

Title (en)

Coating methods using plasma jet and plasma coating apparatus

Title (de)

Beschichtungsverfahren mit Plasmastrahl und Plasmabeschichtungsvorrichtung

Title (fr)

Procédés de revêtement utilisant un jet de plasma et appareil de revêtement au plasma

Publication

EP 2279801 B1 20150128 (EN)

Application

EP 09166450 A 20090727

Priority

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Abstract (en)

[origin: EP2279801A1] The present invention relates to methods for coating substrates with inorganic-organic hybrid polymer material, to coated substrates obtainable by the coating methods, and to a plasma coating apparatus suitable for use in the methods. There are two variants of the coating method, a one-step and a two-step method. In the former, liquid comprising hybrid inorganic-organic pre-polymers is injected in a plasma jet, and a surface of the substrate to be coated is exposed to said plasma jet, and in the latter, liquid comprising hybrid inorganic-organic pre-polymers is applied on a surface of the substrate, and the substrate is exposed to the plasma jet to cure the pre-polymers thus giving inorganic-organic hybrid polymer material. Owing to the distinct coating methods, the coated substrates were shown to exhibit excellent oxygen and water vapour barrier properties, as well as chemical and abrasion resistance.

IPC 8 full level

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B05D 1/62 (2013.01); **C23C 4/126** (2016.01); **C23C 24/04** (2013.01); **B05D 3/067** (2013.01)

Citation (examination)

- WO 9324243 A1 19931209 - POLAR MATERIALS INC [US]
- PAULUSSEN ET AL: "Plasma polymerization of hybrid organic-inorganic monomers in an atmospheric pressure dielectric barrier discharge", SURFACE AND COATINGS TECHNOLOGY, ELSEVIER, AMSTERDAM, NL, vol. 200, no. 1-4, 1 October 2005 (2005-10-01), pages 672 - 675, XP005063599, ISSN: 0257-8972, DOI: 10.1016/J.SURFCOAT.2005.02.134

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US2015349307A1; DE102017216139B3; US10952309B2; US10857815B2; WO2015005885A1; WO2012007388A1; US10532582B2

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