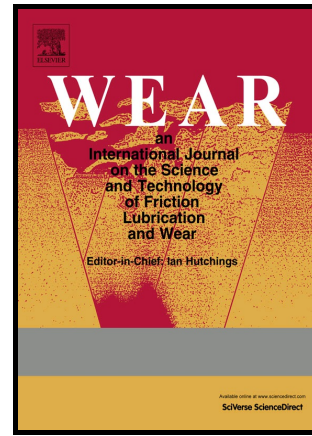


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Effects of the shapes and dimensions of mullite whisker on the friction and wear behaviors of resin-based friction materials

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Abstract

In this study, mullite whiskers were prepared by the molten salt method and added into the friction composites. It was of interest to examine the effects of shapes and dimensions of mullite whisker addition on the sliding friction and wear characteristics of resin-based friction materials over a range of temperatures. The whiskers with higher mullite phase contents enhanced the friction stability. In addition, the wear rate increased with increasing aspect ratio of the mullite whisker. Among all the specimens, the whiskers with an average aspect ratio of 14 demonstrated the best improvement in the tribological performance. The friction coefficient variance of the specimen was small, $\sim 7.9 \times 10^{-4}$ and 6.5×10^{-4} during the fade and recovery process, respectively. The wear rate ~ 4 wt%. Moreover, the worn surfaces of the composites were analyzed, revealing that the

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