

## Babulal Saraf (1923–2009)

Babulal Saraf grew up in Badnawar village, Madhya Pradesh, where his father was involved in a small business of trading. The ambition of the average youth in the village was to settle down and do slightly better than the earlier generation. His father had thought of handing over the business to him, for which purpose he was advised, counselled and trained.

However, young Babulal had different plans as he wanted to understand the intricacies of nature and also the complex nature of things at the deepest level. In addition, he also started taking interest in the freedom movement which was sweeping India at that time. He imbibed Gandhian values from his school days and continued till his very last; it was an interesting mix of physics and Gandhism. He wore khadi all through his life and had faith in the basic philosophy of indigenization.

Saraf started the movement of physics education in India and took the plunge after his initial stint as a scientist at the Atomic Energy Establishment (now called Bhabha Atomic Research Centre; BARC), which he joined after his return from the US. He researched in nuclear physics in the US and also worked at the Nobel Institute of Physics at Stockholm, Sweden. He was privileged to have worked with scientists like Raja Ramanna and Homi Bhabha after coming back to India. Instead of succumbing to the lure of fame and power, Saraf chose to move to the University of Rajasthan, Jaipur, to propagate science education of high quality. He strongly believed that the country could only progress if the schools and universities provided quality education and cutting-edge research programmes. Raja Ramanna supported his passion for experimentation and granted Saraf the liberty to take all the laboratory equipment and expensive materials from BARC, to set

up a research laboratory at the University of Rajasthan.

The research laboratory started conducting experiments in positron annihilation – the only of its kind to have been set up in an Indian university. Saraf also attracted a number of bright students from all over the country. Although Saraf had a high level of expertise in nuclear physics, his first love remained science education and he devoted himself for the development of laboratory equipment for quality science education in India.



His work on laboratory equipment was recognized globally. Abdus Salaam, International Centre for Theoretical of Physics at Trieste, Italy, recognized the inherent value of these equipment and invited Saraf many times for demonstration and discussion. A. Gunier from France and many top physicists from the US, including John Bardeen – the father of transistors and superconductivity – visited and appreciated Saraf's contributions to physics education. He was invited by the Tanzanian President, as an advisor for science education in Tanzania. Some of the equipment that were developed under his

leadership are still being used in various IITs and national universities.

At the base of all of Saraf's work was an underlying faith that India must develop and grow indigenous technology. His grasp of technology was most outstanding. Saraf built up an advanced workshop and most of the equipment which he developed were fabricated in the workshop. His work was recognized by the UGC and Saraf was provided liberal grants. It was his effort that took some of the high-quality equipment to both the IITs and also to small village schools. Saraf always told his students that one should do what one loves the most and he practised what he preached. His idea of recognition and source of passion was also unique. It was not about winning awards and recognition for himself; the purpose was to pass on the baton of knowledge to the next generation, so that they can take it beyond to new horizons.

Babulal Saraf died on 1 March 2009, but his ideas and concepts will live through his students and the legacy which he has left behind. Saraf came from a small village with a lot of questions, discovered a few answers and took them back to the villages. Indian science can only grow if we provide quality education for universities and schools – a cause for which Saraf devoted his entire life.

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