Title (en)

Method for electroplating hard chrome layers

Title (de)

Verfahren zur galvanischen Abscheidung von Hartchromschichten

Title (fr)

Procédé de dépôt galvanique de couches en chrome dur

Publication

EP 2180088 B1 20110511 (DE)

Application

EP 08018462 A 20081022

Priority

EP 08018462 A 20081022

Abstract (en)

[origin: EP2180088A1] The method comprises contacting a substrate surface to be coated with chromium-containing electrolytes in a cell at 30-85[deg] C for galvanic deposition, and applying a voltage between the substrate surface to be coated and a counter electrode for galvanically depositing a first hard chromium layer on the substrate surface, where the deposition takes place in a container that is gas-tight against environment and a low pressure is adjusted during applying the voltage in the container. The substrate surface and chromium-containing electrolytes are moved with relative speed of greater than 1-5 m/s. The method comprises contacting a substrate surface to be coated with chromium-containing electrolytes in a cell at 30-85[deg] C for galvanic deposition, and applying a voltage between the substrate surface to be coated and a counter electrode for galvanic deposition of a first hard chromium layer on the substrate surface, where the deposition takes place in a container that is gas-tight against the environment and a low pressure is adjusted during applying the voltage in the container. The substrate surface and chromium-containing electrolytes are moved with a relative speed of greater than 1-5 m/s. A second hard chromium layer is deposited on the first hard chromium layer, where a pulse current is applied between the substrate surface and the counter electrode for the deposition of the first hard chromium layer and a direct current is applied for the deposition of the first hard chromium layer on the second hard chromium layer. A pressure difference is adjusted to an ambient pressure of 20-200 mbar. The pulse current for the deposition of the first hard chromium layer is applied with a frequency of 50-1000 Hz. For the deposition of the hard chromium layer, a current density is adjusted to 50-500 A/dm 2>, where pH value in the electrolytes is adjusted to = 1. The chromium-containing electrolytes flow into the cell from below and over an overflow.

IPC 8 full level

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