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FACULTY PRESENTATION:
TRANSFORMING PLASTICS: SCIENCE AND TECHNOLOGY TO CONVERT WASTE INTO
A SUSTAINABLE AND ECONOMICAL FEEDSTOCK FOR CHEMICALS AND FUELS

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Summary: Plastics are an essential and ubiquitous part of modern economies, but plastic waste creates local and global challenges with unfortunate consequences affecting energy, manufacturing and agriculture, transportation, environmental and human health, and economic development. Professor Aaron Sadow and his team are leading the charge to develop new strategies to use discarded plastics as feedstocks for manufacturing valuable chemicals and liquid fuels, to motivate and support the recovery and recycling of plastics and to reduce costs, burden on landfills, and contamination in the environment. This work is supported by a four-year, \$12.8 million Energy Frontier Research Center grant from the U.S. Department of Energy to establish the multi-member and multi-disciplinary Institute for Cooperative Upcycling of Plastics (iCOUP) led out of the Ames National Laboratory by Sadow to investigate new ways transform plastic waste into renewable resources.

Presenters: Aaron Sadow is the David C. Henderson Professor in Iowa State University's Department of Chemistry, a senior scientist in the U.S. Department of Energy Ames National Laboratory, and director of the Institute for Cooperative Upcycling of Plastics (iCOUP), based at the Ames National Laboratory.

Professor Sadow's research group is developing new methods to efficiently transform chemical feedstocks into more valuable chemicals, including the conversion of methane and natural gas into chemical reagents, as well as chemical reactions that transform difficult-to-recycle plastic waste into recyclable liquids such as lubricants, solvents, and other biodegradable products.

Professor Sadow, who joined Iowa State in 2005, holds a bachelor's degree from Penn State University, a Ph.D. from the University of California, Berkeley, and completed a post-doctoral fellowship at ETH Zurich in Switzerland. He was promoted to associate professor in 2011, and to professor in 2016.