Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information

A facile and efficient preparation of anatase titania nanoparticles in micelle nanoreactors: Morphology, structure, and their high photocatalytic activity under UV light illumination

Reza Abazari [a], Ali Reza Mahjoub [a,*] and Soheila Sanati [b]

[a] *Department of Chemistry, Tarbiat Modares University, P.O. Box 14115-175, Tehran, Iran*

[b] *Department of Chemistry, Faculty of Basic Sciences, Azarbaijan Shahid Madani University, Tabriz, Iran*

E-mail address:

Corresponding author: mahjouba@modares.ac.ir (A. R. Mahjoub)

First auther: r.abazari@sina.kntu.ac.ir (R. Abazari)

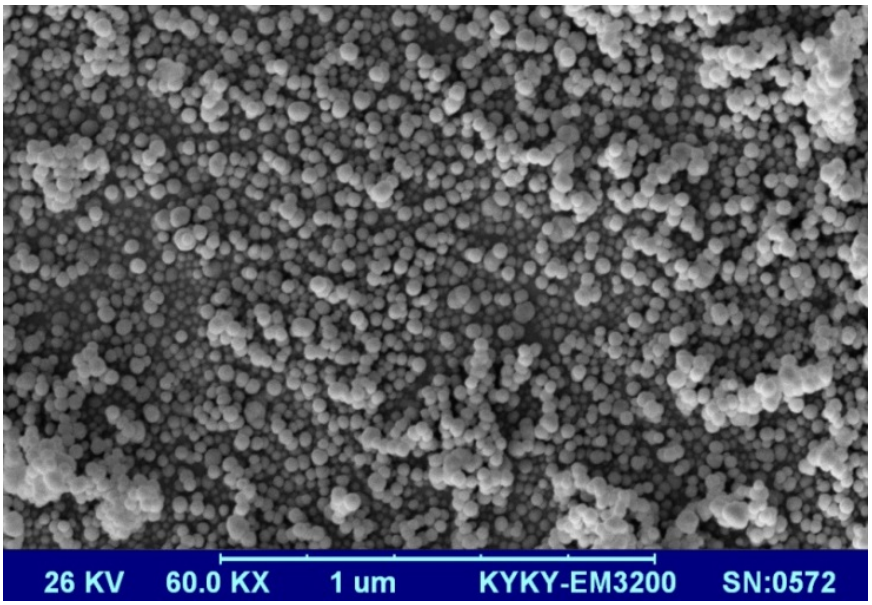

Figure S1. SEM image of spherical TiO_2 nanoparticles synthesized in micelle system.

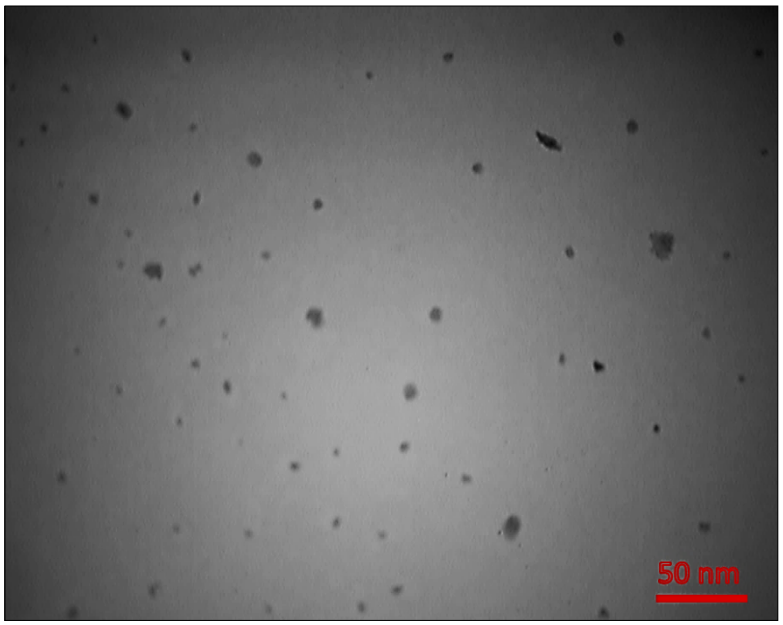

Figure S2. TEM image of titania nanoparticles formed in micelle nanoreactors**,** scale bar 50 nm.

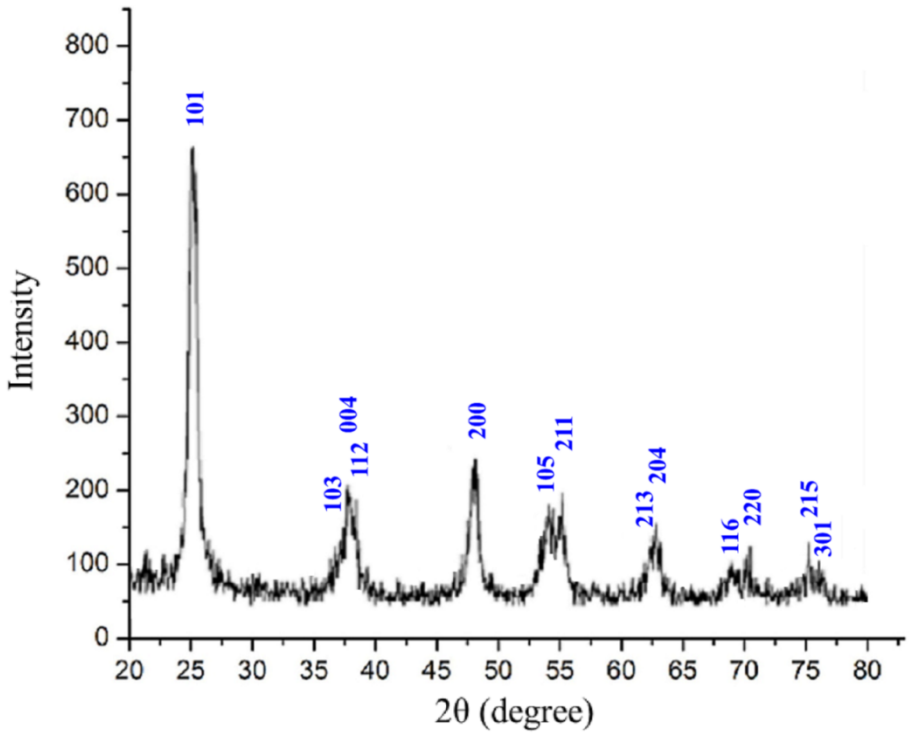

Figure S3. X–ray diffraction (XRD) spectrum of anatase titania nanoparticles calcined at 500 ℃ for 4 h in air.

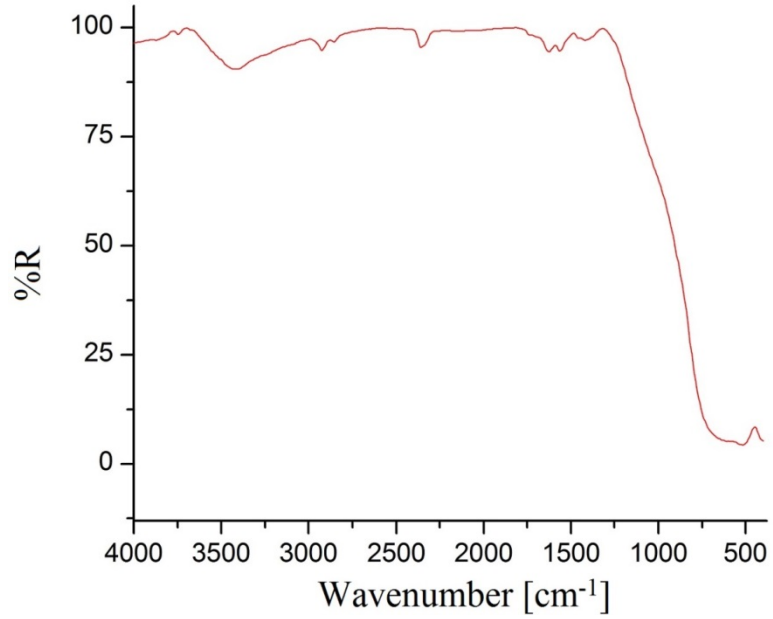

Figure S4. FT–IR spectra of the titania nanoparticles formed in water/CTAB/1-Hexanol/isooctane micelle nanoreactors.

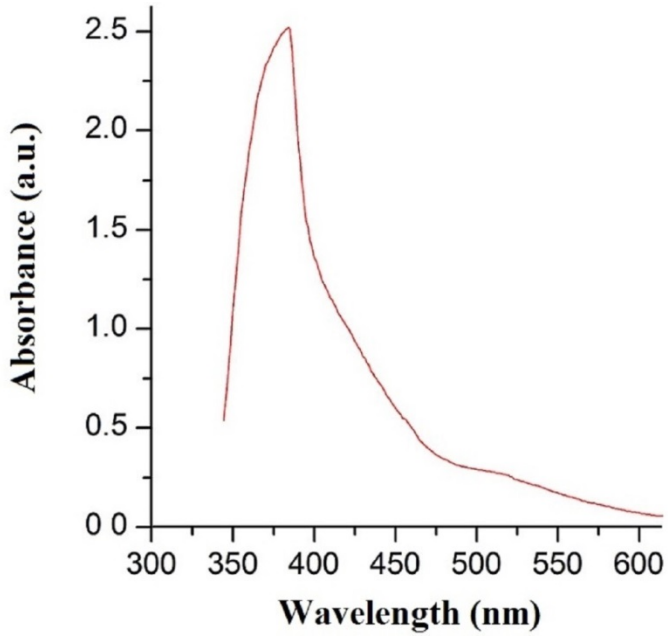

Figure S5. UV–Vis spectra of the titania nanoparticles produced in micelle nanoreactors.

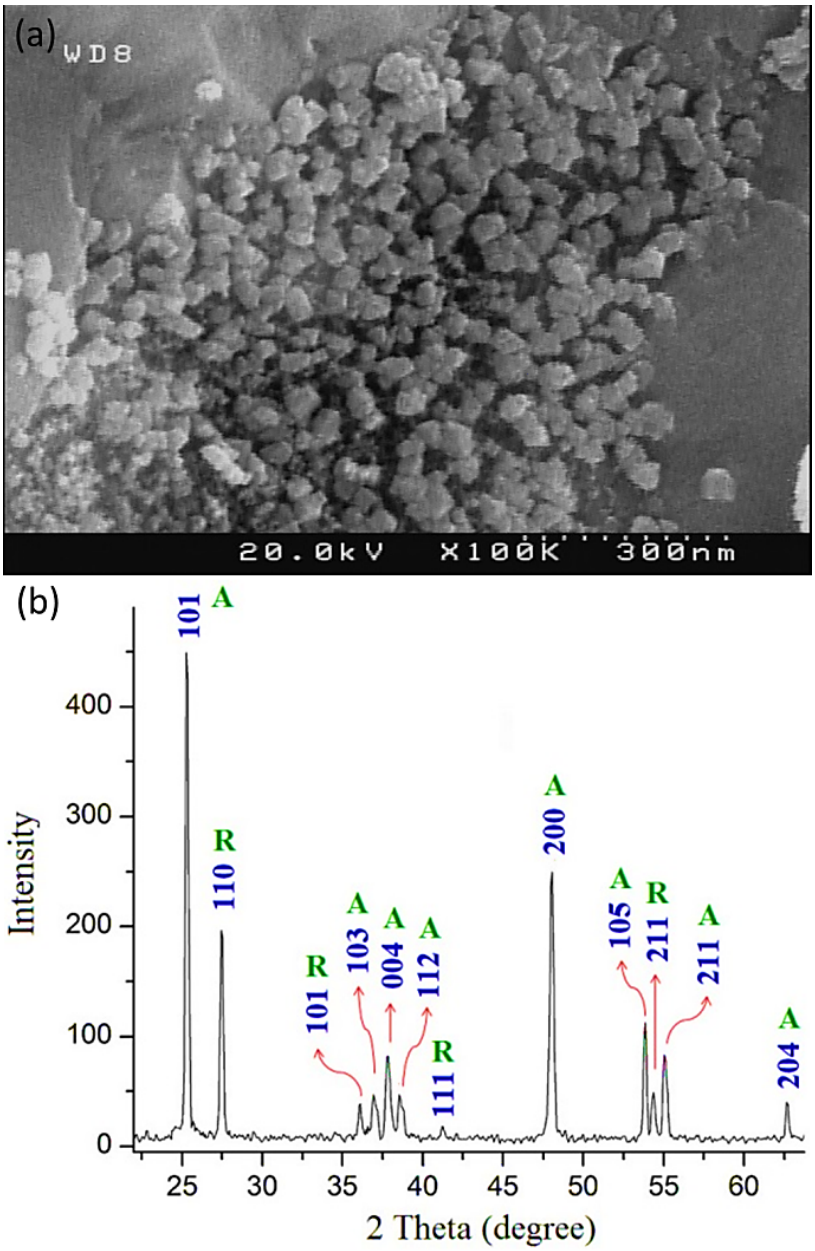

Figure S6. SEM image (a) and X-ray diffraction pattern (b) of the commercial P25 TiO_2 particles.

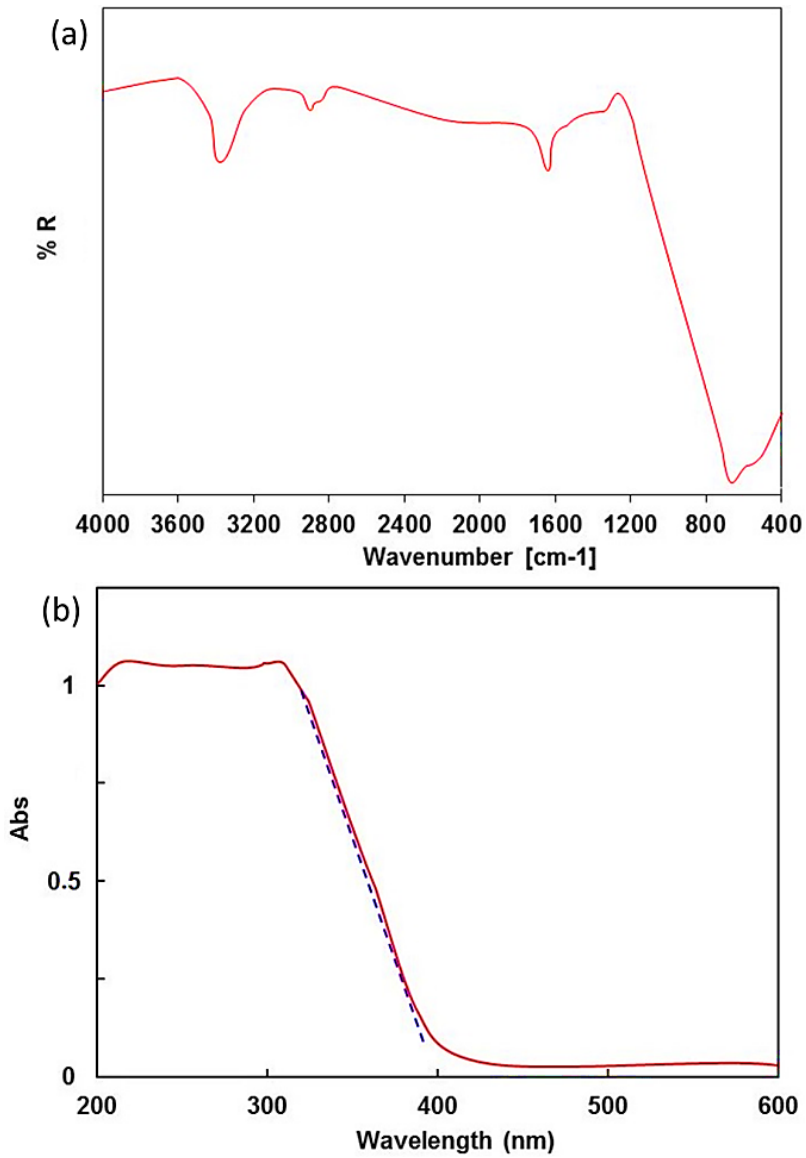

Figure S7. FT-IR spectra (a) and UV–Vis absorbance spectra (b) of the commercial P25 TiO_2 particles.

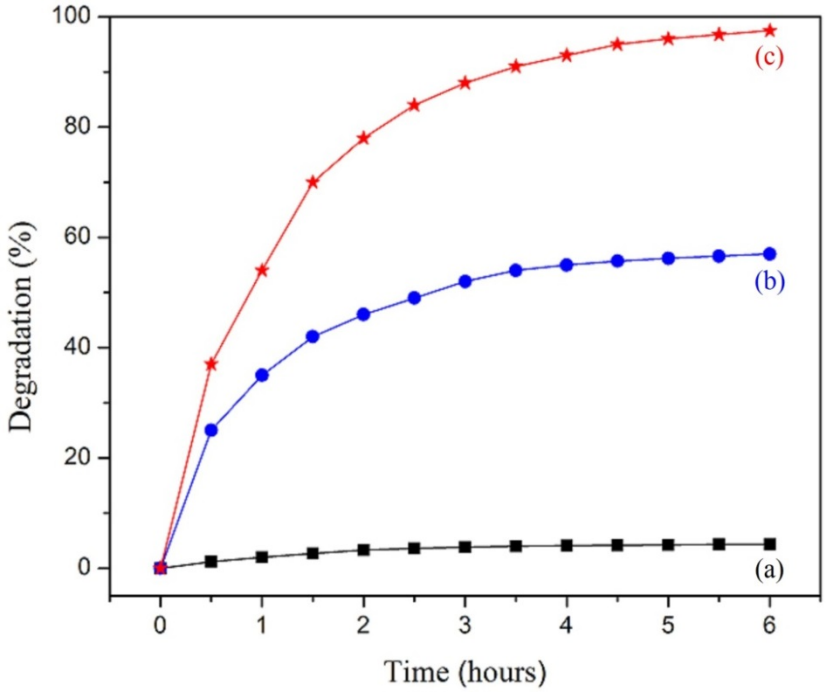

Figure S8. Photocatalytic efficiency of the MB dye degradation percentage curves under ultraviolet light irradiation: (a) without photocatalyst; (b) commercial P-25 TiO_2 powder; and (c) titania nanoparticles.

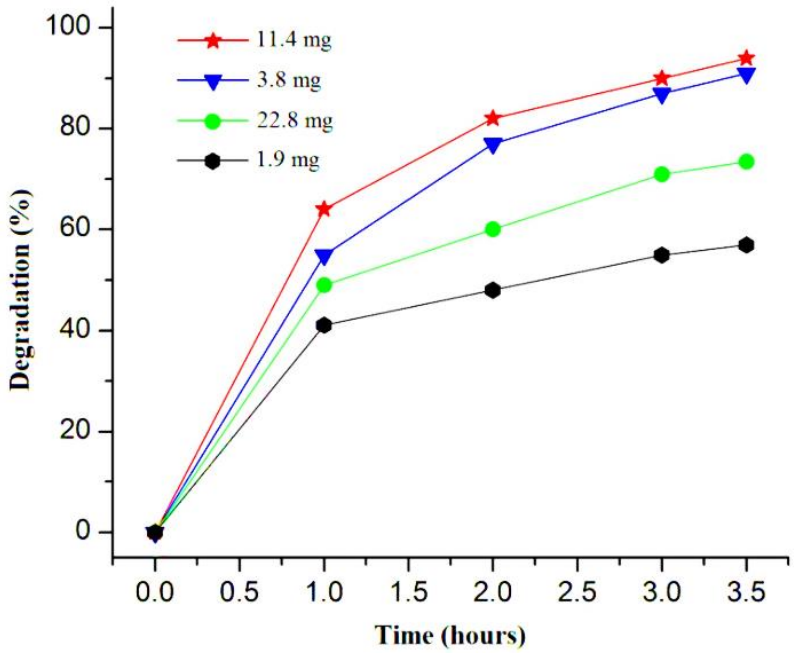

Figure S9. Effects of amount of the TiO_2 nanoparticles in the MB dye photocatalytic degradation.

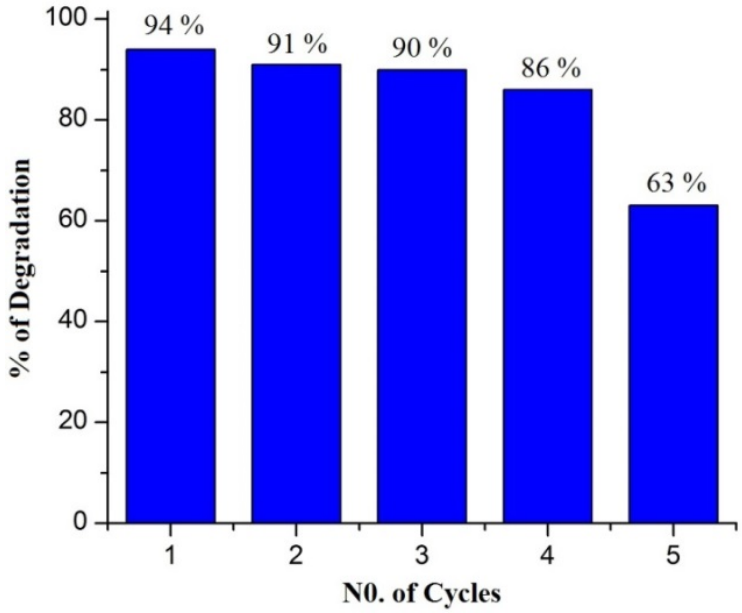

Figure S10. Recycle and reuse of TiO_2 nanoparticles for MB dye photocatalytic degradation.