

# OBITUARY



**Prof. Dharmajit Guptasarma  
(1932-2018)**

Prof. Dharmajit Guptasarma (also spelt Gupta Sarma) was born on July 16, 1932, in Serajgunj, to Mr. Jagadish Chandra Gupta Sarma, (Bengal Judicial Services) and Mrinal Bala Devi, a homemaker. Dharmajit was the fourth of eight siblings. He spent his childhood in several cities and towns of undivided Bengal, travelling with the family to several different locations to which his father's court got posted. Later, Dharmajit and his older brother lived with his paternal grandfather for a few years, in Senhati, also in undivided Bengal, attending a village school and learning to swim in lakes and rivers, and climb trees.

Dharmajit returned to Calcutta in 1946, and passed the matriculation examination, with distinction, at the age of fourteen. Two years later, in 1948, he passed the intermediate examination with a state rank. In 1950, he took the Bachelors' Honours examination of Calcutta University, and obtained the University Gold Medal in Physics. At the age of nearly twenty, in the spring of 1952, he took the Masters' examination of Calcutta University in the then new subject of Radio Physics, which happened to be the first course in electronics in the country, from the University's Science College in Rajabazar, Calcutta, where he was once again the University Gold Medalist.

Dharmajit was invited to become a lecturer at the Science College, Calcutta University, in 1952. In 1956, he left the Science College to take up a job as a junior geophysicist at the Geological Survey of India (GSI). Professor Guptasarma pioneered the development of geophysical exploration instruments in India at GSI, and then at the National Geophysical Research Institute (NGRI) where he joined in 1965 as Assistant-Director. He designed many instruments for land, airborne and ship-borne operations that were extensively used. With his team he discovered a diamond-rich kimberlite in Wajrakarur, Andhra Pradesh. He carried out theoretical and physical scale modeling to interpret geophysical measurements; invented faster, more accurate digital numerical filter operators; showed that low frequency electrical resistivity modeling in electrolytic tanks goes wrong due to surface polarization; that a published 'theorem' using the concept of contribution to the electric potential at a point by the electric fields around was wrong; that the transient response of a coincident-loop EM system cannot change its sign except in the presence of electrochemical polarizability. He discovered a novel method for computation of the magnetic field due to an arbitrary polyhedral object; this was then applied for computation of the gravity field due to any

polyhedral object. He discovered a relationship between the frequency spectra of true and apparent polarizability of a buried target.

He showed the need, and importance, of Very Long Baseline Interferometry (VLBI) measurements of the relative motion of the Indian tectonic Plate with respect to the Eurasian tectonic plate for proper understanding of the nature of ongoing continent-continent convergence. He computed the sensitivity of missile launch systems to the gravity field of the earth structures.

For quite a few years, he remained an adjunct professor at the Indian Institute of Technology, Kharagpur, occasionally teaching and delivering lectures at the institute, while serving at NGRI.

Prof Guptasarma's scientific work was recognized through several awards/distinctions including, Father La Font Gold Medal (1950), Ganga Prasad Gold Medal (1952), Tripundeshwar Mitra Gold Medal (1952), Calcutta University Gold medal for MSc (1952), Krishnan Gold Medal (1972), UGC National Lecturer (1985-86), Decennial Award of IGU (1986), National Mineral Award (1986-87), Elected to Fellowship of INSA (1987), Elected Fellow of IASc, Bangalore (1987), Adjunct Professor in IIT, Kharagpur (1989), Council Member of INSA (1991-1993), Indian Geophysical Union Dr. Hari Narain Lifetime Achievement Award (2017) etc.

Dharmajit retired after helming NGRI, Hyderabad, as its Director from early-1989 to mid-1992. He served for a further five years as an emeritus scientist, until 1997, and continued to work without a formal position and publish occasionally until he turned 70, in 2002, whereupon he retired completely from active scientific research and turned his interests elsewhere. Having always been involved in the use of computers, and computational approaches, he used this decade after his retirement to catch up with the entire microcomputer and desktop revolution, teaching himself all the new computer programming languages and about hardware aspects, and having fun writing computer games for his grandchildren and some software to help in the work of his two sons and daughters-in-law, all scientists. During his post-retirement years, he could program computers at what is sometimes loosely referred to as the 'metal level', and his friends often teased him with the name, Vishwakarma, because of his uncanny talent for making devices, and also for detecting faults and repairing them. After leaving active science, he would also spend a lot of time on the internet, studying up many different subjects. He also spent time writing up his views and experiences regarding life and science in English and Bengali, for the consumption of friends and family.

He passed away very suddenly, and unanticipatedly, during the afternoon of July 7, 2018, having recovered from a mild chest infection, for no obvious reason, nine days short of July 16, when he would have turned 86, without any complaint or notice. His passing away was very peaceful, in a home set up by his son and daughter-in-law, very close to their own home in Chandigarh/Mohali, where Dharmajit and his wife had been staying for the past several years, since 2013. He remained contented and positive about everything until the end.

Dharmajit is survived by his wife, Ishita Guptasarma, a graduate in Bengali literature, who is 75, and by two sons, Prasenjit, and Purnananda, and their families, as well as the family of his elder brother with whom he was very close (his elder brother was married to his wife's older sister), and various nephews and nieces on his or his wife's sides of the family, including his elder sister's daughter who lives in Kolkata. While Ishita and Dharmajit had a conventional marriage, with divided responsibilities, they also had the opportunity to work together in the translation of several spiritual texts from English into Bengali, in his post-retirement years. Interestingly, both of their sons are married to Punjabis. Together with the fact that Dharmajit took initiation from a preceptor of Punjabi origin, and spent the last few years of his life in Punjab, eventually dying in Punjab, with his ashes

also scattered in a canal of the Sutlej, his life is suggestive of some very intriguing Bengali-Punjabi connections.

With a very down to earth personality, he was also a born teacher and delighted in sharing his knowledge and challenging the minds of younger colleagues and students with perplexing questions and stimulating discussions on all things under the sun. Colleagues and staff of the National Geophysical Research Institute warmly remember him for his affable nature and cordial interactions. His contributions at the initial stages of CSIR-NGRI shall always be remembered.

CSIR-NGRI, his family members and a large number of friends, well-wishers & students deeply mourn the loss of Prof. Dharmajit Guptasarma, an iconic figure of Geophysics in the country and extend heartfelt condolences to the bereaved family. May his soul rest in peace.

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## Announcement

### INSTITUTION OF GEOSCIENTISTS, ODISHA

A group of retired geoscientists of Odisha from Geological Survey of India (GSI) have joined together in Bhubaneswar on 3<sup>rd</sup> October 2015 to play a second innings for the trophy of societal good. Gradually over a period of continuous deliberation and meetings there evolved the **Institution of Geoscientists**, a non-profit charitable Institution duly registered under the Societies Registration Act 1860. Their domain knowledge covers almost all streams of geoscience, from Exploration, Petrology to Marine Geology, Palaeontology and Engineering Geology. The objectives and purposes are to (i) serve as the centre of knowledge on Earth sciences; (ii) to pursue scientific discussion and dissemination of knowledge on Earth sciences in respect of contemporary environmental, social and natural hazard issues; (iii) to proffer suggestions and advice to government organizations on mineral development and mineral policies; (iv) to organise scientific deliberations and seminars with an aim to updating knowledge/development in different fields of Geosciences; and (v) to contribute to progress of the Institution.

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