

Title (en)

SCRATCH-RESISTANT OPTICAL MULTI-LAYER SYSTEM APPLIED TO A CRYSTALLINE SUBSTRATE

Title (de)

KRATZFESTES OPTISCHES MEHRSCHICHTSYSTEM AUF EINEM KRISTALLINEN SUBSTRAT

Title (fr)

SYSTEME OPTIQUE MULTICOUCHE RESISTANT AUX GRIFFURES, APPLIQUE SUR UN SUBSTRAT CRISTALLIN

Publication

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Application

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Abstract (en)

[origin: WO2005091021A1] The invention relates to an optical multi-layer system that is applied to a crystalline substrate. Said system is obtained by a method, according to which: a composition that contains nanoparticles comprising polymerisable and/or polycondensable groups is applied to a crystalline substrate; the groups of nanoparticles are polymerised and/or polycondensed to form an organically cross-linked layer; one or more additional layers are applied in the same manner; the layered composite thus obtained is thermally compressed and the organic components thus obtained are burnt out. In the case of the layer that is applied last, the polymerisation and/or polycondensation of the groups of nanoparticles, which form an organically cross-linked layer, can take place directly in the final stage, or the nanoscale inorganic solid particles may contain no polymerisable and/or polycondensable organic groups. The optical multi-layer systems produced according to said method are suitable for use as scratch-resistant interference layer systems, such as reflection and anti-reflection coatings on a crystalline substrate. The system is suitable e.g. for sapphire substrates such as sapphire watch-glasses.

IPC 8 full level

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