

Preface

Lubricants serve as an antifriction medium and lessen wear on the parts that come into contact with one another when machine parts move. Petroleum-based reserves are running out worldwide, which might lead to price increases and raise concerns about environmental damage. Biolubricants are an alternative option to mineral oils as they are biodegradable and have natural technical qualities. The suitability of feedstocks has constraints in terms of appropriateness because of contemporary issues such as their role in the human food chain and the environmental harm that results from using available cultivation land. Biolubricants, feedstocks, catalysts, and nanotechnology are comprehensive, interdisciplinary, and timely solutions to this subject of concern. Chapter 1 discusses eco-friendly routes for producing biolubricants. Chapter 2 suggests vegetable oils as suitable feedstocks for the production of biolubricants with the introduction of catalysts. Chapter 3 reviews the opening of castor oil-based biolubricants and their applications. Chapter 4 introduces biodegradable biolubricants and submitted their appropriate applications. Chapter 5 shows the suitability of nonedible vegetable feedstocks for developing biolubricants. Chapter 6 describes the alternative fuels and their usage as biolubricant applications. Chapter 7 discusses the usage of activated biochar and its environmental and agricultural applications. Chapter 8 focuses on solar-based phase change material applications related to environmental usage. Chapter 9 reviews the application of biomass, municipal waste, and agriculture waste for the production of biolubricants. Chapter 10 focuses on the proper feedstocks for the generation of biolubricants and their challenges in the future. Chapter 11 presents a life cycle analysis and imparts knowledge related to their degradability. Chapter 12 discusses the problems associated with the production of biolubricants and how they can be resolved by implementing nanotechnology in this field.

