Electronic Supplementary Material (ESI) for RSC Advances.

ASSOCIATED CONTENT

Supporting Information.

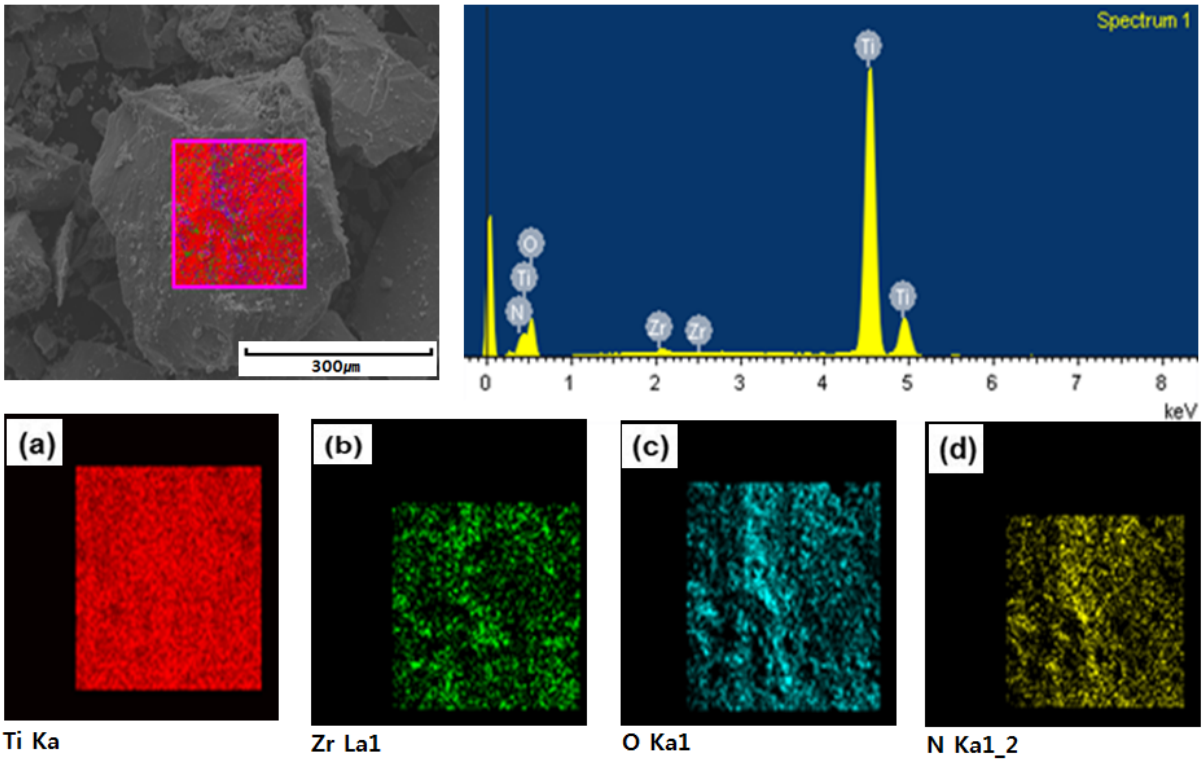

Figure S1. FE-SEM images of 0.01 M Zr/N-doped TiO_2 nanoparticles (a), EDS spectra (b), and elemental mapping for rectangular area indicated in (a) (c-f).

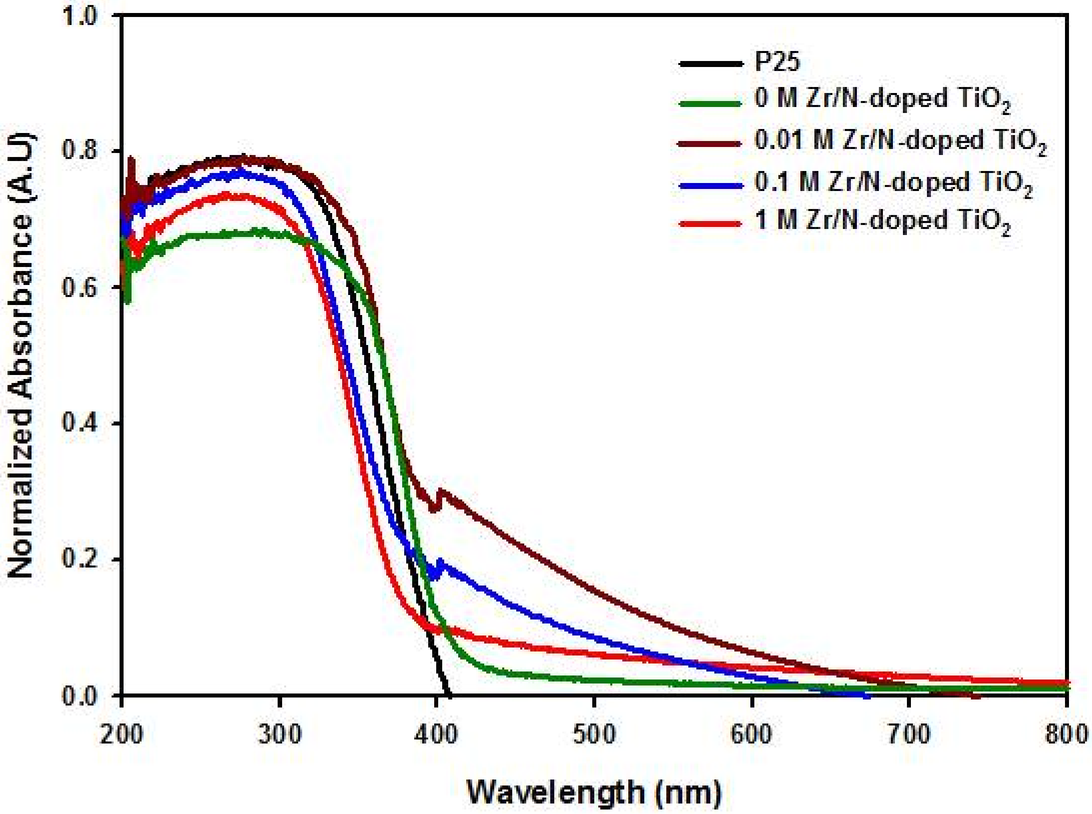

Figure S2. UV-vis absorption spectra of the P25 and various Zr/N-doped TiO_2 nanoparticles.

To compare the optical responses of the synthesized nanoparticles, their UV-vis absorption spectra were determined. Upon the introduction of Zr, a noticeable shift of the absorption spectra toward the visible-light region was observed. This indicates that the Zr/N-doped TiO_2 nanoparticles have strong optical responses under visible light irradiation.

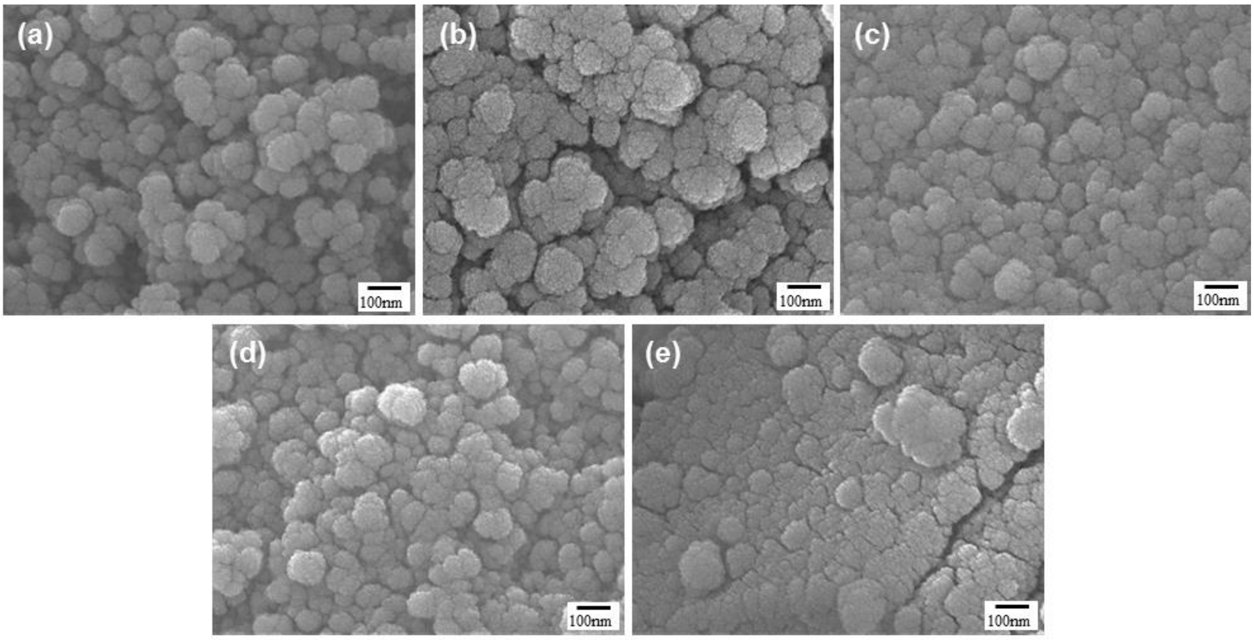

Figure S3. FE-SEM images of P25 nanoparticles (a) and the synthesized Zr/N-doped TiO_2 nanoparticles with Zr contents of 0 M (b), 0.01 M (c), 0.1 M (d), and 1 M (e).

The synthesized Zr/N-doped TiO_2 and P25 nanoparticles show highly aggregated shapes. The addition of Zr decreased the sizes of the nanoparticles.