

Enhancement of reflection efficiency of multilayer thin films structure by modifying packing density

최주석, 김정현*

서울시립대학교

(jhkimad@uos.ac.kr*)

Spectrally selective coatings have been used to modulate reflectance at specific wavelengths for various applications by employing a multilayer structure consisting of high/low/high refractive index thin films. As an example, near-infra-red (NIR) reflective coatings on glass can be used to optimize energy consumption by reflecting radiation in NIR region while transmitting a high percentage of light in the visible region. Cobalt doped TiO₂ thin films and base-catalyzed SiO₂ thin films exhibited higher and lower refractive indices, respectively, and these were attributed to variation in packing density. Therefore, it would be possible to get higher reflection efficiency from the multilayer structure consisting of higher/lower/higher refractive index thin films.