

List of publications: Dr. George E. Cutsail III

2022

- **Cutsail III, G. E.**, Banerjee, R., Rice, D. B., Stepanic, O. M., Lipscomb, J. D., DeBeer, S. (2022). Determination of the iron(IV) local spin states of the Q intermediate of soluble methane monooxygenase by K β X-ray emission spectroscopy. *JBIC: J. Biol. Inorg. Chem.* <https://doi.org/10.1007/s00775-022-01953-4>
- **Cutsail III, G. E.**, DeBeer, S. (2022). Challenges and Opportunities for Applications of Advanced X-ray Spectroscopy in Catalysis Research. *ACS Catal.* <https://doi.org/10.1021/acscatal.2c01016>
- Geoghegan, B. L., Liu, Y., Peredkov, S., Dechert, S., Meyer, F., DeBeer, S., **Cutsail III, G. E.** (2022). Combining Valence-to-Core X-ray Emission and Cu K-edge X-ray Absorption Spectroscopies to Experimentally Assess Oxidation State in Organometallic Cu(I)/(II)/(III) Complexes. *J. Am. Chem. Soc.* <https://doi.org/10.1021/jacs.1c09505>
- Haak, J., Kruger, J., Abrosimov, N. V., Helling, C., Schulz, S., **Cutsail III, G. E.** (2022). X-Band Parallel-Mode and Multifrequency Electron Paramagnetic Resonance Spectroscopy of S=1/2 Bismuth Centers. *Inorg. Chem.* <https://doi.org/10.1021/acs.inorgchem.2c01141>
- Helling, C., Haak, J., Wölper, C., **Cutsail III, G. E.**, Schulz, S. (2022). Sequential Reduction of Borylstibane to an Electronically Nonsymmetric Diboryldistibene Radical Anion. *Inorg. Chem.* <https://doi.org/10.1021/acs.inorgchem.2c00251>
- Henthorn, J. T., **Cutsail III, G. E.**, Weyhermüller, T., DeBeer, S. (2022). Stabilization of intermediate spin states in mixed-valent diiron dichalcogenide complexes. *Nat. Chem.* <https://doi.org/10.1038/s41557-021-00853-5>
- Kruger, J., Haak, J., Wölper, C., **Cutsail III, G. E.**, Haberhauer, G., Schulz, S. (2022). Single-Electron Oxidation of Carbene-Coordinated Pnictinidenes-Entry into Heteroleptic Radical Cations and Metalloid Clusters. *Inorg. Chem.* <https://doi.org/10.1021/acs.inorgchem.2c00249>
- Levin, N., Casadevall, C., **Cutsail III, G. E.**, Lloret-Fillol, J., DeBeer, S., Rudiger, O. (2022). XAS and EPR in Situ Observation of Ru(V) Oxo Intermediate in a Ru Water Oxidation Complex. *ChemElectroChem* <https://doi.org/10.1002/celec.202101271>
- Li, B., Geoghegan, B. L., Weinert, H. M., Wölper, C., **Cutsail III, G. E.**, Schulz, S. (2022). Synthesis and redox activity of carbene-coordinated group 13 metal radicals. *Chem. Comm.* <https://doi.org/10.1039/d2cc00216g>

2021

- **Cutsail III, G. E.**, Ross, M. O., Rosenzweig, A. C., DeBeer, S. (2021). Towards a unified understanding of the copper sites in particulate methane monooxygenase: an X-ray absorption spectroscopic investigation. *Chem. Sci.* <https://doi.org/10.1039/d1sc00676b>
- Duan, P. C., Schulz, R. A., Romer, A., Van Kuiken, B. E., Dechert, S., Demeshko, S., **Cutsail III, G. E.**, DeBeer, S., Mata, R. A., Meyer, F. (2021). Ligand Protonation Triggers H₂ Release from a Dinickel Dihydride Complex to Give a Doubly "T"-Shaped Dinickel(I) Metallodiradical. *Angew. Chem. Int. Ed.* <https://doi.org/10.1002/anie.202011494>
- Li, B., Geoghegan, B. L., Wölper, C., **Cutsail III, G. E.**, Schulz, S. (2021). Redox Activity of Noninnocent 2,2'-Bipyridine in Zinc Complexes: An Experimental and Theoretical Study. *ACS Omega* <https://doi.org/10.1021/acsomega.1c02201>
- Rosenbach, H., Walla, E., **Cutsail III, G. E.**, Birrell, J. A., Pascual-Ortiz, M., DeBeer, S., Fleig, U., Span, I. (2021). The Asp1 pyrophosphatase from *S. pombe* hosts a [2Fe-2S](2+) cluster in vivo. *JBIC: J. Biol. Inorg. Chem.* <https://doi.org/10.1007/s00775-020-01840-w>
- Schulte, Y., Geoghegan, B. L., Helling, C., Wölper, C., Haberhauer, G., **Cutsail III, G. E.**, Schulz, S. (2021). Observation of Discrete Valence Tautomers in Crystalline Cyclopentadienyl Radicals. *J. Am. Chem. Soc.* <https://doi.org/10.1021/jacs.1c05210>
- Weinert, H. M., Wölper, C., Haak, J., **Cutsail III, G. E.**, Schulz, S. (2021). Synthesis, structure and bonding nature of heavy dipnictene radical anions. *Chem. Sci.* <https://doi.org/10.1039/d1sc04230k>

2020

- **Cutsail III, G. E.** (2020). Applications of electron paramagnetic resonance spectroscopy to heavy main-group radicals. *Dalton Trans.* <https://doi.org/10.1039/d0dt02436h>
- **Cutsail III, G. E.**, Blaesì, E. J., Pollock, C. J., Bollinger, J. M., Krebs, C., DeBeer, S. (2020). High-resolution iron X-ray absorption spectroscopic and computational studies of non-heme diiron peroxo intermediates. *J. Inorg. Chem.* <https://doi.org/10.1016/j.jinorgbio.2019.110877>
- Helling, C., **Cutsail III, G. E.**, Weinert, H., Woelper, C., Schulz, S. (2020). Ligand Effects on the Electronic Structure of Heteroleptic Antimony-Centered Radicals. *Angew. Chem. Int. Ed.* <https://doi.org/10.1002/anie.202000586>
- Helling, C., Wölper, C., **Cutsail III, G. E.**, Haberhauer, G., Schulz, S. (2020). A Mechanistic Study on Reactions of Group 13 Diyls LM with Cp*SbX₂-From Stibanyl Radicals to Antimony Hydrides. *Chem. - Eur. J.* <https://doi.org/10.1002/chem.202001739>
- Liu, Y., Resch, S. G., Klawitter, I., **Cutsail III, G. E.**, Demeshko, S., Dechert, S., Kuhn, F. E., DeBeer, S., Meyer, F. (2020). An Adaptable N-Heterocyclic Carbene Macrocycle Hosting Copper in Three Oxidation States. *Angew. Chem. Int. Ed.* <https://doi.org/10.1002/anie.201912745>
- Van Stappen, C., Decamps, L., **Cutsail III, G. E.**, Bjornsson, R., Henthorn, J. T., Birrell, J. A., DeBeer, S. (2020). The Spectroscopy of Nitrogenases. *Chem. Rev.* <https://doi.org/10.1021/acs.chemrev.9b00650>

2019

- **Cutsail III, G. E.**, Gagnon, N. L., Spaeth, A. D., Tolman, W. B., DeBeer, S. (2019). Valence-to-Core X-ray Emission Spectroscopy as a Probe of O-O Bond Activation in Cu₂O₂ Complexes. *Angew. Chem. Int. Ed.* <https://doi.org/10.1002/anie.201903749>
- Helling, C., Wölper, C., Schulte, Y., **Cutsail III, G. E.**, Schulz, S. (2019). Synthesis of a Ga-Stabilized As-Centered Radical and a Gallastibene by Tailoring Group 15 Element-Carbon Bond Strengths. *Inorg. Chem.* <https://doi.org/10.1021/acs.inorgchem.9b01519>
- McGale, J., **Cutsail III, G. E.**, Joseph, C., Rose, M. J., DeBeer, S. (2019). Spectroscopic X-ray and Mossbauer Characterization of M₆ and M₅ Iron(Molybdenum)-Carbonyl Carbide Clusters: High Carbide-Iron Covalency Enhances Local Iron Site Electron Density Despite Cluster Oxidation. *Inorg. Chem.* <https://doi.org/10.1021/acs.inorgchem.9b01870>

2018

- **Cutsail III, G. E.**, Banerjee, R., Zhou, A., Que, L., Lipscomb, J. D., DeBeer, S. (2018). High-Resolution Extended X-ray Absorption Fine Structure Analysis Provides Evidence for a Longer Fe...Fe Distance in the Q Intermediate of Methane Monooxygenase. *J. Am. Chem. Soc.* <https://doi.org/10.1021/jacs.8b10313>
- Galle, L. M., **Cutsail III, G. E.**, Nischwitz, V., DeBeer, S., Span, I. (2018). Spectroscopic characterization of the Co-substituted C-terminal domain of rubredoxin-2. *Biological Chemistry* <https://doi.org/10.1515/hsz-2018-0142>
- Ganesamoorthy, C., Helling, C., Wölper, C., Frank, W., Bill, E., **Cutsail III, G. E.**, Schulz, S. (2018). From stable Sb- and Bi-centered radicals to a compound with a Ga=Sb double bond. *Nat. Commun.* <https://doi.org/10.1038/s41467-017-02581-2>

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- Hoffeditz, W. L., Katz, M. J., Deria, P., **Cutsail III, G. E.**, Pellin, M. J., Farha, O. K., Hupp, J. T. (2016). One Electron Changes Everything. A Multispecies Copper Redox Shuttle for Dye-Sensitized Solar Cells. *J. Phys. Chem. C* <https://doi.org/10.1021/acs.jpcc.6b01020>

2015

- Anderson, J. S., **Cutsail III, G. E.**, Rittle, J., Connor, B. A., Gunderson, W. A., Zhang, L. M., Hoffman, B. M., Peters, J. C. (2015). Characterization of an Fe N-NH₂ Intermediate Relevant to Catalytic N₂ Reduction to NH₃. *J. Am. Chem. Soc.* <https://doi.org/10.1021/jacs.5b03432>
- **Cutsail III, G. E.**, Telser, J., Hoffman, B. M. (2015). Advanced paramagnetic resonance spectroscopies of iron-sulfur proteins: Electron nuclear double resonance (ENDOR) and electron spin echo envelope modulation (ESEEM). *Biochim. Biophys. Acta-Mol. Cell Res.* <https://doi.org/10.1016/j.bbamcr.2015.01.025>

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- **Cutsail III, G. E.**, Stein, B. W., Subedi, D., Smith, J. M., Kirk, M. L., Hoffman, B. M. (2014). EPR, ENDOR, and Electronic Structure Studies of the Jahn-Teller Distortion in an Fe^V Nitride. *J. Am. Chem. Soc.* <https://doi.org/10.1021/ja505403j>
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- **Cutsail III, G. E.**, Doan, P. E., Hoffman, B. M., Meyer, J., Telser, J. (2012). EPR and ⁵⁷Fe ENDOR investigation of 2Fe ferredoxins from *Aquifex aeolicus*. *JBIC: J. Biol. Inorg. Chem.* <https://doi.org/10.1007/s00775-012-0927-7>
- Zielazinski, E. L., **Cutsail III, G. E.**, Hoffman, B. M., Stemmler, T. L., Rosenzweig, A. C. (2012). Characterization of a Cobalt-Specific P_{1B}-ATPase. *Biochemistry* <https://doi.org/10.1021/bi3006708>