DEPARTMENT OF CHEMISTRY AND ENVIRONMENTAL SCIENCE
FALL 2017 GRAD SEMINAR SERIES

OPEN TO THE PUBLIC

DATE: WEDNESDAY, NOVEMBER 1, 2017

WHERE: CENTRAL KING BUILDING - 204
TIME: 2:30 PM

Refreshments at 2:30 pm – Seminar at 2:45 pm

GUEST SPEAKER

Andrew Bocarsly, Professor
Department of Chemistry
Princeton University
Princeton, New Jersey

TOPIC

p-Type Metal Oxides, a Rich Source of Photocathodes for the Formation of Solar Fuels

ABSTRACT

Dr. Andrew Bocarsly's research interests lie in the general field of physical inorganic chemistry, with emphasis on the chemistry of excited state and charge transfer processes and the chemistry of surfaces. These interests have resulted in his research focusing on electrochemistry, photochemistry, solid state chemistry, and fuel cells. There are three active projects (CO2 Reduction, Fuel Cells, and Cyanogels) on which graduate and undergraduate students currently work.

BIOGRAPHY

SELECTED RECENT PUBLICATIONS

Gu, J.; Yan, Y.; Krizan, J. W.; Gibson, Q. D.; Detweiler, Z. M.; Cava, R. J.; Bocarsly, A. B., "p-Type CuRhO2 as a Self-Healing Photoelectrode for Water Reduction under Visible Light." *Journal of the American Chemical Society* **2014,** *136* (3), 830-833.

Agarwal, J.; Shaw, T. W.; Stanton, C. J., III; Majetich, G. F.; Bocarsly, A. B.; Schaefer, H. F., III, "NHC-Containing Manganese(I) Electrocatalysts for the Two-Electron Reduction of CO2." *Angewandte Chemie-International Edition* **2014,** *53* (20), 5152-5155.

Detweiler, Z. M.; White, J. L.; Bernasek, S. L.; Bocarsly, A. B., "Anodized Indium Metal Electrodes for Enhanced Carbon Dioxide Reduction in Aqueous Electrolyte." *Langmuir* **2014,***30* (25), 7593-7600.

Yan, Y.; Gu, J.; Bocarsly, A. B., "Hydrogen Bonded Pyridine Dimer: A Possible Intermediate in the Electrocatalytic Reduction of Carbon Dioxide to Methanol." *Aerosol and Air Quality Research* **2014,** *14* (2), 515-521.

Watkins, J. D.; Bocarsly, A. B., "Direct Reduction of Carbon Dioxide to Formate in High-Gas-Capacity Ionic Liquids at Post-Transition-Metal Electrodes." *Chemsuschem* **2014,** *7* (1), 284-290.

Yan, Y.; Zeitler, E. L.; Gu, J.; Hu, Y.; Bocarsly, A. B., "Electrochemistry of Aqueous Pyridinium: Exploration of a Key Aspect of Electrocatalytic Reduction of CO2 to Methanol." *Journal of the American Chemical Society* **2013,** *135* (38), 14020-14023.

Gu, J.; Wuttig, A.; Krizan, J. W.; Hu, Y.; Detweiler, Z. M.; Cava, R. J.; Bocarsly, A. B., "Mg-Doped CuFeO2 Photocathodes for Photoelectrochemical Reduction of Carbon Dioxide." *Journal of Physical Chemistry C* **2013,** *117* (24), 12415-12422.

Appel, A. M.; Bercaw, J. E.; Bocarsly, A. B.; Dobbek, H.; DuBois, D. L.; Dupuis, M.; Ferry, J. G.; Fujita, E.; Hille, R.; Kenis, P. J. A.; Kerfeld, C. A.; Morris, R. H.; Peden, C. H. F.; Portis, A. R.; Ragsdale, S. W.; Rauchfuss, T. B.; Reek, J. N. H.; Seefeldt, L. C.; Thauer, R. K.; Waldrop, G. L., "Frontiers, Opportunities, and Challenges in Biochemical and Chemical Catalysis of CO2 Fixation." *Chemical Reviews* **2013,** *113* (8), 6621-6658.

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