



American Chemical Society, Orange County Section

NOVEMBER DINNER MEETING

Thursday, November 12, 2009

The DoubleTree Club Hotel
7 Hutton Centre Drive, Santa Ana
Phone: 714-751-2400

Amazing and Contrary Oxygen - Quencher and Activator, Thief and Donor, Killer and Life-Giver

Dr. John W. Kenney, III
Concordia University, Irvine

Social: 5:30 p.m.
Dinner: 6:00 p.m.
Program: 7:00 p.m.

All Reservations: Please contact us no later than 12 noon on Monday, November 9th, 2009. Email: OCACS@sbcglobal.net. Please indicate if you will be attending dinner or program only! Please list the names of all attendees!

Dinner Cost: \$25 for members; \$25 for member's spouses; \$30 for non-members or those without reservations.

Host: OCACS pays the hotel on the basis of the number of dinner reservations made. Please help our efforts to keep the Dinner Program going by honoring your reservations.

Program: Members and guests are invited to attend the program at 7:30PM. There is no charge for the program but reservations are requested. Space may be limited.

Directions: Take the Costa Mesa freeway (55). Exit at MacArthur Blvd. and go west (towards South Coast Plaza). Turn left at MacArthur Place. DoubleTree Club Hotel is straight ahead slightly to the left. Use parking lot in front of hotel or follow signs to nearby parking. If in error you turn right at Hutton Centre Drive, you will find the DoubleTree Hotel. This is not the DoubleTree Club Hotel. Please be aware of the similar hotel names. Our dinner is at the DoubleTree **Club** Hotel.

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Abstract

If molecular oxygen, O₂, were some rare and expensive chemical rather than the common gas we breathe comprising approximately 20% of the Earth's atmosphere, perhaps we would be better poised to recognize and to appreciate just what an amazing and unusual molecule it really is. Oxygen quenches but also activates many photophysical and photochemical processes. It can steal energy but it can also donate energy. While absolutely necessary for life, it can become a deadly killer under the appropriate conditions. In this presentation, a brief historical review of the exponential growth in our understanding of the properties of molecular oxygen will be employed to set the context for discussing current research in the Chemical Physics Laboratory at Concordia University, an important focal point of which is to use spectroscopic methods to probe subtle interactions between molecular oxygen and systems containing delocalized pi-electron domains.

Biographical Sketch

Dr. Kenney joined the faculty of Concordia University in Irvine, CA as professor of chemistry and chemical physics in 2001 after 20 years as a chemistry professor at Eastern New Mexico University. Since coming to Concordia, he introduced a new chemistry major, rebuilt all chemistry teaching laboratory facilities, and re-established his research laboratory, the Chemical Physics Laboratory, a spectroscopic research laboratory dedicated to educating undergraduate researchers and selected high ability high school students. During his New Mexico years he actively collaborated in high pressure spectroscopic research initiatives at Los Alamos National Laboratory and in spectroscopic research projects related to rocket propulsion at Edwards Air Force Base, CA. He was also greatly privileged to work in the laboratories of colleagues at UC-Irvine and UC-Riverside while he was building his laboratory at Concordia. Dr. Kenney's research focuses on challenging spectroscopic studies of inorganic, organometallic, and condensed matter systems under extreme conditions—high pressures, low temperatures, reactive environments, and high magnetic and/or electric fields. His undergraduate research group is known for the excellence and professional success of the students it produces. Former research students mentored by Dr. Kenney may be found in graduate school, academia, medicine and allied health sciences, private industry, and government. Dr. Kenney received his B.S. degree in chemistry from the University of Nevada, Reno. His Ph.D. in physical chemistry is from the University of Utah. He did postdoctoral research in chemical physics (electronic spectroscopy of transition metal complexes) under the auspices of G. A. Crosby at Washington State University. His wife, Inga, is also a chemistry faculty member at Concordia University as is his postdoctoral mentor, G. A. Crosby.