**PREFACE**

Isora is a lignocellulosic fibre separated from the bark of Helicteres isora plant. It is an effective reinforcement material for natural rubber. The aim of this investigation is to study the effectiveness of isora fibre as reinforcement material in short and long forms, for unsaturated polyester and epoxy resins.

A review on the recent developments on natural fibres and natural fibre reinforced composites is given in Chapter 1. The materials and various experimental techniques used in the investigation are briefly discussed in Chapter 2. Studies on the optimization of fibre length and fibre loading of randomly oriented isora-polyester composite are described in Chapter 3. The salient features of the alkali treatment of short isora fibre on the properties of randomly oriented isora-polyester composite are outlined in Chapter 4. The effect of surface modification of the hydrophilic isora fibre by different chemical treatments on the properties of randomly oriented isora-polyester composite is outlined in Chapter 5. The properties of oriented long isora fibre reinforced polyester composites are presented in Chapter 6. The properties of oriented and randomly oriented isora fibre reinforced epoxy composites with special reference to the effect of fibre loading are reported in Chapter 7. The dynamic mechanical properties of the oriented and randomly oriented isora-polyester and isora-epoxy composites are presented in Chapter 8. In Chapter 9 the water absorption kinetics of oriented and randomly oriented isora-polyester composites and oriented isora-epoxy composites are given. The effect of hot air oven aging on the tensile and flexural properties of oriented isora-polyester and isora-epoxy composites are also reported in this chapter. Finally the thesis concludes by giving the summary of the results obtained in the present work and an outline of the future prospects in this topic.