Preface

In modern age science and technology has aided in accelerating the quantum of over extraction rather exploitation of the natural resources which has imposed a serious threat to life in the biosphere. Industrialization, and anthropogenic activity, a symbol of progress is a prominent cause of pollution. The pollutants discharged through the effluent ultimately find their way into the water bodies, degrading and deteriorating the environmental quality. Small scale battery industries, automobile servicing stations and the small scale Banarasi saree dyeing industries were found to be the prominent source of pollution of river Varuna in Varanasi. This leads to severe pollution problems in the river leading to degradation in the water quality, water sediment quality and also to the biodiversity.

Present investigation deals with the monitoring of the property of water, water sediment and macrophytic quality in the river fortnightly for one year. Chemical and biological treatment practices to control the water pollution were conducted.

The thesis embodies results of investigation carried out on above aspects from April 2001 to April 2002. The thesis has been divided into nine chapters. Chapter I deals with introductory part of the thesis quoting reference of previous works. Chapter II contains sources of pollution in river Varuna and methodology of Varanasi, description of the study sites and details thereof. Chapter III contains various sampling and analytical methods for physico-chemical analysis of water and water sediments; heavy metal analysis in water, biological analysis etc. In chapter IV pysico-chemical properties and heavy metal analysis of river water at the study
sites are discussed. Chapter V embodies the properties of water sediments at the study sites in river Varuna. Biological properties of selected study sites in the river have been discussed in Chapter VI. In Chapter VII the laboratory experiments conducted for the control of water pollution by chemical and biological methods are given. Chapter VIII deals with the general discussion. Chapter IX comprises the summary and conclusions of the entire work along with recommendations. References and appendix are given in the end.

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