ACKNOWLEDGEMENTS

It gives the author the greatest pleasure to record here, his respectful regards and sincere thanks to Professor Putcha Venkateswarlu, Senior Professor and Head of the Department of Physics, Indian Institute of Technology, Kanpur, India and formerly of the Department of Physics, Aligarh Muslim University, India, for guidance in the experimental work and invaluable discussions later. The author is grateful to Professor Rais Ahmed, Head of the Department of Physics, Aligarh Muslim University, for his kind interest in the work, useful discussions and help given for the submission of this thesis. He is sincerely thankful to the Council of Scientific and Industrial Research, India, for the award of a Fellowship in a Research scheme sanctioned to Prof. Venkateswarlu, at Aligarh. Sincere thanks are also due to the University Grants Commission, India, for financial assistance towards the establishment of the Microwave and Radio frequency Spectroscopy Laboratories at Aligarh.

The author expresses his thanks and indebtedness to many of his colleagues for varied kind of help rendered by them, during his stay at Aligarh, especially to Drs. B.D.N. Rao, D. Ramachandra Rao, K.V.L.N. Sastry, T.S. Jaseja, Y.V. Rao, G. Aruldas and K.W. Gopinath. Thanks are also
due to Mr. Niamatullah, Fine Mechanic and Mr. Ajit Singh and Mr. Md. Siddique, Glass blowers, for their help.

The author wishes to express his thanks to the authorities of the Indian Institute of Technology, Bombay, for generously allowing him the necessary time to complete the experimental work before taking up a position there.

Lastly, but not in the least, the author wishes to express his gratitude to many of his relatives and thanks to his wife for her encouragement and tireless assistance.

( A. Sundara Rajan )