

**Low speed sliding characteristics of Cu-Fe-W-based Composite Material  
Contacts Containing WS<sub>2</sub>**

**Yoshitada WATANABE\*, Masaomi ARAI\* and Koichiro Sawa\*\***

**\*Graduate School of Electrical Engineering and Electronics,  
Kogakuin University**

**\*\*Faculty of Science and Technology,  
Keio University**

**Summary**

Recently, Sliding electrical contacts are used in severe operating conditions, such as high temperatures, very low temperatures and ultra-high vacuums. They also require high reliability. In this research, three kinds of composite materials, containing different elements, make use of WS<sub>2</sub> show excellent characteristics in the atmospheres mentioned above. A Cu disk was examined as a partner material. Consequently, it becomes clear that composite materials containing the smallest quantity (30wt%) have excellent characteristics in contact resistance and coefficient of friction.

Keywords : Sliding electrical contact, Solid lubricant, Composite material,  
Contract resistance ,Coefficient of friction