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Microscopic structure analysis of Fretting Contact

Authors;

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Abstract;

In recent years, there has been increasing demand to miniaturize wiring harness connectors in automobiles due to the increasing volume of electronic equipment and the reduction of the installation space allocated for the electronic equipment in cars for the comfort of the passengers.

In earlier work, we reported that load and tin plating thickness had high impact on fretting corrosion of tin plated contacts. In this report, we made fretting test samples of which contact resistance increased, using the two limited parameters (load and tin thickness), and analyzed the cross-section of the contact points using a cross-section SEM(Scanning Electron Microscope) method and the like. Based on the results of analysis, we examined the difference in the extremely-fine contact structure between factors, "load" and "tin thickness". Moreover, we examined a 3-dimensional contact structure of some samples using a tomography method.