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ANALYSIS OF COMBINATION DIELECTRIC COATINGS

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ABSTRACT

The research is based on many years experience on developing conglomerate, intermetallic and nitride type coatings with properties of wear resistance, high temperature resistance, excellent corrosion resistance, etc using vacuum Technologies

Working with vacuum plant is not possible to apply oxide coatings having good dielectric properties (not disruptive electrical current exceeding 1000 volts). This happens because of technological equipment, material, electrical and physical-chemical properties.

[*Keywords:* oxidation of micro arc, anodic oxidation, coatings, vacuum technologies.]

GENERAL

That proves the need to develop dielectric not disruptive exceeding 1000 volts coating and micro hardness up to 2500 kg/mm² for processed aluminum. There are other metals (i.e. Mg, Ti, Ta, Nb, Zr, Be) used also for the oxidation of micro arc. During the research different tasks are conducted and are planned to be conducted, including oxidation of micro arc, anodic oxidation, anodic oxidation in saline melts, anodic oxidation in gas plasma and plasma electrolyte anodic oxidation. All together these are recently most modern methods of metal proceeding.

Oxidation of micro arc is a complex process of developing coatings on material surfaces - the active electrode in an electrolyte during discharge of micro arc moves on the material surface.

One of the main tasks of the research is to find the electrolyte concentration, running a successful research process. During oxidation of micro arc (see Fig. 1) and anodic oxidation process for electrical installations with fixed and variable currents can be used. The paper describes six phases of oxidation of micro arc process in details.

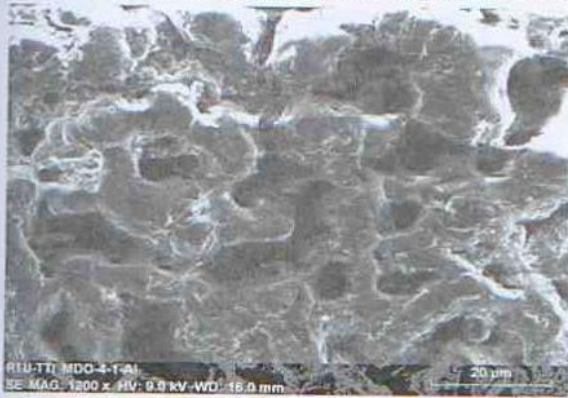


FIGURE 1. NORMAL STRUCTURE OF OXIDATION OF MICRO ARC