

# Measurement of Electrical Charges Carried by Dust Particles

Jin Chun Gao and Ji Gao Zhang  
Research Laboratory of Electric Contacts  
Beijing University of Posts and Telecommunications  
Beijing 100876, China.

***Abstract* - Dust contamination on electric contacts appears to be very serious in China. The adhesion of dust on contact surfaces is due to the static electric charges carried by the particles. Measurement of the charges is of importance for lab simulation. The Millikan testing method was used for the measurement, with 183 sets of data collected and used for fitting the curves. The final result shows that electric charges increase with the effective radius of the particle. Particles with a radius in the range between 0.5 and 2.5  $\mu\text{m}$  may carry electric charges between**