Photocatalytic activity of Nanosized TiO_2 thin film on glass

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Titanium dioxide has been widely used as a catalyst and photocatalyst, and has attracted scientific interest for reactions of environmental and industrial importance. Nanosized TiO_2 photocatalyst is considered as the most effective material with respect to its nontoxicity, high photocatalytic activity and low price. TiO_2 film is so hydrophilic that the oily substances adsorbed on the surface can be easily removed. It is also possible to prevent dewing on the surface of window glass caused by the temperature difference between the inside and outside on a humid day. Nanosized TiO_2 thin films have been very attractive for various applications such as dye sensitized photovoltaic cells, memory cell capacitors, gas sensors, filter and antireflection coatings. In this study, Nanosized TiO_2 films could be obtained through dip-coating method using TiO_2 coating agent. The preparation of thin film on glass was carried out to investigate the effects of repeat coating and calcination temperature and time on the transmittance and photocatalytic activities. The TiO_2 film/UV light Photocatalytic degradation of methylene blue has been investigated by UV-Vis spectrophotometry. The obtained TiO_2 films were characterized using XRD, SEM, UV-Vis, and a probe reaction.