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Brief Biography

Kenneth Brezinsky received his PhD in physical chemistry from the City University of New York in 1978. His subsequent Post Doctoral Research appointment was at Brookhaven National Laboratory. Dr. Brezinsky left BNL in late 1979 to join the combustion research group of Profs. Glassman and Dryer at Princeton University where he remained for seventeen years. During that time he was promoted to the rank of Senior Research Scientist which led to his subsequent appointment in 1996 as Full Professor at the University of Illinois at Chicago. At UIC Dr. Brezinsky has been a member of both the Chemical Engineering and Mechanical Engineering departments where he has continued his combustion chemistry research.

Relevant Experience and Interests

Dr. Kenneth Brezinsky has been working in the area of combustion chemistry, aromatics oxidation and pyrolysis, oxidation of gasoline and diesel surrogates, and soot precursor chemistry since 1980. His research has always involved significant experimental and theoretical components and much of his early work on aromatics oxidation chemistry has formed the framework and basis of current predictive models on aromatics combustion. More recently his research group at UIC has been active in studying chemistry involved in the combustion of single ring aromatics like benzene and toluene, biodiesel oxidation and in elucidating pathways for key soot precursors under practical combustion conditions, using the high pressure shock tube.

Five Publications Relevant to the Present Subject Area

1. R. Sivaramakrishnan, H. Vasudevan, R. S. Tranter, and K. Brezinsky (2006). "A Shock Tube Study of the High Pressure Thermal Decomposition of Benzene," *Comb. Sci. Tech.* 178, 285-305.
2. R. Sivaramakrishnan, R.S. Tranter, and K. Brezinsky (2005). "A High Pressure Model for the Oxidation of Toluene," *Proc. Combust. Inst.* 30, 1165-1173.
3. W. Tang, R.S. Tranter, and K. Brezinsky (2005). "Isomeric Product Distributions from the Self Reaction of Propargyl Radicals," *J. Phys. Chem. A* 109, 6056-6065.
4. R. Sivaramakrishnan, R. S. Tranter, and K. Brezinsky (2005). "Ring Conserved Isodesmic Reactions: A New Method for Estimating Heats of Formation of Aromatics and PAHs," *J. Phys. Chem. A* 109, 1621-1628.
5. R. Sivaramakrishnan, R. S. Tranter, and K. Brezinsky (2004). "High Pressure, High Temperature Oxidation of Toluene," *Combust. Flame* 139, 340-350.

Other Selected Publications

1. W. Tang and R.S. Tranter, and K. Brezinsky (2006). "An Optimized Semi-Detailed Sub-mechanism of Benzene Formation from Propargyl Recombination," *J. Phys. Chem. A* 110, 2165- 2175.
2. W. Tang and K. Brezinsky (2006). "Chemical Kinetic Simulations Behind Reflected Shock Waves," *Int. J. Chem. Kinet.* 38, 75-97.
3. R.S. Tranter, A. Raman, R. Sivaramakrishnan, and K. Brezinsky (2005). "Ethane Oxidation and Pyrolysis from 5 Bar to 1000 Bar: Experiments and Simulation," *Int. J. Chem. Kinet.* 37, 306-331.
4. R.S. Tranter, W. Tang, K.B. Anderson, and K. Brezinsky (2004). "Shock Tube Study of Thermal Rearrangement of 1,5-Hexadiyne over Wide Temperature and Pressure Regime," *J. Phys. Chem. A* 108, 3406-3415.
5. R.S. Tranter, H. Ramamoorthy, A. Raman, M. D. Allendorf, and K. Brezinsky (2002). "High-Pressure Single-Pulse Shock Tube Investigation of Rich and Stoichiometric Ethane Oxidation," *Proc. Combust. Inst.* 29, 1267-1275.