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Sol–Gel Derived Durable Antireflective Multilayered TiO2/SiO2 Coating for Solar Glass

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Abstract : In this paper, multilayer TiO2-SiO2 containing PDMS coatings were produced. Also, the effect of triton as a porosity maker on single and multilayer silica and titania coatings was investigated. The results showed stability of optical triton containing coatings disappears with time. Because of the presence of triton in solution improve the wetting properties of PDMS sols and helps lead to instability by water absorption. However; without triton, antireflective multilayer coatings with high transmittance 98% and excellent durability were prepared by sol–gel process using poly dimethyl siloxane as additive. This coating can be used as well as in solar applications.

Keywords : sol-gel, thin film, anti-reflective, titania-silica, PDMS, triton
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