

[← Back](#)

Chapter 5

Tribological Properties of the Natural Fiber-Reinforced Vinyl Ester Composites

Krushna Gouda, Muthukumar Chandrasekar, Vellaichamy Parthasarathy, Senthilkumar Krishnasamy, Senthil Muthu Kumar Thiagamani

Book Editor(s): Chandrasekar Muthukumar, Senthilkumar Krishnasamy, Senthil Muthu Kumar Thiagamani, Ganesan Chinnachamy

First published: 08 September 2023

<https://doi.org/10.1002/9783527838080.ch5>

Summary

The reinforcing effect of various natural fibers (NFs) on the tribological properties of thermosetting polymers is discussed elaborately in this chapter. The applications of composite materials have increased in various fields such as aeronautical, automobile, and marine industries owing to their unique physicochemical and tribological properties. However, the selective approach for reinforcing the NFs and fillers with the thermoset matrix needs further investigation to extend their applications significantly. The bio-based composites possess improved tribological and abrasive resistance due to the incorporation of NFs. The wear performance and mechanical properties of the bio-based composites differ with the addition of different types of NFs. Biocomposites with good tribological properties have been achieved by various reliable methods. The tribological behavior of the bio-based composites was analyzed by varying wear parameters like sliding distance, sliding velocity, and external load. This chapter also intends to analyze the various methods of improving the NF and filler quality to achieve stronger chemical bonding between the reinforcement and matrix materials.