

Dielectric/Ag/dielectric coated energy-efficient glass windows for warm climates

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Abstract

Energy-efficient glass windows for warm climates were designed and fabricated using a three-layer system of dielectric/metal/dielectric (D/M/D) on glass. Silver was used as a metal layer. The design parameters for optimum performance of D/M/D on glass-systems for dielectrics, having refractive indices in the range 1.6–2.4, were obtained by numerical calculations. Based on these parameters, D/M/D films on glass substrates were deposited using dielectrics such as TiO₂, WO₃, and ZnS. Upon testing these coated glass windows, it was concluded that the window with any of the three dielectrics performed well and the efficiencies of the windows with different dielectrics were nearly the same.

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