

### Reflectance modulation of transparent multilayer thin films for energy efficient window applications

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Spectrally selective glazing system attracts great attention for energy efficient window applications. In this study, multilayer films consisting of high/low/high (TiO<sub>2</sub>/SiO<sub>2</sub>/TiO<sub>2</sub>) refractive index materials were prepared by sol-gel synthesis and spin coating process. Film thicknesses were examined by spectroscopic ellipsometry (SE) and focused ion beam (FIB) techniques, and refractive indices of TiO<sub>2</sub> and SiO<sub>2</sub> single layer films were also measured by SE. The reflectance spectra experimentally measured from multilayer films were in good agreement with the theoretical calculations by incorporating variable refractive index into the transfer matrix, so it is possible to modulate reflectance of multilayer films by controlling experimental variables for energy efficient transparent window applications.