Title (en)

NANOCARBON/ALUMINUM COMPOSITE MATERIAL, PROCESS FOR PRODUCING THE SAME, AND PLATING LIQUID FOR USE IN SAID PROCESS

Title (de)

NANOKOHLENSTOFF/ALUMINIUM-VERBUNDWERKSTOFF, HERSTELLUNGSVERFAHREN DAFÜR UND PLATTIERUNGSFLÜSSIGKEIT ZUR VERWENDUNG BEI DEM VERFAHREN

Title (fr)

MATIÈRE COMPOSITE DE NANOCARBONE/ALUMINIUM, PROCÉDÉ SERVANT À PRODUIRE CELLE-CI ET LIQUIDE DE PLACAGE DESTINÉ À ÊTRE UTILISÉ DANS LEDIT PROCÉDÉ

Publication

EP 1930481 A1 20080611 (EN)

Application

EP 06766838 A 20060616

Priority

- JP 2006312152 W 20060616
- JP 2005258646 A 20050907

Abstract (en)

[Object] To provide a nanocarbon/aluminum composite material having high strength and electrical conductivity for suitable use in a lead wire, a heat exchanger and an automotive part and a process for producing the nanocarbon/aluminum composite material. [Solution] There is provided a plating liquid for nanocarbon/aluminum composite production, comprising an aluminum halide, nanocarbon and 1,3-dialkylimidazolium halide and/or the like, wherein the molar ratio of the aluminum halide to the 1,3-dialkylimidazolium halide and/or the like is in the range of 20:80 to 80:20 and the 1,3-dialkylimidazolium halide and/or the like has an alkyl group with a carbon number of 1 to 12. There are also provided a nanocarbon/aluminum composite production process comprising forming a plating film on a substrate surface by electrolysis of the plating liquid in a dry, oxygen-free atmosphere with the passage of a direct current etc. under the electrolysis conditions of a bath temperature of 0 to 300°C and a current density of 0.01 to 50 A/dm 2 and a nanocarbon/aluminum composite material produced by this production process.

IPC 8 full level

C25D 15/02 (2006.01); **C25D 3/66** (2006.01)

CPC (source: EP US)

C25D 3/665 (2013.01 - EP US); **C25D 5/18** (2013.01 - EP US); **C25D 15/02** (2013.01 - EP US)

Citation (search report)

See references of WO 2007029395A1

Cited by

EP2280095A3; EP2500969A4; EP2971268A1

Designated contracting state (EPC)

DE FR GB

DOCDB simple family (publication)

EP 1930481 A1 20080611; CN 101258269 A 20080903; JP 2007070689 A 20070322; US 2009277793 A1 20091112; WO 2007029395 A1 20070315

DOCDB simple family (application)

EP 06766838 A 20060616; CN 200680032831 A 20060616; JP 2005258646 A 20050907; JP 2006312152 W 20060616; US 6602706 A 20060616