Title (en)

METHOD FOR PRODUCING A PLASTIC ARTICLE WITH A HYDROPHOBIC GRAFT COATING AND PLASTIC ARTICLE

Title (de)

VERFAHREN ZUR HERSTELLUNG EINES KUNSTSTOFFARTIKELS MIT HYDROPHOBER PFROPFBESCHICHTUNG SOWIE KUNSTSTOFFARTIKEL

Title (fr)

PROCÉDÉ DE FABRICATION D'UN ARTICLE EN MATIÈRE PLASTIQUE POURVU D'UN REVÊTEMENT GREFFÉ HYDROPHOBE, ET ARTICLE EN MATIÈRE PLASTIQUE

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Abstract (en)

[origin: CA2897238A1] The invention relates to a method for producing a plastic article, comprising a polymer substrate and a three-dimensional, hydrophobic polymer structure that is covalently bonded to the substrate, involving the following steps: (a) loading a surface of a polymer substrate with an initiator, which can be activated thermally or excited by light and which is suitable for generating radicals on the surface of the substrate, i.e. on the polymer of the substrate, after excitation, the initiator being adsorbed from a first solvent on the surface of the substrate; (b) loading the substrate, which is substantially freed from the first solvent and on which the initiator has been adsorbed, with at least one hydrophobic, polymer or monomer graft reagent, which is capable of polymerisation and which, as a homopolymer, has a static contact angle with water of at least 75° when measured at 25°C and which is suitable to react with the radicals generated on the surface of the substrate so as to form a covalent bond, the graft reagent being used without solvent or in an organic, second solvent, the solvability and/or the swelling of the substrate being greater in the first solvent than in the graft reagent and/or in the mixture of the second solvent and the graft reagent; and (c) exciting the initiator by irradiating with light of a suitable wavelength the surface of the substrate that is loaded with the initiator and the graft reagent, or activating the initiator by supplying heat such that the initiator generates radicals on the surface of the substrate and the graft reagent forms a (three-dimensional) polymer structure that is covalently bonded on the surface of the substrate. The invention further relates to a plastic article produced as per the method, comprising a polymer substrate and a hydrophobic polymer structure that is covalently bonded onto the substrate, the article having a contact angle of water on the covalently bonded polymer structure of at least 75°, in particular of at least 90°, preferably of at least 100°, particularly preferably of at least 110°.

IPC 8 full level

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