

Title (en)
PROCESS AND DEVICE FOR FORMING CERAMIC COATINGS ON METALS AND ALLOYS

Title (de)
VERFAHREN UND VORRICHTUNG ZUR HERSTELLUNG N VON KERAMISCHEN BESCHICHTUNGEN AUF METALLEN UND LEGIERUNGEN

Title (fr)
PROCEDE ET DISPOSITIF PERMETTANT DE FORMER DES REVETEMENTS EN CERAMIQUE SUR DES METAUX ET DES ALLIAGES

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Application
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Abstract (en)
[origin: WO03083181A2] There is disclosed a process and apparatus for carrying out plasma electrolytic oxidation of metals and alloys, forming ceramic coatings on surfaces thereof at a rate of 2-10 microns per minute. The process comprises the use of high-frequency current pulses of a certain form and having a given frequency range, combined with the generation of acoustic vibrations in a sonic frequency range in the electrolyte, the frequency ranges of the current pulses and the acoustic vibrations being overlapping. The process makes it possible to introduce ultra-disperse powders into the electrolyte, with the acoustic vibrations helping to form a stable hydrosol, and to create coatings with set properties. The process makes it possible to produce dense hard microcrystalline ceramic coatings of thickness up to 150 microns. The coatings are characterised by reduced specific thickness of an external porous layer (less than 14% of the total coating thickness) and low roughness of the oxidised surface, Ra 0.6-2.1 microns.

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