-:: A C K N O W L E D G E M E N T S ::-

I am indebted and wish to express my sincere thanks to my Research Guide Dr.M.K.Soudagar, Department of Physics, Shivaji University, Kolhapur for proposing the topic of the Dissertation work and for his continual guidance throughout the period of study and research.

I am grateful to **Prof. R.N.PATIL**, Head of the Department of Physics, for his invaluable encouragement and also for providing me all the facilities including WIPRO PC available in the Department of Physics, Shivaji University, Kolhapur. My sincere thanks are also due to the University authorities for extending me the necessary facilities to carryout the work successfully.

I am thankful to the **U.G.C.** for the award of Teacher Fellowship. I am very much grateful to the Board of Management of **N.D.M.V.P.** Samaj Nashik and Principal. **B.K.Dongare, K.K.W.College, Pimpalgaon(B),** Dist. Nashik for granting me the necessary study leave without which this work would not have been possible.

I extend my sincere thanks to Dr. S.H.Behere, Marathwada University, Aurangabad, for supplying the RKRV data for Br, molecule.

I express my sincere thanks to **Dr. S.R.Sawant** for helping me in preparing the computer programs for the calculation of numerical data.

ii

I am also thankful to Prof. J.K.Zope, for his invaluable suggestions

regarding the studies of M. Phil course and Dr. M.B. Dongare for his keen

interest in the present work.

I would like to extend my thanks to the Teaching and Non-teaching

staff of the Department of Physics, especially Shri. S.V. Sankpal and

Shri. M.S. Patil for their kind co-operation.

I am thankful to the members of my family for creating an

environment which hedepoine to stay at Kolhapur for the completion of

the course.

MY thanks are due to the Typist Mr. CHANDRAKANT MORE, for

his co-operation in typing this dissertation.

PLACE: KOLHAPUR.

DATE: 7-9-1990

RESEARCH STUDENT

(V.M.PATIL)