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Hydrophilic and Photocatalytic properties of Dip-coated Synthetic Rutile-based Thin Films Derived from Minerals Ores

This article focuses on the investigation of hydrophilic property and photocatalytic activity of synthetic rutile-based thin films prepared by conventional dip coating method. The synthetic rutile was prepared by chloride leaching process for purification of synthetic rutile from mineral ores and was coated on glass substrate with binder for several times to reach designated thickness. UV-Visible spectroscopy technique was employed to study relevant optical properties meanwhile the crystalline structure of synthetic rutile-based thin films was characterized by X-ray diffraction. Surface morphologies of the coated films was monitored by scanning electron microscopied while hydrophilic property was observed by contact angle measurement. Photocatalytic activity was evaluated by mean of the degradation of organic dye Rhodamine B under ultraviolet light and visible light. Further details of results and discussion will be represented.

Keywords: hydrophilic, photocatalytic, synthetic rutile and minerals ores.

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