M.S.46. SIVADAS, T.K.–Development of a portable Composite Equipment for Fishery Hydrographic Investigations–1984–Dr. C.T. Samuel.

This thesis reports on the details of the works done to develop a complete system for acquisition of the important marine environmental parameters namely, current, current direction, salinity, temperature and depth. It encompasses transducers, signal conditioners display arrangements and remote controlled multiplexer which constitue the system. The various associated instrumentation and environmental requisites and problems have been discussed and solved to considerable extend. The design and development features of this composite system includes an integrated approach in order to make the final equipment to be simple, inexpensive and easy for operation from small and large boats.

Out of the 5 sensors, that of current salinity and depth are quite noval types with specific advantages. The environmental effects have been eliminated to the required extend.

The instrumentation problem associated with extension of cable has been solved rendering the system flexible for alteration of cable length for different requirements.

The reliability of the various sensors, signal conditioners and multiplexers developed for the equipment and other associated methods for field checking, compensation for environmental effects etc. have been further established with the successful development of several descrete instruments and large automatic data acquisition systems. Many such instruments based on the same technology

are under operation in different conditions including the most hostile and hazardous environment on the floating dynamically stabilized oil rig SEDCO 445 operated in Bay of Bengal for oil and Natural Gas Commission.

The technology developed is expected to go a far way in our marine exploratory programmes providing useful data for various activities connected with the exploration and exploitations of the living and non-living resources of the ocean, and other engineering constructions.