

## On the friction and sliding wear of rubber/layered silicate nanocomposites

*K. G. Gatos, K. Kameo, J. Karger-Kocsis\**

Institut für Verbundwerkstoffe GmbH (Institute for Composite Materials), Kaiserslautern University of Technology,  
Erwin Schrödinger Str. 58, D-67663 Kaiserslautern, Germany

*Received 26 October 2006; accepted in revised form 11 December 2006*

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**Abstract.** The dry sliding and friction behaviors of organoclay modified hydrogenated nitrile (HNBR) and ethylene/propylene/diene (EPDM) rubbers were studied using a pin (steel)-on-plate (rubber sheet) test configuration. It was found that the organoclay modification may improve or deteriorate the resistance to wear of rubbers. The resistance to wear was adversely affected by pronounced intercalation/exfoliation and two-dimensional alignment of the clay layers (i.e. normal to the moving pin). This result is in analogy with the directional dependence of the wear performance of fiber-reinforced composite laminates.

**Keywords:** *nanomaterials, polymer composites, rubber, wear, organoclay*

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