

Christopher L. Marshall, Ph.D.

#### A. Contact

Chemical Sciences and Engineering Division, Argonne National Laboratory, Argonne, IL 60439

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#### B. Education and Training

SUNY College at Potsdam	Chemistry	BA	1975
Michigan State University	Inorganic Chemistry	MS	1977
Michigan State University	Inorganic Chemistry	PhD	1980

#### C. Research and Professional Experience

2014 to Present	Sr. Res. Chemist	Argonne National Laboratory
1993 to 2014	Research Chemist	Argonne National Laboratory
1980 to 1992	Sr. Res. Chemist	Amoco Oil Research

#### D. 10 Most Relevant Publications

1. O'Neill, B., D. Jackson, J. Lee, C. Canlas, P. Stair, C. Marshall, J. Elam, T. Kuech, J. Dumesic, and G.W. Huber, Catalyst Design with Atomic Layer Deposition. ACS Catalysis, 2015. Submitted 11/25/2014.
2. Zhang, H., Y. Lei, A.J. Kropf, G. Zhang, J. Elam, J.T. Miller, F. Sollberger, F. Ribeiro, C.M. Akatay, E.A. Stach, J.A. Dumesic, and C.L. Marshall, Enhancing the stability of copper chromite catalysts for the selective hydrogenation of furfural using ALD overcoating. Journal of Catalysis, 2014. 317: p. 284-292.
3. Zhang, H., X. Gu, C. Canlas, A.J. Kropf, J.P. Greeley, J.W. Elam, J.A. Dumesic, P.C. Stair, and C.L. Marshall, Atomic Layer Deposition Overcoating: Tuning Catalyst Selectivity for Biomass Conversion. Angewandte Chemie. International Edition, 2014. 53(45): p. 12132-12136.
4. Wang, H., J. Lu, C.L. Marshall, J.W. Elam, J.T. Miller, H. Liu, J.A. Enterkin, R.M. Kennedy, P.C. Stair, K.R. Poeppelmeier, and L.D. Marks, In Situ XANES Study of Methanol Decomposition and Partial Oxidation to Syn-Gas over Supported Pt Catalyst on SrTiO<sub>3</sub> Nanocubes Catalysis Today, 2014. 237: p. 71-79.
5. Liu, J., Z. Guo, D. Childers, N. Schweitzer, C.L. Marshall, R.F. Klie, J.T. Miller, and R.J. Meyer, Correlating the degree of metal-promoter interaction to ethanol selectivity over MnRh/CNTs CO hydrogenation catalysts. Journal of Catalysis, 2014. 313: p. 149-153.
6. Jermwongratanachai, T., G. Jacobs, W. Ma, W.D. Shafer, M.K. Gnanamani, P. Gao, B. Kitiyanan, B.H. Davis, J.L.S. Klettlinger, C.H. Yen, D.C. Cronauer, A.J. Kropf, and C.L. Marshall, Fischer-Tropsch Synthesis: Comparisons between Pt and Ag Promoted Co/Al<sub>2</sub>O<sub>3</sub> Catalysts for Reducibility, Local Atomic Structure, Catalytic Activity, and ROR Cycles. Applied Catalysis A, General, 2014. 464-465: p. 165-180.
7. Hedlund, J.K., D.C. Cronauer, G. Jacobs, A.J. Kropf, J.A. Libera, J.W. Elam, C.L. Marshall, V.R.R. Pendyala, and B.H. Davis, Partially reducible oxide supported Ru nanoclusters as potential catalysts for hydrodeoxygenation of pyrolysis oils Applied Catalysis B, 2014. submitted August 2014.
8. Aich, P., H. Wei, B. Basan, A. Kropf, N. Schweitzer, C. Marshall, J. Miller, and R. Meyer, Single Atom Alloy Pd-Ag Catalysts for Selective Hydrogenation of Acrolein. Journal of Physical Chemistry, 2014. Submitted - Manuscript ID: jp-2014-067814.

9. Liu, J., R. Tao, Z. Guo, J.R. Regalbuto, C.L. Marshall, R.F. Klie, J.T. Miller, and R.J. Meyer, Selective Adsorption of Manganese onto Rhodium for Optimized Mn/Rh/SiO<sub>2</sub> Alcohol Synthesis Catalysts. *ChemCatChem*, 2013. 5: p. 3665 – 3672.
10. Enterkin, J.A., R. Kennedy, J. Lu, J. Elam, R. Cook, L.D. Marks, P.C. Stair, C.L. Marshall, and K.R. Poepelmeier, Epitaxial Stabilization of Face Selective Catalysts. *Topics in Catalysis*, 2013. 56: p. 1829–1834.

#### E. Synergistic Activities

1. Panel Lead, DOE/BES Basic Research Needs: Catalysis for Energy, August 2007
2. Organizing Committee, Operando IV Meeting, April 2012
3. Representative for Catalysis Club of Chicago to North American Catalysis Society
4. Director-Institute for Atom-efficient Chemical Transformations, 2009-2014.
5. Chair-Gordon Research Conference on Catalysis, 2016.

#### F. Collaborators from Other Institutions (last 4 years)

Broadbelt, Linda (Northwestern Univ.)	Greeley, Jeffrey (Purdue Univ.)
Delgass, Nicholas (Purdue Univ.)	Sereda, Grigoriy (Univ. of South Dakota)
Davis, Bertram (Univ. of Kentucky)	Khan, M. Ishaque (Illinois Inst. of Tech.)
Jacobs, Gary (Univ. of Kentucky)	Marks, Laurence (Northwestern U.)
Dumesic, James (Univ. of Wisconsin)	Huber, George (Univ. of Wisconsin)
Gounder, Raj (Purdue Univ.)	Kuech, Thomas (Univ. of Wisconsin)
Kung, Mayfair (Northwestern Univ.)	Wang, Hui (Univ. of Saskatchewan)
Mavrikakis, Manos (Univ. of Wisconsin)	Marks, Tobin (Northwestern Univ.)
Notestein, Justin (Northwestern Univ.)	Poepelmeier, Kenneth (Northwestern Univ.)
Stach, Eric (Brookhaven National Lab.)	Ribeiro, Fabio (Purdue Univ.)

#### G. Graduate and Postdoctoral Advisors

Pinnavaia, Thomas J. (Michigan State University)

#### H. Graduate Students and Postdoctoral Associates (last five years)

Aich, Payoli (University of Illinois, Chicago)  
 Deng, Weiling (BASF)  
 Enterkin, James (Phillips 66)  
 Guo, Neng (BP Corp.)  
 Kennedy, Robert (Northwestern University)  
 Kim, Taejin (SUNY at Stony Brook)  
 Liu, Dongxia (Johnson-Matthey)  
 Lobo, Rodrigo (UOP LLC)  
 Mader, Elizabeth (University of Washington)  
 Setthapun, Worajit (Asian Dev. Inst.)  
 Todorovic, Ruzica (University of Illinois, Chicago)  
 Wei, Haojin (Abbvie)  
 Zhang, Hongbo (Argonne National Laboratory)

I. Total Graduate Students: 4

Total Postdoctoral Associates: 18