

PUBLICATIONS

- Effects of pore diameter on particle size, phase, and turnover frequency in mesoporous silica supported cobalt Fischer-Tropsch catalysts*, I.T. Ghampson C. Newman, L. Kong E. Pier, K. D. Hurley, R. A. Pollock, B. R. Walsh, B. Goundi J. Wright, M. C. Wheeler, R. Meulenber, W.J. DeSisto, B. G. Frederick*, and R.N. Austin* in press *Applied Catalysis A* **2010** doi:10.1016/j.apcata.2010.08.028
- Cage escape competes with geminate recombination during alkane hydroxylation by the diiron oxygenase AlkB*, Rachel N. Austin, Kate Luddy, Karla Erickson, Marilla Pender-Cudlip, Erin Bertrand, Dayi Deng, Ryan S. Buzdygon, Jan B. van Beilen, John T. Groves *Angew. Chemie. Int. Ed., Engl.* **2008** 47(28) 5232-5234
- Radical intermediates in monooxygenase reactions of rieske dioxygenases* Sarmistha Chakrabarty, Rachel N. Austin, Dayi Deng, John T. Groves, John D. Lipscomb, *J. Am. Chem. Soc.* **2007**, 129, 3514-3515.
- In vivo mechanistic profiling of alkane hydroxylases using the diagnostic substrate norcarane* Elena A. Rozhkova-Novosad, Jong-Chan Chae, Gerben J. Zylstra, Erin M. Bertrand, Marselle Alexander-Ozinskas, Dayi Deng, Luke A. Moe, Jan B. van Beilen, Michael Danahy, John T. Groves, Rachel N. Austin, *Chemistry and Biology* **2007** 14, 165-172.
- The diagnostic substrate bicyclohexane reveals a radical mechanism for bacterial Cytochrome P450 in whole cells* Rachel N. Austin, Dayi Deng, Yongying Jiang, Kate Luddy, Jan B. van Beilen, Paul R. Ortiz de Montellano, John T. Groves, *Angew. Chemie. Int. Ed., Engl.* **2006**, 45(48), 8192-8194.
- Reaction mechanisms of non-heme diiron hydroxylases characterized in whole cell* Erin M. Bertrand, Ryo Sakai, Elena Rozhkova-Novosad, Luke Moe, Brian G. Fox, John T. Groves, Rachel N. Austin, *Journal of Inorganic Biochemistry*, **2005**, 99(10), 1998-2006.
- Remarkable Aliphatic Hydroxylation by Diiron Enzyme Toluene 4-Monooxygenase in Reactions with Radical/Cation Diagnostic Probes Norcarane, 1,1-Dimethylcyclopropane, and 1,1-Diethylcyclopropane* Luke A. Moe, Zhengbo Hu, Dayi Deng, Rachel N. Austin, John T. Groves, and Brian G. Fox, *Biochemistry*, **2004**, 43(50), 15688-15701.
- Xylene Monooxygenase, a membrane-spanning non-heme diiron enzyme that hydroxylates hydrocarbons via a substrate radical intermediate* Rachel N. Austin, Kate Buzzi, Eungbin Kim, Gerben Zylstra, John T. Groves, *Journal of BioInorganic Chemistry*, **2003**, 8, 733-740
- The photodecomposition of carbaryl in the presence of silver-doped Zeolite Y and Suwannee River Natural Organic Matter* Marsha Kanan, Sofian M. Kanan, Rachel Narehood Austin, Howard H. Patterson. *Environmental Science and Technology*, **2003**, 37, 2280-2285.
- Intermediate Q from soluble Methane Monooxygenase (sMMO) hydroxylates the mechanistic substrate probe norcarane: Evidence for a Stepwise Reaction* Brian J.

Brazeau, Rachel N. Austin, Carly Tarr, John T. Groves, John D. Lipscomb, *J. Am. Chem. Soc.*, **2001**, 123, 11831-11837.

Photoluminescence and Raman Spectroscopy as Probes to Investigate Silver and Gold Dicyanide Clusters Doped in A-Zeolite and Understand the Mechanism of the Photoassisted Degradation of Carboaryl Sofian M. Kanan, Carl P. Tripp, Rachel N. Austin, Howard H. Patterson, *Journal of Physical Chemistry B*, **2001**, 105, 9441-9448.

Environmental Topics in the Undergraduate General and Analytical Chemistry Curriculum Thomas J. Wenzel and Rachel N. Austin, *Environmental Science and Technology*, **2001**, 35(15) 326A-331A.

The Non-Heme Diiron Alkane Monooxygenase of Pseudomonas oleovorans (AlkB) Hydroxylates via a Substrate Radical Intermediate Rachel N. Austin, Hung-Kuang Chang, Gerben Zylstra, John T. Groves, *J. Am. Chem. Soc.*, **2000**, 122, 11747-8.

Characterization of iron(III)tetramesityl porphyrin and microperoxidase-8 in the molecular sieve MCM-41 Volker Schünemann, Alfred X. Trautwein, Ivonne M. C. M. Rietjens, Marelle G. Boersma, Cees Veeger, Dominique Mandon, Raymond Weiss, Kapil Bahl, Christopher Colapietro, Martin Piech, Rachel N. Austin, *Inorganic Chemistry*. **1999**, 38(21), 4901-4905.

Compound I and Compound II Analogues from a Porpholactone K. Jayaraj, A. Gold, R.N. Austin, L.M. Ball, J. Turner, D. Mandon, R. Weiss, J. Fischer, A. DeCian, M. Müther, E. Bill, A.X. Trautwein. *Inorganic Chemistry*. **1997**, 36(20), 4555-4566.

Molecular Structure of the Chloroiron (III) Derivative of the Meso-Unsubstituted, Pyrrole - substituted (2,7,12,17 Tetramethyl - 3,8,13,18 Tetramesityl) Porphyrin and the Weak Ferromagnetic Exchange Interaction in the Corresponding A_{1u} Oxoiron (IV) Porphyrin π -Cation Radical Complex K. Ayougou, D. Mandon, J. Fischer, R. Weiss, M. Müther, E. Bill, V. Schünemann, A.X. Trautwein, J. Turner, K. Jayaraj, R.N. Austin, A. Gold. *Chem. Eur. J.* **1996**, 2(9), 1159-1163.

Role of O-acetyltransferase in activation of oxidised metabolites of the genotoxic environmental pollutant 1-nitropyrene P.F. Roser, P. Ramachandran, R. Sangaiyah, R.N. Austin, A. Gold, L.M. Ball. *Mutation Research*, **1996**, 369, 209-220.

Influence of meso Substituents on Electronic States of Oxoferryl Porphyrin π -Cation Radicals K. Jayaraj, J. Turner, A. Gold, D.A. Roberts, R.N. Austin, D. Mandon, R. Weiss, E. Bill, A.X. Trautwein, *Inorganic Chemistry*, **1996**, 35, 1632-1640.

Compound I and II Analogues of a Chlorin K. Jayaraj, A. Gold, R.N. Austin, D. Mandon, R. Weiss, J. Turner, E. Bill, M. Müther, A.X. Trautwein. *J. Am. Chem. Soc.* **1995**, 117, 9079-9080.

Synthesis and Properties of Novel Substituted 4,5,6,7-tetrahydroindenes and Selected Metal Complexes Rachel N. Austin, T. Jeffrey Clark, Thomas E. Dickson, Christopher M. Kilian, Terence A. Nile, Daniel J. Schabacker. *Journal of Organometallic Chemistry*. **1995**, 491, 11.

Spin Coupling in Distorted High-Valent Fe(IV)-Porphyrin Radical Complexes M. Müther, E. Bill, A.X. Trautwein, D. Mandon, R. Weiss, A. Gold, K. Jayaraj, R.N. Austin. *Hyperfine Interactions*, **1994**, 91, 803-808.

Conformational Effects on the Redox Potentials of Tetraarylporphyrins Halogenated at the β -Pyrrole Positions Philippe Ochsenbein, Khajida Ayougou, Dominique Mandon, Jean Fischer, Raymond Weiss, Rachel N. Austin, Karupiah Jayaraj, Avram Gold. *Angew. Chem. Int. Ed. Engl.* **1994**, 33, 348-350.

Oxoferryl π -Cation Radical of β -Pyrrole Octachlorinated meso-Tetramesitylporphyrin: Electronic and Structural Properties Philippe Ochsenbein, Dominique Mandon, Jean Fischer, Raymond Weiss, Rachel Austin, Karupiah Jayaraj, Avram Gold, Eckhard Bill, Alfred X. Trautwein, James Turner. *Angew. Chem. Int. Ed. Engl.* **1993**, 32, 1437 - 1439.

β -Halogenated Porphyrins. Molecular Structures of 2,3,7,8,12,13,17,18- Octabromo - 5,10,15,20 - Tetramesityl porphyrin, Nickel(II) 2,3,7,8,12,13,17,18 - Octabromo - 5, 10, 15, 20 - Tetramesitylporphyrin and Nickel(II) 2,3,7,8,12,13,17,18 - Octabromo - 5,10,15,20 - Tetra (pentafluorophenyl) porphyrin D. Mandon, J. Fischer, R. Weiss, K. Jayaraj, R. N. Austin, A. Gold, P. S. White, O. Brigand, P. Battioni, D. Mansuy. *Inorganic Chemistry*, **1992**, 31, 2044-2049.