GRATITUDE

It is not only sincere duty but a great pleasure to express my deep sense of gratitude towards all those who have helped me in various ways in overcoming all the difficulties encountered during the course of this work.

I shall remain obliged to Prof. S.K. David for his most competent and forseeing guidance, coupled with incessant encouragement during the research work. His innovative ideas and versatility in all fields lead to collaboration between CEERI, Pilani and University of Poona, to carry out this project.

Mr. N.K.L. Raja in the SEM-VAX Group is an ingenious scientist of CEERI. He took up the idea with equal enthusiasm and provided me with all the facilities required for the completion of this work. I frequently had valuable and thought provoking discussions with him. It was my privilege to work under his able guidance. Encomiums are due to both my guides.

I am grateful to Dr. G.N. Acharya, Director CEERI, and Dr. W.S. Khokle, Head, SDA division, for constant support and encouragement.

It was a pleasant experience to work with scientists in SEM-VAX group. I must mention the invaluable help by Mr. K.J. Rangra throughout this project. His industrious efforts definitely have a good contribution for successful completion of this project. I am also thankful to Mr. Mulayum Singh for the kind help offered from time to time. Dr. N.R. Rajopadhye should be given special thanks for many a critical suggestions and valuable discussions.

Time and again I have taken help of many scientists in CEERI, esp. M/S. V.L. Patil, R.S. Shekhavat, Raj Singh, Dr. V.K. Dwivedi, Dr. Chandrashekar and K.V.S.H. Rao, for which I am indebted to them. I thank Mr. S. Venkatraman from CDOT, Bangalore (who was on deputation to CEERI) for helping in developing the decapsulation method. The technical assistance offered by M/S R. Sharma, O.P. Kalara, Mohan Singh, N. Lal, A Mistri is acknowledged
with thanks.

I owe a lot to all members of Maharashtra Mandal, CEERI, Pilani for their kindness, good nature and best wishes offered to me during my one year stay at Pilani. It was indeed a great pleasure to be with them.

After completion of the project at CEERI, the difficult task of writing the thesis remained. Prof. David handed over the responsibility of checking thesis to Dr. Miss S.A. Gangal. She willingly accepted the job and took great pains for giving concrete shape to the work. The total credit of timely completion of thesis goes to her.

I must take this opportunity to thank Mr. Naresh Lala, Green Studio, Pune, for furnishing his expertise in photography and punctuality, Mrs. Khan and Mr. L.P. Kadam, Dept. of Physics, Pune, for prompt and skillful service of typing and printing and Mr. B.B. Pawar, Dept. Chemistry, Pune for neat and clean drawing of figures, which are instrumental in making of the thesis. I thank Mrs. Mangala Chinchani after for the beautiful artwork of the dedication page.

I shall remain thankful to all the teachers, technical staff and my colleagues from the Dept. of Electronic Science for good cooperation and best wishes.

The untiring help offered by my sister Vanashree, and my judicious friends Vineeta Arole and Sushila Kaulgekar is indeed incomparable for which I am grateful to them.

I am thankful to DAE and CSIR for financial support.

In addition to those mentioned above, there are many friends behind the curtains, who have helped me in various ways. I take this opportunity of expressing my gratitude towards them.

(V.G. KARKARE)