

## Acknowledgements

*I express my deep sense of gratitude to Prof. Ranjit Paul, Dept. of Physics, North Bengal University, who not only introduced me to the mysterious and fascinating world of Liquid Crystals but also supervised me whole-heartedly at every stage of my research work. I take this opportunity to express my gratefulness to Dr. (Mrs.) Sukla Paul, Reader, Dept. of Physics, N. B. U., for her active guidance and untiring support to complete my work.*

*I must express my gratitude to Prof. R. Dabrowsky, Military Institute of Technology, Warsaw, Poland, for donating Liquid Crystal samples used in my research work. My thanks are also due to E. Merck, U. K. and Hoffmann-La Roche Co., Basel, Switzerland for donating Liquid Crystal samples used in my research work.*

*I would like to extend my gratefulness to Mr. Sajal Kr. Sarkar, Senior Technical Assistant, Dept. of Physics, N. B. U. for his constant co-operation for designing and repairing the instruments used in my research. Mr. P. Tamang, Senior Technical Assistant, Dept. of Physics, N. B. U. is thankfully acknowledged for his spontaneous help during my experiments.*

*I am also thankful to Dr. P. Mandal, Dr. M. K. Das, Dr. B. Adhikari, Dr. A. Nath, Mr. P. Sarkar and Miss. S. Ghosh for their co-operation during my experiments. I would like to thank all the staffs of the University Science and Instrumentation Centre for availing me the various workshop facilities. I am really thankful to Mr. S. K. Giri, for his constant help when my experiment was in progress and also during the preparation of this manuscript.*

*I wish to convey my gratefulness to the Head of the Dept. of Physics, N. B. U. for allowing me to avail the laboratory facilities to persue my research work. I am also indebted to the Principal, St. Joseph's College and the Jesuit Community, Darjeeling, for sanctioning me the leave to complete my research work.*

*I wish to convey my sincere thanks to the University Grant Commission, New Delhi, for providing me financial assistance under F.I.P. scheme to carry out research work at North Bengal University for one-year.*

*I shall fail in my duty if I do not express my gratefulness to Mr. D. Lama, Senior Lecturer, Dept. of Botany, St. Joseph's College Darjeeling, for his co-operation at every stage of preparation of this thesis.*

*I am indebted to all whose name have not been mentioned but have substantial contributions in my research work without their realisation.*

*A word for my beloved Mother - "I am here today because of her."*

*Finally it is more than a pleasure once more to acknowledge my indebtedness to my loving wife, sons, daughter and other members of my families for their unfailing encouragement and loving co-operation in my work. I thank them for their forbearance towards my frequent spells of late-comings and outgoing when my research work was in progress.*

*June 1998.*

*Navin Kr. Pradhan*

*( Navin Kumar Pradhan)*

*Senior Lecturer in Physics,*

*St. Joseph's College,*

*Darjeeling - 734 104.*