



Guest Editor's Note

When Professor Suri Bhagavantam passed away in February 1989, there was a feeling of great loss in DRDO and there was a move to do something immediately to honour his memory. As a small token of DRDO's gratitude to one of its prime architects, it was decided to bring out this special issue of the Defence Science Journal in his memory. As a student and long time associate of Prof. Bhagavantam, I was given the honour and privilege of being the Guest Editor for this issue.

The issue is divided into two parts. The first one includes a biographical note and reminiscences by some of Prof. Bhagavantam's close associates. The major part, however, is devoted to a number of review articles by invited authors. All the authors have been close associates of Prof. Bhagavantam at one or other of the institutions where he worked. Some of the subjects chosen are either those to which he had himself contributed personally or those whose study he had fostered. The others are of current and future interest.

Photoelasticity is one of the subjects which Prof. Bhagavantam enriched by his own theoretical and experimental work. Not only his contributions but the later work in this area is presented in the paper of Dr. D.S. Ranganath and Prof. S. Ramaseshan.

As Scientific Adviser to the Defence Minister, Prof. Bhagavantam realised very early the importance of nuclear, chemical and biological warfare in the future and the need for India to be able to assess developments round the world in these areas and to provide itself protective measures against such attacks. He was on the UN Committee set up by the Secretary General to go into all aspects of chemical and biological warfare. While he ensured that detection and identification of nuclear tests is carried out by other organisations, Dr. Bhagavantam planned facilities for detection, identification of, and protection from, chemical and biological agents within DRDO.

Dr. P.K. Ramachandran and Dr. N. Raja were associated with Dr. Bhagavantam in this area and they have now contributed a paper on problems of verification of chemical weapons for this issue.

Microwave research in India including generation, detection and utilisation was not very advanced at the time Dr. Bhagavantam assumed charge of DRDO. He foresaw the need to strengthen this work both from the military and civilian point of view. Prof. S.K. Chatterjee and Prof. (Mrs) Rajeswari Chatterjee were colleagues of Dr. Bhagavantam at the Indian Institute of Science and had opportunities to discuss this subject with him many times. They have authored the review paper on Some Recent Advances in Microwaves.

One of the subjects in which Prof. Bhagavantam took very keen interest and fostered it personally during his tenure as head of DRDO was cryptology and cryptography. Dr. I.J. Kumar was associated with this work since then. He and Ms. Meena Kumari have reviewed in their paper some of the New Mathematical Tools in Cryptology.

Prof. A.K. Rao was a close associate of Prof. Bhagavantam while the latter was at IISc and this association continued since then. Prof. Bhagavantam had an abiding interest in nondestructive evaluation (NDE) of materials especially as they approached their fatigue limits. The article on Acoustic Emission and Signal Analysis presents the recent developments in this area in relation to NDE.

Dr. R. Hradaynath and Dr. E. Bhagiratharao in DRDO came under the influence of Prof. Bhagavantam and continued to be in touch with him after his retirement also. They have contributed articles which deal with current and future developments in the fields of Integrated Optics and Information Fusion. Prof. P. Rama Rao was at IISc during Prof. Bhagavantam's tenure as Director and they developed a long standing association. Prof. Rama Rao has written on the Less Known Effects of Environment and Specimen Geometry on Creep Fracture of Nickel Alloys.

All these review articles are of a high order and a fitting tribute to the memory of Prof. Bhagavantam. These were prepared with great care and at very short notice. I would like to thank all the authors including those who contributed reminiscences for their ready response to my request to participate in this effort.

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