Title (en)

Process for inhibiting tarnishing of silver coatings

Title (de)

Verfahren zur Verhinderung des Anlaufens von Silberschichten

Title (fr)

Procédé pour éviter le ternissement de couches d'argent

Publication

EP 2196563 A1 20100616 (DE)

Application

EP 08021571 A 20081212

Priority

EP 08021571 A 20081212

Abstract (en)

The method comprises applying a metal layer on a silver layer with a layer thickness of 5-100 nm, where the metal layer contacts the silver layer using an electrolyte containing metal ions, and applying a layer made of self-organized molecules on the metal layer. The silver layer is contacted with acidic electrolyte. A current is applied for applying the metal layer between the silver layer and a counter electrode in short-time. The electrolyte is contacted with a treatment solution, which has a reduction agent or metal reducible by the colloid metal. The method comprises applying a metal layer on a silver layer with a layer thickness of 5-100 nm, where the metal layer contacts the silver layer using an electrolyte containing metal ions, and applying a layer made of self-organized molecules on the metal layer. The silver layer is contacted with acidic electrolyte. A current is applied for applying the metal layer between the silver layer and a counter electrode in short-time. The electrolyte is contacted with a treatment solution, which has a reduction agent or metal reducible by the colloid metal. The electrolyte is present in a concentration of 1-10 g/l. A current density of 0.5-3 A/dm 2> is adjusted between the silver layer and the counter electrode. The current is applied for a time period of 1-10 seconds, where the time period is fixed with the stipulation in dependent of the current density and the concentration of the metal in the electrolyte, so that a layer thickness of the metal to be deposited is reached to 5-100 nm. An independent claim is included for a silver coating.

Abstract (de)

Die vorliegende Erfindung betrifft ein Verfahren zur Verhinderung des Anlaufens von Silber- oder Silberlegierungsschichten. Erfindungsgemäß werden Silber- oder Silberlegierungsschichten mit einer dünnen Schicht eines Metalls der Gruppe bestehend aus Palladium, Platin, Osmium und Rhenium beschichtet, wobei eine solche Beschichtung autokatalytisch oder galvanisch erfolgen kann. In einer Ausgestaltung der Erfindung wird auf die so abgeschiedene Metallschicht noch zusätzlich eine Schicht aus selbstorganisierenden Molekülen wie beispielsweise Hexadecanthiol, Oktadecanthiol und/oder einer Alkansulphonsäure oder deren Derivate aufgebracht. Die so behandelten Silber- oder Silberlegierungsschichten zeigen einen deutlich verbesserten Anlaufschutz und eine erhöhte Korrosionsbeständigkeit.

IPC 8 full level

C25D 3/50 (2006.01); **C23C 18/16** (2006.01); **C23C 18/18** (2006.01); **C23C 18/44** (2006.01); **C23C 18/48** (2006.01); **C23C 26/00** (2006.01); **C23C 28/00** (2006.01); **C23F 11/16** (2006.01); **C25D 3/56** (2006.01); **C25D 5/48** (2006.01); C25D 5/18 (2006.01)

CPC (source: EP US)

C23C 18/1601 (2013.01 - EP); **C23C 18/1658** (2013.01 - EP); **C23C 18/166** (2013.01 - EP); **C23C 18/1689** (2013.01 - EP); **C23C 18/1841** (2013.01 - EP); **C23C 18/44** (2013.01 - EP); **C23C 18/48** (2013.01 - EP); **C23C 26/00** (2013.01 - EP); **C23C 28/023** (2013.01 - EP); **C23F 11/161** (2013.01 - EP); **C25D 3/50** (2013.01 - EP US); **C25D 3/567** (2013.01 - EP); **C25D 5/18** (2013.01 - EP US); **C25D 5/48** (2013.01 - EP)

Citation (applicant)

EP 0538006 A1 19930421 - ENTHONE OMI INC [US]

Citation (search report)

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