

## **A study of contact reliability in n-hexane with small load currents**

Ag and Pd contacts were immersed in liquid n-hexane, and operated to perform consecutive break operations of inductive DC load currents up to several amps. The resultant contact performances were investigated, mainly regarding contact resistance, arc duration, and mass changes (arc erosion). From the previous results obtained through our recent various experiments concerning electrical contact performances in liquid environments, the authors expected to find certain load condition(s) in which electrical contacts operated in liquid n-hexane could exhibit excellent operating characteristics, possibly better than those operated in air. Unfortunately, however, such preferable load range(s) could not be specified. Ag contacts undergoing steady arcs tend to show significant increase of contact resistance due to arc products deposited on electrode surfaces, although they suffer only minor erosion. Pd contacts, on the other hand, tend to suffer severe arc erosion, although their contact resistance can be stable with load currents up to 2A. Some experimental data were obtained from dissimilar-materials mating operations, which supports our proposed mechanism model for explaining such contact phenomena in liquid n-hexane.