gallo, A., Kroll, T., Dixon, D. A., Bare, S. R., Gates, B. C.  
2017; 23 (59): 14760–68
- **Understanding and controlling the activity and stability of Pd/Pt oxide catalysts for methane activation**  
Cargnello, M., Goodman, E., Yang, A., Dai, S., Wrasman, C., Bare, S., Hoffman, A., Graham, G., Pan, X.  
AMER CHEMICAL SOC.2017
- **Uniform Pt/Pd Bimetallic Nanocrystals Demonstrate Platinum Effect on Palladium Methane Combustion Activity and Stability** *ACS CATALYSIS*  
Goodman, E. D., Dai, S., Yang, A., Wrasman, C. J., Gallo, A., Bare, S. R., Hoffman, A. S., Jaramillo, T. F., Graham, G. W., Pan, X., Cargnello, M.  
2017; 7 (7): 4372–80