創製光分子科学セミナー

日時： 平成24年11月9日(金)13時20分～14時50分
場所： 自然科学研究棟１号館　204会議室

演者： R. David Britt 教授
Department of Chemistry, University of California at Davis, CA, USA

演題： Multifrequency EPR of Paramagnetic Intermediates with Relevance to Energy and Medicine

Our laboratory at the University of California, Davis uses Electron Paramagnetic Resonance (EPR) spectroscopy to study a variety of metalloenzymes that catalyze biochemical reactions of medical or energy relevance. In the energy arena for example, oxygenic photosynthesis uses a manganese/calcium cluster to split water using visible light absorbed by the photosystem II reaction center. The electrons and protons produced can be utilized in making biofuels, with molecular hydrogen being the simplest. Interest in biological hydrogen production has led us to work in a new area for the Britt lab, EPR studies of the role of Fe-S centers of hydrogenase enzymes, including details of the bio-assembly of the catalytic centers. Also, we are complementing work on enzymes with bioinspired synthetic catalysts, such as Nocera's water splitting electrodeposited cobalt-oxide film that spontaneously assembles under electrical potential.

For such studies we use of set of continuous wave and pulse EPR spectrometers in our CalEPR center (http://brittepr.ucdavis.edu) covering a frequency range from 8 to 130 GHz. Higher frequency EPR is often performed in collaboration with the National High Magnetic Field Laboratory in Florida.

CV of Professor R. David Britt:

North Carolina State University, B. S., 1978
University of California, Berkeley, M. A., 1980
University of California, Berkeley, Ph. D., 1988
Postdoctoral Fellow, Lawrence Berkeley Laboratory, 1988-1989
Assistant Professor, University of California at Davis, 1989-1994
Associate Professor, University of California at Davis, 1994-1997
Professor, University of California at Davis, 1997-present
Chair, Department of Chemistry, University of California at Davis, 2005-2008
Camille and Henry Dreyfus Award (1989-1994)
International EPR Society, Young Investigator Award (1994)

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