

Title (en)

METHOD FOR DEPOSITING HARD METALLIC COATINGS

Title (de)

VERFAHREN ZUR ABSCHEIDUNG VON HARTMETALLÜBERZÜGEN

Title (fr)

PROCEDE DE DEPOT DE REVETEMENTS METALLIQUES DURS

Publication

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Application

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Abstract (en)

[origin: WO2008009714A1] The invention relates to a method for depositing a hard metallic chrome coating or a hard coating of another metal having chemical properties which are similar to those of chrome, by chemical vapour deposition on a metallic substrate, said method essentially comprising the following steps: a) a solution is prepared, containing, in a solvent which is depleted of oxygen atoms, i) a molecular compound of the bis(arene) family which is a precursor of the metal to be deposited and has a decomposition temperature of between 300°C and 550°C, and ii) a chlorinated additive; b) said solution is introduced in the form of an aerosol into a heated evaporator at a temperature between the boiling temperature of the solvent and the decomposition temperature of the precursor; and c) the vapourised aerosol is driven by a neutral gas flow from the evaporator towards a CVD reactor comprising a susceptor carrying the substrate to be covered and heated to a temperature higher than the decomposition temperature of the precursor but to a maximum temperature of 550°C, the evaporator and the CVD reactor being subjected to the atmospheric pressure. This DLI-CVD method carried out at a low temperature and atmospheric pressure enables continuous treatment in industrial conditions of the large-size steel or alloy metallic plates, in order to obtain hard, monolayer or nanostructured multilayer metallic coatings. The invention also relates to an injectable solution especially suitable for implementing said method.

IPC 8 full level

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