NPL MERIT AWARDS—1976

Design Development and Fabrication of Infrared Spectrophotometer and Detectors

A team of scientists under the leadership of Dr. S.P. Varma, and assisted by Dr. B.B. Lal, designed and fabricated a far infrared spectrophotometer for the spectral region 15 to 300 μm and a high resolution, high-sensitivity 1-3 μm spectrometer (*See Page 29*). With the commissioning of these instruments, the Laboratory got equipped to undertake infrared studies in the range 1-300 μm for characterization of materials and study of lattice vibrations etc.

The 1-3 μm spectrometer uses the pyroelectric TGS infrared detector developed by Dr. M.M. Pradhan and Shri Rakesh Kumar Garg. They set up facilities not only for growing of single crystals of TGS (*See Page 30*), but also for studying pyroelectric properties as well as for fabrication of infrared detectors for remote sensing devices.

In recognition of this significant work, the group was awarded the NPL Merit Award—1976, and a cash prize of Rs. 1000.

Satellite Radio Beacon Technique

The team of scientists under the leadership of Dr. Y.V. Somayajulu, assisted by Dr. Tuhi Ram Tyagi and Shri A.B. Ghosh, and consisting of Sarvashri P.N. Vijaya Kumar, Lakha Singh, J.K. Gupta and S.R. Bakshi, was given the NPL Merit Award—1976, and a cash prize of Rs. 1000 for their successful and unambiguous identification of tropospheric effects on VHF radiowave propagation, using the satellite radio beacon technique.

This group had pioneered in India, as early as 1962, satellite radio beacon measurements for ionospheric study using the Russian satellite COSMOS V, and had since then being continuing these measurements which had made significant contributions to space science, and had helped in evaluating and correcting eorrors due to tropospheric and ionospheric refraction in satellite and radar tracking.

That the troposphere could also be monitored by radio beacons had been suggested in the past, but no clear evidence was available. This team of scientists was the first to unambiguously identify this effect during the tropospheric event of December 1974 (*See Page 68*) and subsequently,

using the radio beacon transmission of the satellite INTASAT.

Devolpment of Carbon Granules for Telephone Communication Systems

A team of scientists consisting of Dr. P.T. John and Shri K.K. Datta, under the guidance of Dr. G.C. Jain, developed a process for the processing of carbon granules which are vital for telephone communication systems. The team had developed techniques for processing of raw materials for making these granules.

With precise critical parameteres, these scientists had been successful in converting the cheap raw material into a sophisticated product having negligible porosity, and optimum pyroelectric deposition on a partially graphitized interior (*See Page 58*). The carbon granules produced by this team were sensitive to the slightest change of sound pressure, and conformed to international specifications having extremely close tolerances.

For its innovative skill, persistent efforts, and basic understanding of the physics and technology of carbon, this team had thus been able to develop this sophisticated technology in the country, and in recognition of this, it was presented the NPL Merit Award—1976, and a cash prize of Rs. 1000.

OTHER HONOURS AND AWARDS

1. Dr. G.C. Jain was elected fellow of the Indian National Science Academy.
2. Dr. B.M. Reddy was selected for Shri Hari Om Ashram Prerit Dr. Vikram Sarabhai Research Award (1975). The award was in recognition of Dr. Reddy's achievements in the field of planetary and space sciences, and carried a cash prize of Rs. 4000/- and a gold medal. The award was presented at an investiture ceremony held in Ahmedabad on 12 August 1976.