Generation Mechanism of Localized Wear of Cu-impregnated Metalized Carbon Contact Strip

Yoshitaka KUBOTA Takamasa HAYASAKA Shinichiro KOGA Hidehiko NOZAKI

Localized wear of pantograph contact strips is an urgent problem to be solved, as it can lead to the fusion of the pantograph head and subsequent breakage of the overhead contact wire. However, the mechanisms underlying localized wear have not yet been clarified, and effective countermeasures have not been established. The aim of this study is to clarify the generation mechanism of localized wear in the copper-impregnated type of metalized carbon contact strip. Therefore, we analyzed actual worn strips using a micro Raman spectrometer and investigated the sliding wear behavior of contact strips with different degrees of graphitization of the carbon substrate using a block-on-ring-type wear tester.