

B. C. Nakra (1939–2016)

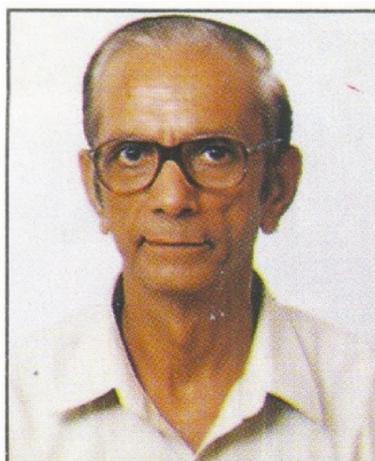
Bahadur Chand Nakra died on 12 April 2016 at Gurgaon, after a brief illness. He is survived by two sons.

Born on 31 March 1939 in Mianwali, now in Pakistan, Nakra earned his B Sc Engg (Hons.) in 1959 from the Punjab University, M Tech in 1961 from IIT Kharagpur and Ph D in 1966 from the Imperial College of Science and Technology, London, working with P. Grootenhuis on vibration control of structures and machines using viscoelastic damping. On return to India, he pursued his research in vibration engineering, especially on viscoelastic damping. Later, at IIT Delhi he worked on condition monitoring of machines and noise engineering; condition monitoring and diagnostic maintenance; system identification and dynamic design; and dynamics of hydraulic and pneumatic systems. Nakra's contribution in the area of viscoelastic damping is immense, besides other areas of vibration and condition monitoring.

Nakra joined IIT Delhi as an Assistant Professor in 1966. Here he mentored 21 Ph D students, supervised over 60 M Tech projects, authored more than 160 research papers including 96 in peer-reviewed journals, 3 books and about 70 technical reports for sponsored R&D work from leading industrial and government undertakings in power, automotive, railways, process and manufacturing sectors. His books *Theory and Applications of Automatic Control* (New Age International Publishers, 1998), and *Instrumentation, Measurement and Analysis* with K. K. Chaudhry (Tata McGraw-Hill, 1998) are popular among students and researchers.

Nakra served IIT Delhi in various capacities: Head, Instrument Design and

Development Centre (1973–75); Head, Mechanical Engineering Department (1975–78), Dean of Undergraduate Studies (1982–83), Head, Industrial Tribology, Machine Dynamics and Maintenance Engineering Centre (1983–87), Deputy Director, Faculty (1991–95) and Acting Director (1994–95). He coordinated the Indo-Norwegian programme in Industrial Tribology, Machine Dynamics and Maintenance Engineering. He also collaborated with scientists from UK, France, Holland and Japan.



He coordinated an Indo-US Symposium on Vibration and Noise Engineering. He was involved in several joint research activities with universities in UK and Japan. He served as Member of the INSA Council (1996–98) and was also its Treasurer. He served on the Editorial boards of *Sadhana*, *Proceedings of the Indian National Science Academy*, *Tribology International* and *International Journal of Applied Mathematics and Mechanics*. He was a Congress Member of

IUTAM and co-organized an IUTAM international winter school on Dynamic Design.

He was conferred with the C. V. Raman Award by the Acoustical Society of India (1995); Eminent Engineer Award (2002) by the Institution of Engineers, India; Distinguished Mechanical Engineering Educator Award by ISME (2005); and INSA-GP Chatterjee Memorial Award (2001). He was elected to the fellowship of Indian National Science Academy (1987), Indian National Academy of Engineering (1987), Indian Academy of Sciences (1995), National Academy of Sciences (India) (1995), and the Third World Academy of Sciences (2002).

Nakra was a warm person and was truly dedicated to work. Till his last days, he was working on the refinement of a book 'Vibration and Noise Engineering'. He was a man of integrity who is certainly a role model to many academicians and administrators. His demise was not only a loss to IIT Delhi or the academies he served, but also to the whole engineering community.

I acknowledge S. C. Dutta Roy, a close friend and a long time colleague of him, for giving me this opportunity to write about Nakra, and record my appreciation and admiration for this remarkable personality, and the help received from N. Tandon and T. K. Kundra who were his close associates.

SUBIR KUMAR SAHA

*Department of Mechanical Engineering,
Indian Institute of Technology Delhi,
Delhi 110 016, India
e-mail: saha@mech.iitd.ac.in*