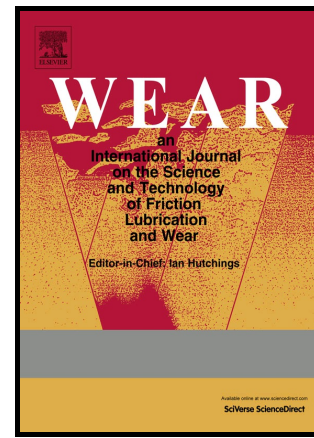


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Comparative performance evaluation of NAO friction materials containing natural graphite and thermo-graphiteN Aranganathan and Jayashree Bijwe¹

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Abstract

Graphite, a solid lubricant having good thermal conductivity (TC) and lubricity is used as a friction modifier in friction material (FM) formulations. Since graphite can be from different origins (synthetic, natural, treated etc.) and particles can be of various sizes, shapes and varying in crystallinity and purity, a careful selection is required for achieving desired performance properties of the FMs. Thermo-graphite (TG), as claimed to be more thermally conducting along with number of beneficial properties by the manufacturer was used to develop multi- ingredient FM. Two FMs differing in only type of graphite (TG and natural graphite-NG) were developed and evaluated for various performance properties. Tribo-performance evaluation of both the FMs on inertia dynamometer (schedule JASO C406) led to the conclusion that TG based FM proved superior to NG based one in almost all the properties barring recovery performance.

Key words: Polymer-matrix; composite Brake/clutch materials; Solid Lubricant; Electron microscopy; Wear testing.

1 Introduction

Friction material (FM) is a polymeric resin based composite necessarily consisting of various fibers and functional fillers in the form of friction modifiers and performance enhancers.[1-4] Natural graphite (NG) or synthetic graphite are invariably used in FM formulations as solid

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