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TITLE

Analytical techniques - The final frontier?

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- Can classical manual measurements compare with modern analytical techniques, say a visual polarimeter and an ORD instrument)?
- How would the ratio of the bromine isotopic peaks in the mass spectrum provide an understanding of a preferential aromatic nitro displacement reaction (even in the presence of two bromine atoms) and lead to light sensitive natural product based 'Photoresists for Microlithography'? What could be the relation between 2D- NMR studies and the microstructure of polymers as well as the mechanism of action of such materials- the real workhorses of the multi-billion dollar microelectronic industry?
- How could two insignificant broad peaks in the aromatic region of the ^{1}H- NMR spectrum guide one to a rapidly equilibrating degenerate system? Would it impel one to consider the use of "T- Jump NMR"?
- Could the presence of multiple signals in the methoxy region of a ^{1}H-NMR spectrum point to a 'long lived species' ("True Nitrenes")? Where and how would one characterize such a reactive intermediate? Can this trail lead to material science, photovoltaics and proteomics/ lipidomics?

It is the contention of the author that there is much cogitation, planning and execution before analytical techniques come into the picture, often generating a great deal of raw data. The subsequent analysis involves many steps of interpretation which could be a very creative venture.

Biography

Dr S. V. Eswaran, Head, Chemistry Department and Dean, (Academics), St. Stephen's College, University of Delhi, Delhi and has taught there for 43 years. Served as Principal, Deshbandhu College, University of Delhi, Delhi for two years, 2001-03 and as a member for many national committees, including the Department of Biotechnology, Government of India; Star Colleges Committee and Board of Studies; Shiv Nadar University, Greater NOIDA; Ph. D., Delhi, 1973; Post-Doc. Max Planck, Munich, 1976-77; Heidelberg, Karlsruhe, 1984; Goettingen, 1997, Germany; TU, Delft, Netherlands, 1990; Ohio State University, 1997; Brown University, 2006, USA. Best teacher award, 2007; distinguished teacher award, 2009; DADD fellowship, 1976-77. Published 60 papers, granted many patents and supervised 4 Ph. D. and 21 M. Sc/ M. Tech. thesis.