
View Abstract

SUBMISSION ROLE: 2018 Southeast Regional Meeting

CONTROL ID: 3058787

ABSTRACT SYMPOSIUM NAME: Miniaturized Electrodes & Materials for Electrochemical Sensing, Imaging, & Energy Conversion (Oral)

AUTHORS (FIRST NAME, LAST NAME): [Elizabeth T. Papish](#)¹, Sanjit Das¹, Chance M. Boudreaux¹, Dalton B. Burks¹, Fengrui Qu¹, Roberta R. Rodrigues², Robert W. Lamb³, Jared H. Delcamp², Charles E. Webster³

INSTITUTIONS (ALL): 1. Dept. of Chemistry, The University of Alabama, Tuscaloosa, AL, United States.

2. Chemistry and Biochemistry, University of Mississippi, Oxford, MS, United States.

3. Mississippi State University, Mississippi State, MS, United States.

PRESENTER (EMAIL ONLY): etpapish@ua.edu

TITLE: Pyridinol Based CNC Pincer Catalysts for Carbon Dioxide Reduction: The Big Impact of One Small Remote Group

ABSTRACT BODY:

Abstract: The first examples of a CNC pincer ligands with a central pyridinol derived ring were recently reported. The differences in catalytic reactivity between CNC ligands with a central pyridine ring vs. a pyridinol derived ring are substantial and highly active and robust catalysts have been synthesized and studied. In these pincer ligands, the 4-substituent can be OMe, OH, or O⁻, and these latter two options allow for altered catalyst properties as a function of proton concentration. Catalytic studies have used ruthenium(II), nickel(II), and other transition metals. We have made metal complexes that can be protonated or deprotonated reversibly *in situ* to switch on or off the photocatalytic performance towards CO₂ reduction. Furthermore, the methoxy group on the pyridine ring offers unique catalysis advantages not seen with the unsubstituted analog. Our best catalysts offer selective CO formation, >300 turnover cycles, and a 40 h lifetime. Steric and electronic ligand effects are being studied with these catalysts by experimental and computational methods.

(No Image Selected)

Reason for Submitting: I was specifically invited to submit this paper.

Invited By: Shanlin Pan, span1@ua.edu

Agree to Bylaws: Are met by at least one author

Presenting Author Registration: I agree.

Meeting Attendance: I agree.

Withdrawal Confirmation: I agree.

Submitted Once: I agree.

Equipment Needs: (none)

Comments to Organizers: (none)

Student Type: (none)

Country of Citizenship: (none)

Country of Birth: (none)

Country of Residence: (none)

ACS MAPS Environment. Copyright © 2018 American Chemical Society. All rights reserved.
[Terms of Use](#) | [Privacy](#) | [ACS Homepage](#)

© Clarivate Analytics | © ScholarOne, Inc., 2018. All Rights Reserved.
ScholarOne Abstracts and ScholarOne are registered trademarks of ScholarOne, Inc.
ScholarOne Abstracts Patents #7,257,767 and #7,263,655.

[@ScholarOneNews](#) | [System Requirements](#) | [Privacy Statement](#) | [Terms of Use](#)

Product version number 4.15.1 (Build 39). Build date Jul 19, 2018 09:37:28. Server c832eqys1as