

About Prof. K. K. Balasubramanian



Prof. Kalpattu Kuppaswamy Balasubramanian (popularly and affectionately known as **Prof.KKB**) was born on 5th September 1939. He obtained his **B.Sc** (Chemistry Honours, Loyola College, Chennai) in 1960 and **M.Sc.** (Organic Chemistry, by research, University of Madras) in 1961. He received his **Ph.D.** degree in synthetic organic chemistry in 1965 from University of Madras, Chennai, India, under the guidance of Prof. B. S. Thyagarajan (well known for his contributions to mechanistic organic chemistry). He worked as a **Post-Doctoral Fellow** in the University of Madras during 1965-66. Subsequently he continued the **Post-doctoral work** in Wayne State University, Detroit, Michigan, USA during 1966–1969 in the field of synthetic carbohydrate chemistry, in the group of Prof. C.L. Stevens. After return, he spent a year as **Scientific Pool Officer** in the Department of Organic Chemistry, University of Madras. He joined IIT Madras in 1971 as a **Lecturer** in the Department of Chemistry.

During his career in IITM, he held many positions that include Senior Research Fellowship of the **Humboldt Foundation** at the University of Braunschweig (1977-78) and second **Humbolt Fellowship** in University of Karlsruhe (1984-85) as visiting professor. In 1994-95 he served as guest scientist in the University of Nancy, Nancy, France and at NIST, Bethesda, Maryland, USA.

Prof.KKB has about 32 years of teaching experience and more than five decades of intense research experience. **Prof. KKB** has contributed extensively to the area of aromatic Claisen rearrangement (well known organic 'name reaction') both in the synthetic and mechanistic aspects. **Prof. KKB** has demonstrated the utility, for the first time, of Mitsunobu coupling reaction for synthesizing sensitive tertiary ethers and mechanism of this reaction in bicyclic alcohols using deuterium labeling. He discovered

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some interesting transformations on the cathodic reduction of *beta*-chlorovinyl aldehydes and successfully used this electrochemical tool for achieving selective transformation in multi-functional systems. He has more than **250 research publications** and continues to publish research articles.

About 30 students have obtained their Ph.D. degree working under the guidance of Prof. KKB during his tenure at IITM.

During his post-retirement career Prof. KKB has been the co-guide to 7 students who had registered in various institutions in and around Chennai.

While contributing to the academic excellence, he invested his expertise in building industry-academic relationship by doing industry consultancy in his early years in IIT when this was not common among institutes or universities.

He has a thirst for multidisciplinary research during his research career. To name a few of his work that are related to photochemistry, radiochemistry, electrochemistry, enzyme catalysis, biotransformations, flow chemistry, process chemistry, etc.

Picking up from his post-doctoral research days, Prof. KKB reentered the domain of carbohydrate chemistry creating a significant impact by developing the chemistry of 2-C-formylglycals which have emerged as versatile intermediates.

After retirement he continues to be active providing his guidance to serve Pharma industries *viz.* Shasun Chemicals and Drugs Ltd., Alpha Amins, Kawman Pharma, Anjan Drugs, Amrutanjan Ltd, etc for nearly 20 years and still continuing. Prof. KKB was also associated with educational institutions such as B.S. Abdur Rahman Crescent Institute of Science and Technology and Sri Ramachandra Institute of Higher Education and Research, Chennai. Reestablishing his contacts with IIT Madras, **Prof. KKB** functions as INSA scientist in the department of biotechnology, since the last few years. He is actively pursuing research in collaboration with the department of biotechnology and dept. of chemical engineering.

Prof.KKB received TR Govindachari 60th **Birthday Commemoration Award**, the Fr Yedanapalli Memorial Lecture and Prof. S. Swaminathan 60th Birthday Commemoration Lecture of INSA (2000), Lifetime Achievement Award by the Chemical Research Society of India. He is an elected member of distinguished science

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academies; Fellow of the National Academy of Sciences (**FNA**) in 1993 and Fellow of the Indian Academy of Sciences, Bangalore (**FASc**).

He readily volunteered to teach chemistry to undergraduate students during the formative years of the newly established IITs in Tirupati and Palakkad. He is in the advisory board of various academic institutions such as IIT Tirupati, IIT Palakkad, Central University of Karnataka, VIT and SRM Institutes. He is one of the sought after speakers by colleges and universities for motivating students to pursue research. He supports the student community by delivering chemistry talks and motivating lectures to students preparing for CSIR scholarship qualifying examinations.

Coincidentally and appropriately, **Prof. KKB's birth date** (September 5) is also celebrated throughout India as **Teachers' Day** !!!!!