

subject which will be discussed in this lecture is the concerted dissociation processes of some cyclic hydrocarbons eliminating stable molecules as products. The dissociation of tetralin and cyclohexadiene will be shown as examples.

91. CHEMICAL KINETICS AS A CONTRACT SPORT. C. E. Kolb, Aerodyne Research Inc., Billerica, MA 01821.

Earlier in this century chemical kinetics was a basic physical chemistry research topic widely pursued in leading academic chemistry departments. More recently, with a few notable exceptions, those leading chemical kinetics research groups found at universities are located in engineering and/or earth and atmospheric science departments, while even more are located in government, industry or independent research and development laboratories focused on understanding key environmental, energy conversion or industrial processes. Chemical kinetics now appears to be a discipline practiced chiefly for its applications to societal problems. The chemical kinetics activities directed by D. M. Golden at SRI International are strikingly successful in generating data for key applied problems while at the same time advancing our understanding of chemical kinetics as a scientific discipline. This accomplishment, carried out in a fully self-supporting contract research environment, is remarkable. In this talk, I will contrast the chemical kinetics activities in two contract R&D laboratories, one on the right side of the U.S. (ARI) and the other on the left (SRI). Their approach to common applied problems ranging from stratospheric heterogeneous kinetics to plasma etching systems for semiconductor processing will be compared and contrasted. Empirically discovered "Golden Rules" for the pursuit of quality chemical kinetics research in a contract R&D environment will be presented and discussed.

92. CHEMICAL KINETICS AND THE ENVIRONMENT: STUDIES AT SRI INTERNATIONAL. D. M. Golden, Department of Chemical Kinetics, Chemistry Laboratory, SRI International, Menlo Park, California 94025.

Environmental problems are often associated with chemical transformations. An understanding of the mechanisms and rates of these transformations has occupied us at The Department of Chemical Kinetics at SRI since its inception. I will discuss some recent work in four areas: the current status of bond dissociation energy measurements via halogenation techniques; a laboratory study of the reaction between CH_3 and O_2 ; methods for incorporating reactions that proceed through bond complexes into a chemical model, $\text{CO} + \text{OH}(\text{D}) \rightarrow \text{CO}_2 + \text{H}(\text{D})$ revisited; and recent studies of chemistry on ice and acid-doped ice of interest in polar stratospheric chemistry.

WEDNESDAY AFTERNOON - SECTION A - SYMPOSIUM ON ORGANIC SUBSTANCES AND SEDIMENTS IN WATER VI. INTERFACIAL AND ORGANIC-INORGANIC PROCESSES (CONTINUED) - A. Stone, B. Dempsey, Presiding

93. SUBMICRON SIZED AQUATIC COMPOUNDS: FROM ARTEFACTS TO ECOLOGICALLY MEANINGFUL DATA. J. Buffle, G.G. Leppard, R.R. De Vitre, D. Perret, Dept of Inorganic, Analytical and Applied Chemistry (University of Geneva), Sciences II, 1211 Geneva 4, Switzerland.

Correct physical and chemical characterizations of submicron sized colloids and macromolecules, as well as of the small organic or inorganic compounds associated to them, are very difficult because of numerous artefacts which may occur during sampling, preconcentration and fractionation. These artefacts and the new developments allowing to overcome them will be discussed, in particular for cascade filtration and electron microscopy applied to autochthonous inorganic and organic lake colloids: iron hydroxophosphate and sulfide, and fulvics, humics and polysaccharides will be used as examples. Our capability to discriminate between natural and artefactual aggregates, as well as the meaning and usefulness of the definition of a particular size limit between "dissolved" and "particulate" matter will be discussed. The latter will be done in the context of biological uptake processes and in relation to the capabilities of voltammetric techniques for making such a discrimination.