

Preface

This special edition presents a multidisciplinary collection of research addressing key challenges in materials science, environmental engineering, mechanical modelling, and intelligent systems for mechatronics.

Chapter 1: Composite Materials focuses on the characterisation and performance of composites. The articles emphasise the thermal stability of natural fibres-reinforced polymer composites and the catalytic activity of clay-carbon nanodots composite for functionalized applications across various engineering sectors.

Chapter 2: Materials for Dyeing and Dye Degradation Processes presents advances in materials and technologies developed for textile dyeing and the purification of dye wastewater. Topics include the analysis of the thermodynamic behaviour of Procion M dye and the investigation of various materials for photocatalytic dye degradation in sewage.

Chapter 3: Modelling of Machines and Machine Parts explores analytical and computational approaches for describing the behaviour of some mechanical systems and machine components. Emphasis is placed on simulation techniques, performance prediction, and structure optimisation.

Chapter 4: Mechatronics addresses the integration of mechanical, electronic, and control systems in modern engineering applications. Articles highlight design solutions in UAVs for video surveillance and monitoring, as well as solar tracking in renewable energy production, among other applications.

The special edition is intended to serve as a valuable reference for researchers, engineers, and students whose activity involves interdisciplinary engineering solutions.