



Open
Access

A Major Review on Tribology-Based Materials

Norazlianie Sazali^{1,2,*}, Ahmad Shahir Jamaludin³, Nor Hasrul Akhmal Ngadiman⁴

¹ Faculty of Mechanical & Automotive Technology Engineering, Universiti Malaysia Pahang, 26600 Pekan, Pahang, Malaysia

² Centre of Excellence for Advanced Research in Fluid Flow (CARIFF), Universiti Malaysia Pahang, Lebuhraya Tun Razak, 26300 Gambang, Kuantan, Pahang, Malaysia

³ Faculty of Manufacturing and Mechatronic Engineering Technology, Universiti Malaysia Pahang, 26600 Pekan, Pahang, Malaysia

⁴ School of Mechanical Engineering, Faculty of Engineering, Universiti Teknologi Malaysia, 81310 Skudai, Johor Darul Takzim, Malaysia

ARTICLE INFO

Article history:

Received 4 December 2019

Received in revised form 13 March 2020

Accepted 15 March 2020

Available online 27 May 2020

Keywords:

Tribology; ceramic composites; polymer composites; friction and wear

ABSTRACT

The utilization of advanced material in a diverse area can enhance the performance and quality of material engineering. Consequently, tribology testing becomes a demand in the industry such as construction, aviation, and automotive because of the widespread use of polymer-based natural fiber composites for their components and parts. This paper includes the discussion of each composites material that has different wear and sliding friction that required a different technique to encounter based on the ASTM standards by simulating under the real-time. The use of different materials demonstrates the wear and friction behavior and their potential for tribology engineering applications of the material are discussed in this review paper.

Copyright © 2020 PENERBIT AKADEMIABARU - All rights reserved

1. Introduction

Nowadays, the development of industry gives high impact and significant issues such as extensive natural resources. The growing sector, especially the large-scale construction and automation, causes a high impact on natural resources like metal and alloy. Therefore, another alternative must be focused on to substitute natural resources [1–3]. The use of composite seems promising due to its properties and characteristics as a substitute for the natural resource. The composite material has high corrosion resistance, high strength and the nature of composite material is adjustable based on a specific function [4-5]. The composite material defines as the two or more materials that have individual chemical and physical characteristic when combined produces a new type of material which its characteristic is differ from the individual characteristic [6-7]. In other words, composites are solid comprised of reinforcement substances incorporated into its matrix, which helps to enhance the rigidity and strength. As a consequence, it will allow more massive structural load. Both types of

* Corresponding author.

E-mail address: azlianie@ump.edu.my (Norazlianie Sazali)

<https://doi.org/10.37934/arfmts.71.2.2637>