

# The Composition Change of Contact Material Surface

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**Abstract**—Contact surface composition change will definitely affect the performance of electrical contacts, even make the electrodes fail to work. Composition change of contact material surface heated respectively by arcing current and Joule energy is studied in this paper and experimental results indicate that percentage change of metals is influenced by both the energy input to the electrode and the properties of contact material, such as thermal conductivity, specific heat, density and melting point etc. Two criteria are presented to show the rules of composition change for contact heated by arcing current and Joule energy respectively.

**Keywords:** Electrical contacts, Material composition,