

Participation in the Coordination Chemistry Conference

Abstract

This is a proposal for funds to attend the Coordination Chemistry Conference. The meeting will take place in Mexico, (5th – 9th December, 2013). The proposer has applied to present a paper on his research on hydrogenase models (coordination compounds) at this conference. Participation at this conference will provide the PI with the opportunity to meet and network with experts in coordination chemistry and learn about current advances in the field.

Purpose

The purpose of this project is to participate in the Coordination Chemistry Conference. Coordination chemistry is a fundamental topic within Chemistry and an area of interest to the PI. The 2013 meetings focus areas include, among others, Bioinorganic Chemistry, Catalysis, and Organometallic Chemistry. The PI will be presenting a poster on organometallic models of hydrogenase enzymes.

Significance

Professional Enhancement Projects:

The proposer conducts research on the design, preparation, and characterization of coordination compounds as catalysts for the production of hydrogen, a clean alternative to fossil fuels. Our catalysts are models of the hydrogenase enzyme. I intend to present our recent and exciting results at the coordination chemistry conference. This conference is one of the few conferences that brings together coordination chemists. The

participants with learn about recent developments, gain new ideas, and network with other experts in the field.

Process for Attainment of Objectives

Our paper titled: "Towards Stable and Efficient Hydrogen Evolution Catalysts" has been accepted for presentation at the coordination chemistry conference. The friendly atmosphere of this Conference, with planned discussion sessions and informal meetings, provides an unparalleled international forum in which scientists can exchange ideas to advance research in coordination chemistry.

Repeated Request

The proposer was supported by a Professional Development Grant (PDG) to attend the 2012 Gordon Research Conference on Renewable Energy: Solar Fuels. The meeting took place in Lucca, Italy (May 13-18, 2012). Our poster attracted a lot of visitors. Through discussions with other participants, we received suggestions that have resulted in new projects, collaborations, and better understanding of our catalysts. I was awarded another PDG during the April 2013 review circle for conference participation in Hungary, July 2013. However, the funds could not be made available before July 1, the new budget year. As a result, I could not attend the conference. I was therefore advised by the VP for academic affairs to reapply for the PDG grant during the October cycle.

Dissemination of Results

At the Coordination Chemistry Conference, the PI will give a presentation on his research. The title of the poster presentation is "Towards Stable and Efficient Hydrogen Evolution Catalysts".

Budget

Travel: Conference		Quantity	Total
Registration*		1	\$1,470
Transportation	Air (little Rock to Mexico)	1	\$500
	Ground(Mexico)	Airport shuttle	\$100
	Ground(Russellville-little Rock)	150 miles x \$0.42	\$63
	Parking (Little Rock Airport)	5 weeks	\$50
Total cost of project			\$2,183
Total requested			\$2,183

*Fee Include conference registration and attendance, accommodation, all meals and drinks on a specially negotiated all-inclusive package and The Gala Night.

Bibliography

Recent publications by PI (Undergraduate authors at ATU underlined):

- [1] "Using Naphthalene-2-thiolate Ligands in the Design of Hydrogenase Models with Mild Proton Reduction Overpotentials" **C. A. Mebi**, D. S. Karr, B. C. Noll *Polyhedron*, **2013**, 50(1), 164-168.
- [2] "Iron(I)-Carbonyl Clusters Tethered to (Trifluoromethyl) thiophenolates" **C. A. Mebi**, J. J. Trujillo, B. L. Rosenthal, R. B. Bowman, B. C. Noll, P. J. Desrochers *Transition Met. Chem.* **2012**, 37(7), 645-650.
- [3] "Diironcarbonyl-coumarin complex: Preparation, intramolecular electron transfer, and electro-generation of hydrogen " **C. A. Mebi**, J. J. Trujillo, A. A. Bhuiyan *Cent. Eur. J. Chem.* **2012**, 10(4), 1218-1222.
- [4] "Biomimetic Hydrogen Generation Catalyzed by Triironnonacarbonyl Disulfide Cluster" **C. A. Mebi**, K. E. Brigance, R. B. Bowman *J. Braz. Chem. Soc.* **2012**, 1(23) 186-189.
- [5] "Diironhexacarbonyl Clusters with Imide and Amine Ligands: Hydrogen Evolution Catalysts" **C. A. Mebi**, D. S. Karr , R. Gao *J. Coord. Chem.* **2011**, 64(24), 4397-4407.
- [6] "DFT Study on Structures, Electronic Properties, and Reactivity of *cis*-isomers of [(NC₅H₄-S)₂Fe(CO)₂]" **C. A. Mebi** *J. Chem. Soc.* **2011**, 123(5), 727-731
- [7] "(Naphthalene-1,8-dithiolato)Diironhexacarbonyl complex: Catalytic Reduction of Acetic Acid, UV-Visible Spectroscopy, and DFT Study" **C. A. Mebi**, C. M. Felton *J. Undergrad. Chem. Res.* **2011**, 10(5), 111-115.
- [8] "Binuclear Iron(I) Complex Containing Bridging Phenanthrene-4,5-dithiolate Ligand: Preparation, Spectroscopy, Crystal Structure, and Electrochemistry" **C. A. Mebi**, B. C. Noll, R. Gao, D. Karr *Z. Anorg. Allg. Chem.* **2010**, 2550-2554.