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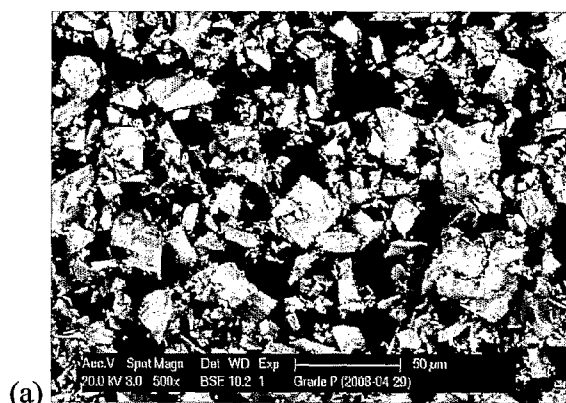
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[Continued on next page]

(54) Title: METALLIC COATINGS ON METALLIC SUBSTRATES

Figure 1



(57) Abstract: Porous titanium coatings have been produced on Ti-6Al-4V substrates by electrophoretic deposition of TiH_2 powder suspensions, followed by vacuum sintering at 850°C. The use of titanium hydride resulted in lower sintering temperatures as compared to pure titanium powders and this allowed maintaining the α - β microstructure and mechanical properties of the substrate material. Pure Ti coatings with thicknesses varying from 10 μm to over 500 μm , a porosity ranging from 37 to 52 % and a surface roughness from 1.6 to 4.9 μm have been produced. The process allows to control the thickness and porosity of the coating. Metal coatings with metals of the group consisting of Ti, Zr, Mg5 Hf, Ta, Nd, Nb, Mn, and Mo with thicknesses varying from 1 μm - 90 μm , from 2 μm - 90 μm or from 2 μm - 1000 μm and a porosity ranging from 0 to 70%, preferably from 2 to 70% and more preferably from 45 to 70 % are achievable by this process. It even is possible to produce coatings that have a porosity of only 0-5 % porosity. Adhesion testing of the coatings showed a tensile bond strength that is higher than 22 MPa.



SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

C25D A61L B01J C23C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EP0-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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X	DE 11 01 619 B (PHILIPS NV) 9 March 1961 (1961-03-09) claims 1-3 ----- -/--	1,4, 8-11, 13-23, 25, 30-32, 37-41, 43-61, 63,66-80



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents :

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

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International application No

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