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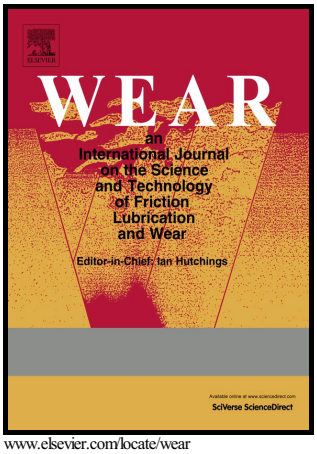

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Effect of Pre-impregnated Organosilicon Layer on Friction and Wear Properties of Paper-based Friction Materials

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Abstract

Paper-based friction materials contain a variety of inorganic and organic materials, and organosilicon can be well linked with organic and inorganic compounds due to its inorganic and organic functional groups. Therefore, in this work, paper-based friction materials with different organosilicon contents were obtained by the pre-dipping the preform. The results displayed that adding a small amount of organosilicon to the paper-based friction materials could increase the coefficient of static friction, but also reduced the coefficient of dynamic friction and wear rate of the paper-based friction materials. When the content of organosilicon in the materials was more than 5 wt%, the wear rate of the materials tended to be stable. And the paper-based friction materials with 7.5 wt% organosilicon content had the highest coefficient of static friction. By testing the variation of the coefficient of friction, it was found that the materials with 7.5 wt% organosilicon content had the best stability.

Key words: Paper-based friction materials, Organosilicon, Friction and wear

1. Introduction

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