

A review of important considerations in the compression molding process of short natural fiber composites

*Jamiluddin Jaafar¹, Januar Parlaungan Siregar^{2,3}, Cionita Tezara⁴,
Mohammad Hazim Mohamad Hamdan², Teuku Rihayat⁵*

¹ College of EngineeringUniversiti Malaysia Pahang, Kuantan, Malaysia

² Faculty of Mechanical and Automotive Engineering Technology, Universiti Malaysia Pahang, Pekan, Malaysia

³ Centre of Excellence for Advanced Research in Fluid Flow (CARIFF), Universiti Malaysia Pahang, Kuantan, Malaysia

⁴ Department of Mechanical Engineering, Faculty of Engineering and Quantity Surveying, INTI International University, Nilai, Malaysia

⁵ Chemical Engineering Department, Politeknik Negeri Lhokseumawe, Lhokseumawe, Indonesia

ABSTRACT

The study reviewed crucial parameters in the compression molding process for biocomposites affecting the properties of short natural fiber-reinforced polymer composites. The evaluation of drying and compounding processes between the polymer and short natural fiber was an essential consideration before the compression molding of biocomposites. Meanwhile, the parameters of molding temperature, compression pressure, and duration appeared to be other crucial and significant considerations requiring attention. In this study, all significant considerations affecting the performance of biocomposites were highlighted to provide essential information in the compression molding process of natural fiber composites topic. The findings from the present study are expected to improve the performance of short natural fiber-reinforced polymer composites and be an alternative to conventional polymer in various engineering applications in the future.

KEYWORDS

Compression molding; Processing parameters; Natural fiber composites

ACKNOWLEDGEMENT

This work was supported by the Malaysian Ministry of Higher Education [FRGS RDU 180335] and Universiti Malaysia Pahang for generously providing essential laboratory facilities.