

### **Application of Piezoelectric Rubber Sensor to the Rolling Stock**

Shogo MAMADA    Naoyuki YAGUCHI    Sho YAMANAKA  
Mineyuki ASAHINA    Yoshiaki OKAMURA

Piezoelectric materials are used as a sensor because they convert the mechanical energy to the electrical energy. Though the conventional piezoelectric materials are piezoelectric ceramic, they are very brittle. Instead of brittle ceramics, flexible piezoelectric rubber is preferable for engineering use. Therefore, we investigated a pinching sensor of foreign matter at the slide door of the rolling stock, and a damage detection sensor at the axle bearing of the rolling stock. The pinching sensor is aimed at detecting foreign matter which cannot be detected by the existing system. And the damage detection sensor is aimed at detecting the damage of axle bearings with simplified system. In this paper, the outline of the systems and the results of these examinations are reported.