PREFACE

Soil has sometimes been described as "matter in the wrong place". Thus, textile surface is wrong place for dust particles, fatty compounds and pigments, all of which form soil.

The usual way of removing soil from garments is laundering. However, soil is not removed completely and it gets accumulated on garments through repeated wear and wash cycles. Most of the efforts in improving soil removal have been directed towards the development of better cleaning agents, methods and machines. A newer approach is in the building-up of anti-soiling (during wear) and soil-release (during laundering) characteristics on fabric surface. This would eliminate harsher laundering conditions and would confer longer useful life to garments.

Although soiling and soil release of garments are considerably important problems, especially in warm-climate countries like India, adequate understanding of these processes is lacking. Therefore, the first essential requirement is to acquire knowledge of operative mechanisms of soiling and soil removal. Systematic studies on physicochemical interactions of soils and textiles and of soiled textiles and washing media would reveal useful information.

vi
In this thesis, the results of investigations made are presented in six chapters. The introductory Chapter I deals with a general review concerning major variables affecting textile soiling and soil removal. Chapter II describes materials employed in the studies and methods for soiling, soil removal, and soil estimation. Chapter III illustrates various techniques for soiling and soil assessment. Comparative studies made on selected methods revealed appropriate methods and their standardization for specific soiling conditions. In Chapter IV, physicochemical interactions of various soils and crosslinked cotton poplin have been reported and mechanisms of soiling have been explained. In Chapter V, different parameters of detergency and of detergency with soiling have been interrelated and mechanisms of soil removal have been discussed. Chapter VI summarises important aspects of the investigations. Conclusions from the investigations are also presented in this Chapter.

These investigations aim to obtain meaningful and overall picture of the problem on the basis of real and correct information.