

DR. BALDEV RAJ

(1947-2018)



Dr. Baldev Raj, Director, National Institute of Advanced Studies (NIAS), Bangalore, aged 70, passed away in the morning hours of Saturday, 06 January 2018 after a massive heart attack, while on a visit to Pune to attend a meeting. It was a very sudden and tragic end of an eminent scientist, technologist, science administrator, science policy maker, a multifaceted personality and a very humane person who has left an indelible mark not only on the development of 'Fast Breeder Reactor Technology' in India but also in the areas of nuclear materials and mechanics, non destructive testing of materials, nanoscience and technology, robotics, automation, in the field of education, science and policy research and many other multi dimensional pursuits. He had superannuated in April 2011 from the position of Director, Indira Gandhi Centre for Atomic Research (IGCAR) at Kalpakkam near Chennai after working for 41 years with Department of Atomic Energy. He was President of Research during 2011-14 at PSG group of institutions at Coimbatore. He had taken over as Director NIAS during September 2014, a little more than 3 years ago and wonderfully steered this small but multidimensional, multicultural and multifaceted centre for advanced studies in sciences, humanities and others. He was appointed Chairperson of the Board of Governors of the 'Academy of Scientific and Innovative Research' in 2017 for a period of five years by Prime Minister of India. For his invaluable contributions in the field of atomic energy and his other outstanding qualities, he was conferred 'Padma Shree' in 2007 by Government of India.

Born on 9 April 1947 in Jammu, he had his early education there itself, and completed his B.E. in Metallurgy as a Gold Medallist in 1969 from Government Engineering College, Pt. Ravi Shankar Shukla University, Raipur (Now, National Institute of Technology, Raipur). He was selected for the program of Training School of Bhabha Atomic Research Centre (BARC) in the batch of 1969-70 (13th Batch). On completion of the training, he joined 'Post Irradiation Examination Section' of Metallurgy Division (headed by Dr. V.K.Moorthy) of BARC in August 1970 to work in the areas of non-destructive testing of materials and characterization of their properties. He was deputed to Denmark in January 1973 on a program for a period of 18 months, after completion of which he returned back to BARC in June 1974.

That was the time when 'Reactor Research Centre (RRC)', later renamed as 'Indira Gandhi Centre of Atomic Research (IGCAR)', at Kalpakkam was being strengthened with induction of more number of scientists to carry out R&D in the areas of "Fast Breeder Reactor Technologies". He moved to this new research centre around August 1974 along with many other scientists. He continued to work at this research centre with many stalwarts (such as Dr. N. Sreenivasan, Dr. C. V. Sundaram, Dr. Placid Rodriguez who were directors of IGCAR) with outstanding performance throughout his career till his superannuation in April 2011, occupying various positions, achieving an honour of a 'Distinguished Scientist', and finally as its Director. He did his PhD from IISc Bangalore and was awarded DSc by Sathyabhama Deemed University Chennai.

Baldev Raj had a very humble beginning of his life. He lost his father when he was 12 and was brought up by his mother. His elder brother told me that he was very shy as a child and always concentrated on his studies. He always used to say, "Whatever I have learnt, it is all from my mother. She only taught me to be humane first before anything else. I feel that humanity is the most important quality in anybody's life". He was very polite, considerate, and soft spoken though a strong decision maker with firmness but with a touch of humaneness. Though we had met sometimes in 1971 through one older friend of mine after I completed my training school program, and continued to meet during his visits to Mumbai during 1975-90 but we came very close to each other in 1994 onwards. When I wrote the book on "Hysteresis Machines", he went through some chapters very closely with his comments. We interacted intensely on various purchase and administrative matters while I occupied the positions of Director, Purchase and Stores of the Department, and later as Controller BARC.

Dr. Baldev Raj was an editorial collaborator of the journal Science and Culture. He also contributed an article in the book "Emerging Science and Culture : Connecting People" (Ed. Prof. S. C. Roy) published on the occasion of 75 years of ISNA. After my superannuation while I settled in Mysore, and I got interested in some new fields of studies, he was the one who also encouraged me to write some articles on 'History of Science', and the areas related to 'Consciousness Studies', for the Journal "Science and Culture", the subjects which are finding my intense interest now a days. Invariably, he will reply to all my mails with his encouraging comments.

His contributions to science, technology and society are immense which may run into many pages. Apart from his about 1000 publications in peer reviewed journals, 93 books & monographs either written, edited or contributed a part, 29 patents, he addressed about 500 sessions as a plenary, keynote or an invited speaker in 30 countries of the world. Along with President of INAE during 2010-14, he was a fellow of all the four academies of sciences in India and many other academies in the world such as 'International Nuclear Energy Academy', 'World Academy of Sciences' and President of 'International Council of Academies of Engineering and Technological Sciences' from 2013 onwards among many others. For his immense contributions, he was honoured with many awards (about 100) such as 'National Metallurgist Award', 'Om Prakash Bhasin Award', 'Vasvic award', 'Life Time Achievement Award of Indian Nuclear Society', 'Distinguished Material

Scientist award' etc. He was a distinguished alumnae of Indian Institute of Sciences (IISc), Bangalore.

He always emphasised on multidisciplinary research and catalysed the institutions. He desired that there should be close synergy between science and policy research. He headed a task force set up by Ministry of defence (MoD) for strategic materials to be used for defence applications, and suggested a framework and road map for achieving the self sufficiency in these areas. He even steered a task force for the production of Rare – Earths for Defence and Civilian applications so that the country is not dependent on foreign sources. He always propagated the idea of self sufficiency in the country in all the domains of science and technology. He even gave the unique interpretation and solutions to challenges in various areas such as energy, water, health care, manufacturing sector and national strategies. His another hallmark was non-destructive evaluation using advanced signal analysis, imaging techniques and innovative sensors for evaluation of old, critical and fragile structures (in defence and civilian areas) and most importantly the culturally important monuments of the country which are our heritage to be preserved. He was a lover of arts and architecture (along with a study of history of civilization) and thought of a synthesis of all these with the studies in science and technology along with the studies in humanities, because life needs to be viewed holistically. NIAS is one such institution to fulfil such dreams and a person like him was the right one to steer it. A firm believer in the concept of 'Soul' and 'Consciousness', he was indeed a spiritualist. He nurtured large number of scientists and technologists and interacted with lot of students in various academic institutions to encourage them in their pursuits.

He became very philosophic at times. I remember, we were there together at his home in Bangalore during August 5 & 6, 2017. His wife Neeloo asked him, "Raj, you have so many of these awards, memorabilia etc., lying here which have not been seen for many years. What is supposed to be done to them?" He replied, "let us do one thing. Put them nicely in a box. Lock it and dump it in the sea". And then, he laughed. Who knew that exactly 5 months later, he will not be there to see these things at all. He nurtured same value system of humaneness in his children. Actually, he along with his wife was supposed to come to Mysore on January 20-21 to spend two days with us, and we had planned to discuss on a monograph on Homi Bhabha. He leaves behind his wife Neeloo (Aruna), sons Hemant, Kunal and their families and four grandchildren along with many relatives, hosts of friends, followers and admirers nationally and internationally. He

wrote one of the last emails to me at 1936 hrs of January 5, 2018, probably from Bangalore airport while waiting for a flight to Pune. It was in response to one of my mails to Professor D.P.Sengupta with some comments on the article on Professor J.C.Bose published in Nov-Dec issue of "Science and Culture", with a copy to Baldev Raj and to Professor S.C.Roy. I reproduce it here as such.

"Dear Prof Narendra Sharma

Indeed admirable commentary on an excellent Person, in some way unparallel for wholesome contributions and becoming lasting inspiration. Noble Prize is only one of many parameters in Science and necessarily not for being divine and exemplary human being.

With my best wishes and personal regards. baldev raj"

In untimely demise of Professor Baldev Raj, country and scientific community has lost a person of eminence, a leader of science and technology, an extraordinary human being and I personally, a great friend and a well wisher. He was truly an example of an exemplary human being to be emulated.

May his Soul rest in peace. □

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Former Controller, BARC, Trombay, Mumbai.*

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