

### Preparation and characterization of Fe and V doped titania nano-particles by flame spray pyrolysis

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Fe and V doped titania nanoparticles were synthesized by flame spray pyrolysis. The molar concentration of dopants was chosen as key variables while the 10nm of pure anatase titania particles were prepared in the gas phase. Fe and V doped titania less than 30nm in average diameter was synthesized through the experiment. As the Fe concentration increased without the addition of V, crystal structure of titania was partially converted from anatase to rutile. UV-Vis absorption spectra revealed a shift of the absorption band toward the visible frequencies at the high Fe concentration. With the addition of V into titanium while low concentration of Fe was maintained, blue shift of UV-Vis absorption spectra to the visible frequencies.