

## Continuous synthesis of N-doped titania particles under subcritical and supercritical water conditions for photocatalytic reaction under visible light

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In this study, N-doped titania was continuously synthesized under supercritical and subcritical water conditions using titanium(IV)tetraisopropoxide (TTIP) and nitric acid as a titania precursor and N source, respectively. The synthesized N-doped titania was characterized by XRD, SEM, N<sub>2</sub>-adsorption, XPS and UV-Visible spectroscopy. XPS results showed that N-doped titania was successfully synthesized. According to the XRD patterns, the synthesized N-doped titania had pure anatase phase which is known to have higher photocatalytic activity than rutile phase. In the UV-Visible spectroscopy, the absorption edge of synthesized N-doped titania shifted into the visible light region compared with representative commercial titania P25. The photocatalytic activity of N-doped titania is discussed for the degradation of methyl orange.