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Photocatalytic activity of iron doped TiO₂ for indoor applications via Sol-Gel technique

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ABSTRACT

Bare TiO₂ and Fe-doped TiO₂ films were prepared via Sol-Gel technique, and then deposited on glass substrates using dip-coating method. The characterizations for the prepared thin films were investigated by means of UV-VIS absorption, XRD, AFM and photo-degradation of Methylene Blue (MB) dye. The XRD measurement displays anatase phase in the prepared films. UV-VIS absorption spectra exhibited red shift in Fe-doped TiO₂ samples, whereas, AFM test demonstrates a decreasing in the root mean square roughness value in Fe-doped TiO₂ compared to that of bare sample. Finally, photocatalytic activity test shows that Fe-doped TiO₂ can be activated in the visible spectral region.

KEYWORDS