

PREFACE

The present thesis entitled "Semiconductive and Spectroscopic Investigations of Some Nitroaromatic Compounds" is in fulfilment of the requirements for the degree of Doctor of Philosophy (Science) of the North Bengal University, Rajaramchunpur, Darjeeling (W.B.). It embodies results of investigation on the semiconductive and spectroscopic properties of some nitro-arene compounds. The most of the work was carried-out in the Physics department of North Bengal University, Darjeeling and in the Optics department of Indian Association for the Cultivation of Science, Jadavpur.

The thesis has two parts and an appendix. There are four chapters in each part. First chapter of each part contains a general introduction with a brief review on the relevant parts of the existing theories.

The first part deals with the semiconductive properties of some nitroaromatics e.g. dark conductivity, the effect of adsorption of vapours on the electrical conductivity and on semiconduction activation energy, adsorption and desorption processes and the Compensation effect. The experimental techniques used for the semiconductive investigations are presented in chapter 2 while the subsequent chapters contain the details of the experimental results together with the discussions.

Spectroscopic data are collected by UV - Visible spectrophoto -

and fluorimeters. The results and discussions of the electronic spectral investigations of some nitroaromatic compounds like 9-nitroanthracene, 2-nitrofluorene and 1,4-dinitronaphthalene are presented in the second, third and fourth chapters of part B.

Most of the results are published in the form of papers in various scientific journals. Some are awaiting publication too. A list of publications and available reprints are included in the Appendix.

The author wished to express his deep sense of gratitude to Dr. T. N. Misra, thesis supervisor, for his continuous guidance and untiring supervision throughout the course of the present investigation. The author feels much indebted to Prof. G. S. Rastha of I.A.C.S., Prof. G. N. Sen of W.B.U. and Prof. R. K. Mishra of AIIMS for providing with the laboratory facilities in their departments. Author is extremely thankful to Dr. B. Mallik, Sr. Alpana Ghosh and Dr. K. G. Mandal, with whom he has publications also, for their assistance, cooperation and many helpful suggestions. Thanks are due to the authorities of the Indian Association for the Cultivation of Science, Jadavpur and North Bengal University, Darjeeling for research facilities and also to the C.C.I.R. and U.C.C. for the research fellowships. Author expresses his gratefulness to the Government of Madhya Pradesh too for the sanction of study leave during the tenure of Teacher Fellowship. He sincerely records his thanks to all

those who helped and encouraged him, directly or indirectly, during the progress of the work and also to Mr. Asim Dey and Surendra Choudhuri for the help with the typing of papers in connection with the research work. For the competent technical assistance, author is thankful to Mr. S. K. Sarker also. Finally, it gives him a great pleasure in acknowledging the receipt of under standing encouragement from his patient family during the considerable length of time devoted for the research on the subject.



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January 1981.