

Sustainable Energy Storage



Louise Berben
Associate Professor, Chemistry

CURRENT RESEARCH

Renewable energy for future generations

An increasing need for methods to store and harvest energy from renewable resources has provided significant inspiration for the field of inorganic chemistry in recent years. One area that is of particular interest regarding energy storage and harvesting processes is the study of molecules or catalysts, that chemists use to turn one chemical into another. Using redox reactions, Dr. Louise Berben, Associate Professor of Chemistry at the University of California, Davis, develops catalysts for conversion of molecules that can be used as fuels and for useful energy. Her advanced chemistry allows for the storage of energy in chemical bonds which makes energy storage more efficient than even batteries! Thus, her research is an important step towards ensuring that mankind will be able to maintain current standards of living while reducing the impact of our footprint on the environment.

Although fundamental in nature, Dr. Berben's research has many practical opportunities that motivate her team's choice of problem which include, a need for new fuels that can be produced from abundant resources and developing methods where electricity can be stored in the chemical bonds of fuels. Motivated by the hope that we could "live in a way that allows our future generations to also live comfortably in a world and with resources similar to those that we enjoy," she and her team work tirelessly to invent novel solutions to challenging problems. Dr. Berben's unique approaches to low energy reaction pathways that convert abundant low energy molecules into valuable resources using renewable energy offer a new and exciting perspective to sustainable energy. Using the most abundant metals, all being found in the US, she and her team...

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AFFILIATION



University of California, Davis

EDUCATION

- B.Sc. (Honors 1st Class), in Pure and Applied Chemistry, 1999, The University of New South Wales
- Ph.D., in Chemistry, 2005, University of California, Berkeley

AWARDS

- Fellow of the Royal Society of Chemistry, 2014
- Organometallics Young Investigator Fellow, 2014
- Chemical Communications Emerging Investigator Lectureship, 2013
- Alfred P. Sloan Foundation Fellow, 2012
- National Science Foundation CAREER Award, 2011

RESEARCH AREAS

Environment, Chemical, Clean Energy, Clean Energy

FUNDING REQUEST

Your contributions will support the continued research of Dr. Louise Berben, Associate Professor of Chemistry at the University of California, Davis, as she develops sustainable processes for fuel and chemical production from renewable resources. Donations of \$10K - \$20K will have a meaningful impact on ongoing projects while larger gifts can be used to initiate new projects in Dr. Berben's lab focused on sustainable chemistry! Support of one graduate student is \$50K/year and support of a postdoctoral researcher is \$70K/year. Additional funds support equipment and associated project needs.