

Sasanka Chandra Bhattacharyya (1918–2013)

The illustrious career of Sasanka Chandra Bhattacharyya (31 August 1918–19 May 2013) touched several institutes and many individuals and left an indelible mark on all of them. He was one of the founding fathers of the Department of Chemistry at the Indian Institute of Technology Bombay (IIT Bombay). His association with the department had only been for a brief period of a little over a decade (1966–1977), during which his example influenced the trajectory of the department. He moved to IIT Bombay from National Chemical Laboratory (NCL), Pune, where he was heading a group of about 100 researchers, with the purpose of shaping the young Chemistry Department at IIT Bombay in its infancy, as it had come into existence just a year ago in 1965. Along with Bhattacharyya came several of his research colleagues and co-workers, who too joined the rank of the Chemistry Department as faculty and staff members, and on whose collective shoulders the department grew from strength to strength. A true pioneer that he was, Bhattacharyya brought in the culture of research to the newly born department by raising sponsorship grants, including that of securing the first US-funded research grant to IIT Bombay, which till then was functioning with Russian aid that came in kind rather than cash. The PL-480 funds were used to support research as there were hardly any funds available from the Institute for this purpose. In addition to leading a large research group, Bhattacharyya was an able administrator with great trouble-shooting abilities and led the Chemistry Department not only as a Head but also the Institute as a Deputy Director till 1977, when he moved to Bose Institute, Kolkata as Director.

Bhattacharyya obtained his Bachelor's degree (B Sc) in 1938 from the University of Calcutta and the Master's degree (M Sc) in 1940 from the University of Dacca. He obtained his Ph D degree in 1944 by carrying out doctoral research under the mentorship of P. C. Guha at the Indian Institute of Science (IISc), Bangalore, while registered as a doctoral degree student at the University of Dacca. He obtained a second Ph D degree under the supervision of B. Lythgoe, FRS, in natural product chemistry

and analytical chemistry from Cambridge University in 1949. In his professional career, Bhattacharyya was honoured with almost all of the awards in chemical sciences that our country had to offer at the time, including that of being the third recipient of the much coveted Shanti Swaroop Bhatnagar Award in 1962. In his remarkable research career, Bhattacharyya worked in the area of natural products guiding 93 doctoral students and publishing over 250 research articles. He emphasized the completion of a body of work before publication and one often saw a spate of papers on a particular aspect appearing back to back, even if with different co-workers, after he was satisfied that the work was complete. Thus *Tetrahedron* (1967, **23**) carried 11 papers from his group.



One of the areas of activities of Bhattacharyya was isolation, characterization and structure determination of the odorous constituents of essential oils and plant extracts. In this pursuit, he undertook extensive study of several essential oils and plant extracts such as vetiver oil (*Vetiveria zizanioides* L.), sandalwood oil (*Santalum album* L.), costus root oil (*Saussurea lappa*), agarwood oil (*Aquilaria agallocha* Roxb.) and plant roots extract of *Selinum vaginatum* C.B. Clarke. He was involved in the isolation and structure determination of over 100 natural products, especially terpenoids and furo- and pyrano coumarins.

His interest in the study of vetiver oil was twofold: (i) due to its pleasant odour and extensive use in perfumery and cosmetics, and (ii) perhaps more basic, was the observed/reported differences in the

chemical constituents of the 'levorotatory' North Indian variety, also known as 'Khus oil' and vetiver oils of other origins (including the cultivated 'dextrorotatory' South Indian variety). It is remarkable that while typical vetiver oil is reported to be rich in vetivones, vetispirenes and representatives of zizaene skeleton, the 'Khus' variety was found free from α - and β -vetivones and consisted mainly of the antipodal cadinanes and their oxygenated analogs. The antipodal nature of the constituents of North Indian vetiver oil was originally demonstrated by Bhattacharyya through the isolation and synthesis of laevo junenol (isolated from Moosanagar variety of 'Khus oil'). Eventually, through the occurrence of biogenetic 'missing links' khusiol and allokhusiol together with antipodal cadinanes, he was successful in establishing a possible biogenetic link between zizaenes and cadinanes.

In addition, Bhattacharyya is also widely recognized for the synthesis of various macrocyclic odoriferous substances, namely muscone, civetone, exaltone, exaltolide, ambrettolide and related products utilizing indigenous raw materials of commerce. He also synthesized constituents of sandalwood oil and most of the drugs of the visnadin group from the secondary metabolites isolated from jatamansin. The development of lithioethylene diamine as a reagent for synthesis was well received by the practising chemists of that time. He had also developed several new stationary phases for gas-liquid chromatography.

Bhattacharyya's contribution is deeply entrenched in the Chemistry Department at IIT Bombay and motivates the current generation of researchers even after 36 years of him leaving the Institute in 1977. He is fondly remembered by his students, colleagues and co-workers as a visionary bestowed with uncanny administrative abilities and unparalleled problem-solving skills and at the same time filled with compassion for one and all around him. He was a legendary orator who would captivate his audience at ease and at will. Like a true veteran captain of many voyages, he steered the young and inexperienced department looking for guidance to the shores of prosperity, where the department finds itself today.

A rare mix of all of these virtues made him a towering, larger-than-life persona who stood tall among his peers and a true representative of the class of leaders of his time.

Bhattacharyya's past students always recall the warm hospitality they received at his home, thanks to his wife (who passed away in 1999). That she was an equal partner in looking after his students' well-being is witnessed by numerous anecdotes. During the Indo-China

border conflict the nation was faced with severe resource shortage and the Government appealed to the citizens for contributions to the PM's National Defence Fund. Prof. and Mrs Bhattacharyya donated all their gold ornaments and medals in response to the appeal. The then Prime Minister, Jawaharlal Nehru personally acknowledged their generous contribution. It is obvious that this was no ordinary couple. Bhattacharyya is survived by a son and two daughters. His rich

legacy continues to inspire us at IIT Bombay.

GIRISH K. TRIVEDI
ALIASGAR Q. CONTRACTOR
PRASENJIT GHOSH*

*Department of Chemistry,
Indian Institute of Technology Bombay,
Powai,
Mumbai 400 076, India
e-mail: pghosh@chem.iitb.ac.in

CURRENT SCIENCE

Display Advertisement Rates

India		Tariff (Rupees)*					
Size	No. of insertions	Inside pages		Inside cover pages		Back cover pages	
		B&W	Colour	B&W	Colour	B&W	Colour
Full page	1	12,000	20,000	18,000	30,000	25,000	35,000
	2	21,600	36,000	32,000	54,000	45,000	63,000
	4	42,000	70,000	63,000	1,05,000	87,000	1,20,000
	6	60,000	1,00,000	90,000	1,50,000	1,25,000	1,75,000
	8	75,000	1,25,000	1,15,000	1,90,000	1,60,000	2,20,000
	10	90,000	1,50,000	1,35,000	2,25,000	1,85,000	2,60,000
	12	1,00,000	1,65,000	1,50,000	2,50,000	2,10,000	2,90,000
Half page	1	7,000	12,000	We also have provision for quarter page display advertisement: Quarter page: 4,000 per insertion (in Rupees) Note: For payments towards the advertisement charges, Cheque (local/multicity) or Demand Drafts may be drawn in favour of 'Current Science Association, Bangalore' .			
	2	12,500	22,000				
	4	23,750	42,000				
	6	33,500	60,000				
	8	42,000	75,000				
	10	50,000	90,000				
	12	55,000	1,00,000				
Other Countries		Tariff (US \$)*					
Size	No. of insertions	Inside pages		Inside cover pages		Back cover pages	
		B&W	Colour	B&W	Colour	B&W	Colour
Full page	1	300	650	450	750	600	1000
	6	1500	3000	2250	3500	3000	5000
Half page	1	200	325				
	6	1000	2000				

***25% rebate for Institutional members**

Contact us: Current Science Association, C.V. Raman Avenue, P.B. No. 8001, Bangalore 560 080 or E-mail: csc@ias.ernet.in

Last date for receiving advertising material: Ten days before the scheduled date of publication.