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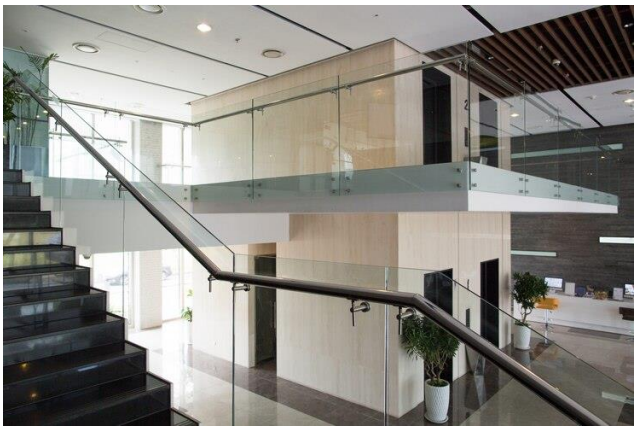
PROCESS OF SYNTHESIZING AN ANTI-FOG, SELF-CLEANING AND WATER-REPELLENT COATING ONTO A GLASS PANEL



MORE INFORMATION

MEGA-TREND

- Chemicals and Materials

TECHNOLOGY READINESS LEVEL (TRL)

- TRL 6

PATENT/ GRANTED NUMBER

- PI 2020002584

TECHNOLOGY OVERVIEW

The present invention relates to a process of synthesizing an anti-fog, self-cleaning and water-repellent coating onto a glass panel, said coating consisting of a composition of a formulated hydrophobic polymer resin, Polydimethylsiloxane (PDMS)-silicone elastomer, a curing agent, Aminopropyl triethoxysilane (APTES) and an inorganic precipitate nanoparticles, calcium carbonate ($CaCO_3$), the said process comprising the steps of: Mixing the PDMS and elastomer (1) at a weight ratio of 10:1 preferably at the temperature of 50°C for 2h to form a formulated PDMS-silicone

elastomer. Adding 50 mL of formulated PDMS-silicone elastomer into 1L of 100 % ethanol solvent and mixing (2) at room temperature for 20 min to increase the hydrophobicity effect. Adding 0.2wt. % APTES into formulated PDMS-silicone elastomer and mixing (3) preferably at temperature in the range of 20-25°C for 20 min to form a mixture of PDMS-APTES. Dispersing 0.8wt.% precipitate CaCO3 in 250 mL 100% ethanol solvent (4) at room temperature for 2hr. Characterised by: Mixing between PDMS-APTES and with disperse CaCO3 (5) at a weight ratio of 10:2 preferably at temperature in the range of 20-25°C for 30 minutes to form a coating solution; Casting said coating solution on glass panel to form a coating layer (6); and Drying the glass panel (7) preferably at temperature in the range of 20-25°C for 20 min.

CONTACT US!

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