Compositional analysis and optical properties of Co doped TiO2 thin films fabricated by spray pyrolysis method for dielectric and p hotocatalytic applications

Absract:

Cobalt doped TiO_2 thin films (CTF) deposited by spray pyrolysis has been studied. The compositional analysis has been done using RBS method, while optical spectroscopy has been done by measuring the transmittance and reflectance of the films. The CTF thin films were prepared by doping TiO_2 at different concentration levels of Co which was varied between 0 and 4.51 at.%. The optical transmittance of the thin film has been found to be about 80% in the visible and near infra red regions. The calculated optical band gap has been observed to shift by about 0.22 eV, this shows a high potential for application as a dielectric and a Photocatalyst material.

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