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Frontiers in Catalysis Science and Engineering Seminar Series

Electron Bifurcation:

The recently recognized 3rd mechanism of biological energy conservation



Prof. John W. Peters

Professor of Chemistry and Biochemistry
Director of the Biological Electron Transfer
and Catalysis Energy Frontier Research Center
Montana State University

Monday, September 26, 2016

9:00am

EMSL Boardroom

Abstract: Electron bifurcation is the recently recognized third mechanism of biological energy conservation. It simultaneously couples exergonic and endergonic oxidation-reduction reactions to circumvent thermodynamic barriers and minimize free energy loss. Little is known about the details of how electron bifurcating enzymes function, but specifics are beginning to emerge for several bifurcating enzymes. To date, those characterized contain a collection of redox cofactors including flavins and iron-sulfur clusters. The current understanding of bifurcating enzymes and the hypothetical mechanistic features required to reversibly partition multiple electrons from a single redox site into exergonic and endergonic electron transfer paths will be discussed. New insights into the mechanism of electron bifurcation from a combination of structural and spectroscopic work will be presented.

Host: Simone Rauegi, 372-6902

Admin POC: Tricia Sorensen, 371-6504