

Simulation of Arc Discharge Modes in Vacuum Chamber

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Abstract - The interconnection between an erosion of contacts and an arc discharge forms was found out. These results are explained by mathematical model. The model describes a current density distribution in contact system with arc and takes into account the thermal process in intercontact gap. An electrical field instead magnetic field determines the formation of arc mode in the greater degree. The simulation of processes occurring in arc for some versions of contact system design has been carried out. Its defects and advantages are considered. The best design criterion is providing by current-carrying electrode system such conditions of arc motion when action of discharge on electrodes system is minimum. These conditions are existent at the maximum of electric field intensity is placing at the outside of the gap.