

**FIGURE S1-** Low-angle XRD of 0.05 TZ and 5 TZ.

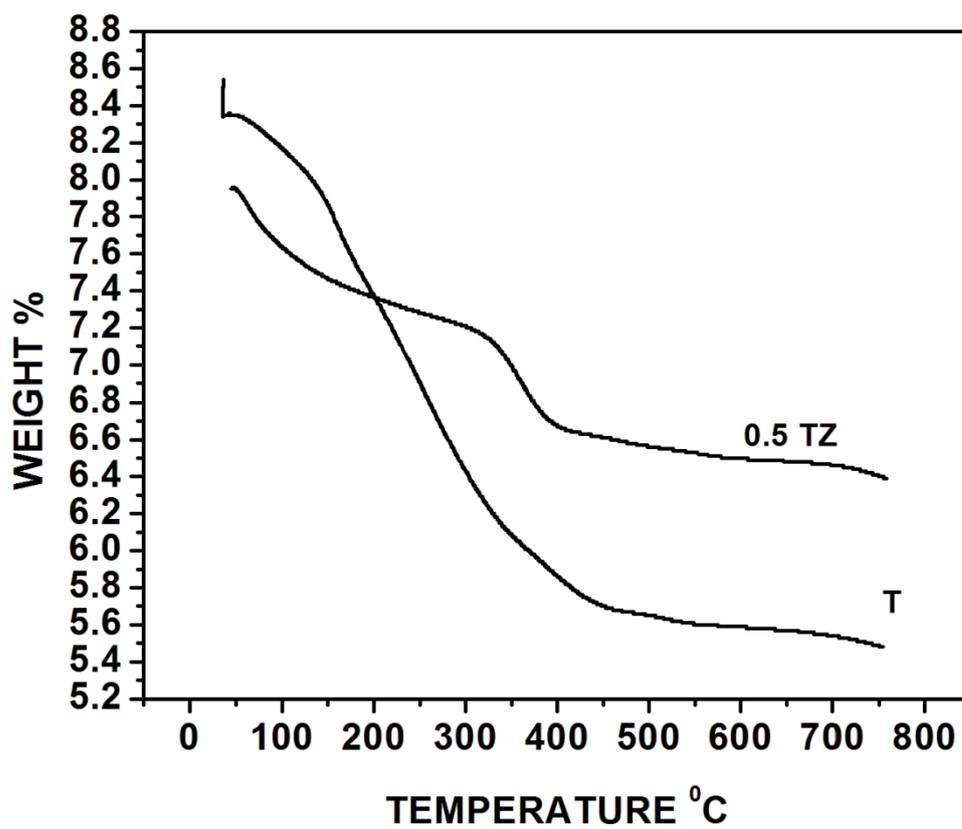
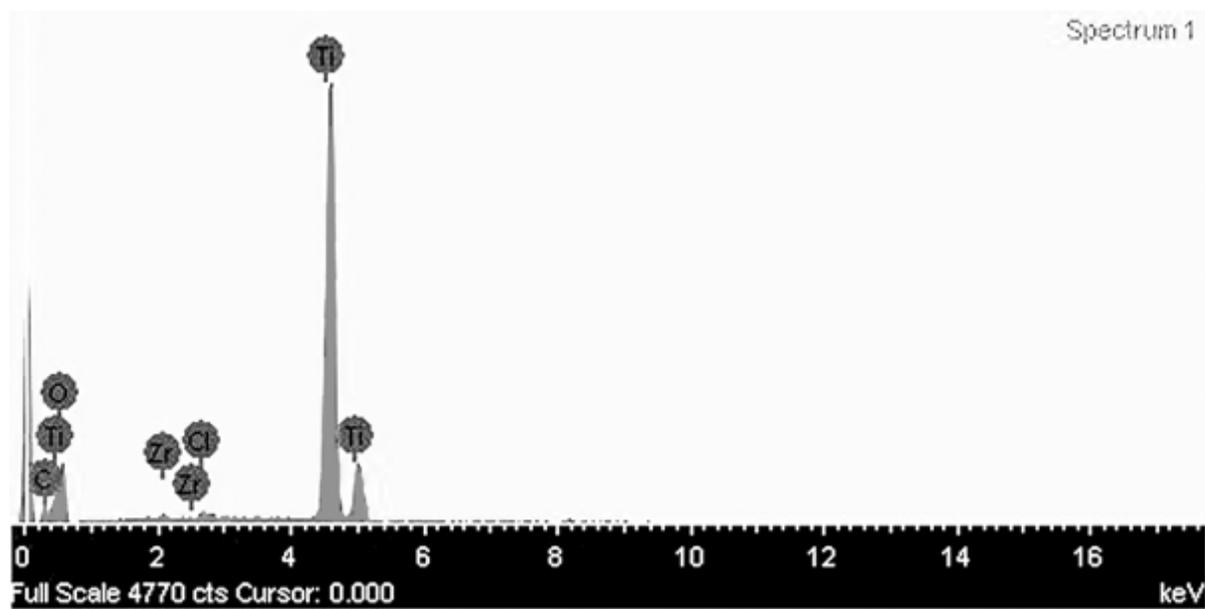
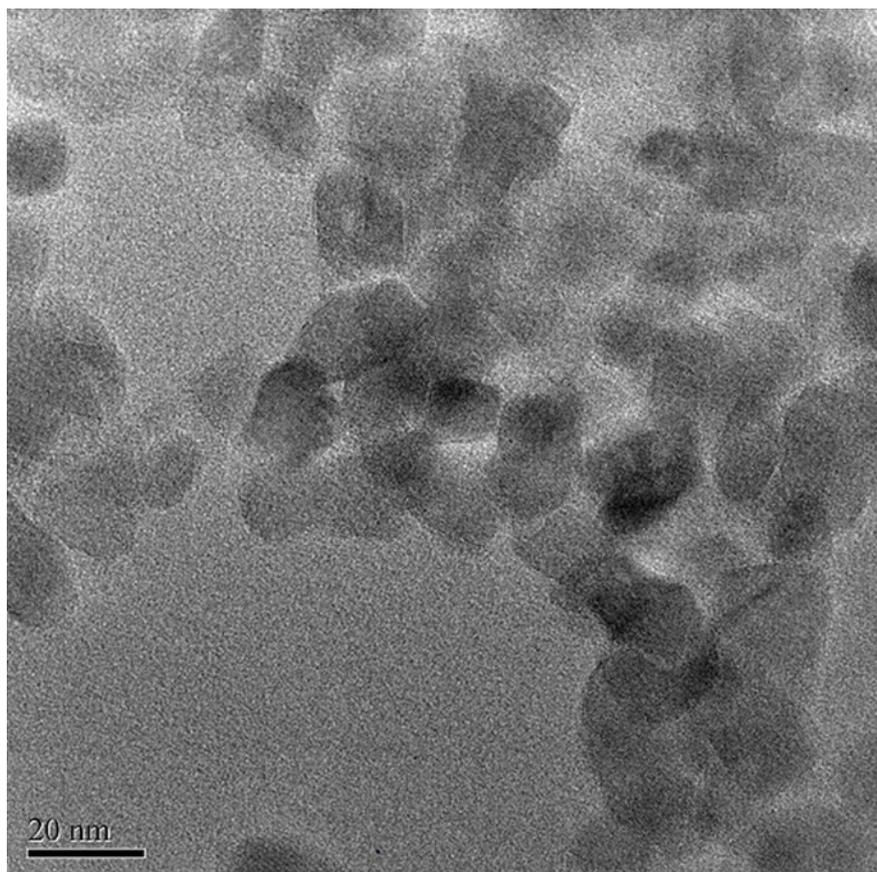


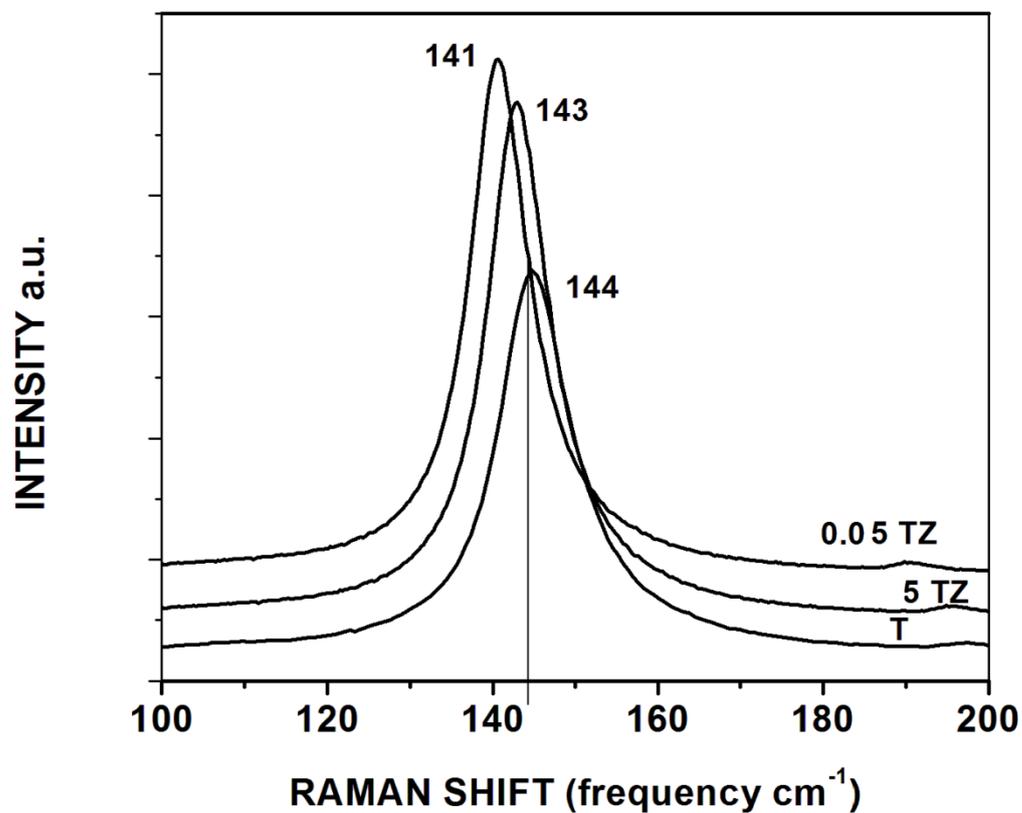
FIGURE S2- TGA of T and 0.5 TZ.



**FIGURE S3- EDX of 0.5 TZ titania**



**FIGURE S4- TEM image of 0.05 TZ**



FIGURES S5- Raman shift of 0.05 TZ, 5 TZ and T.

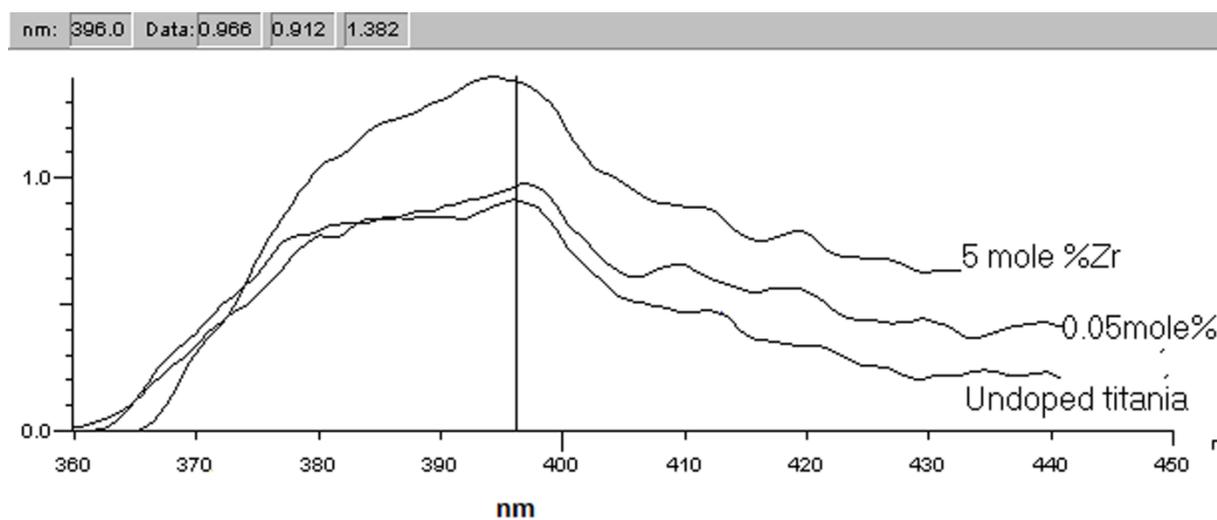
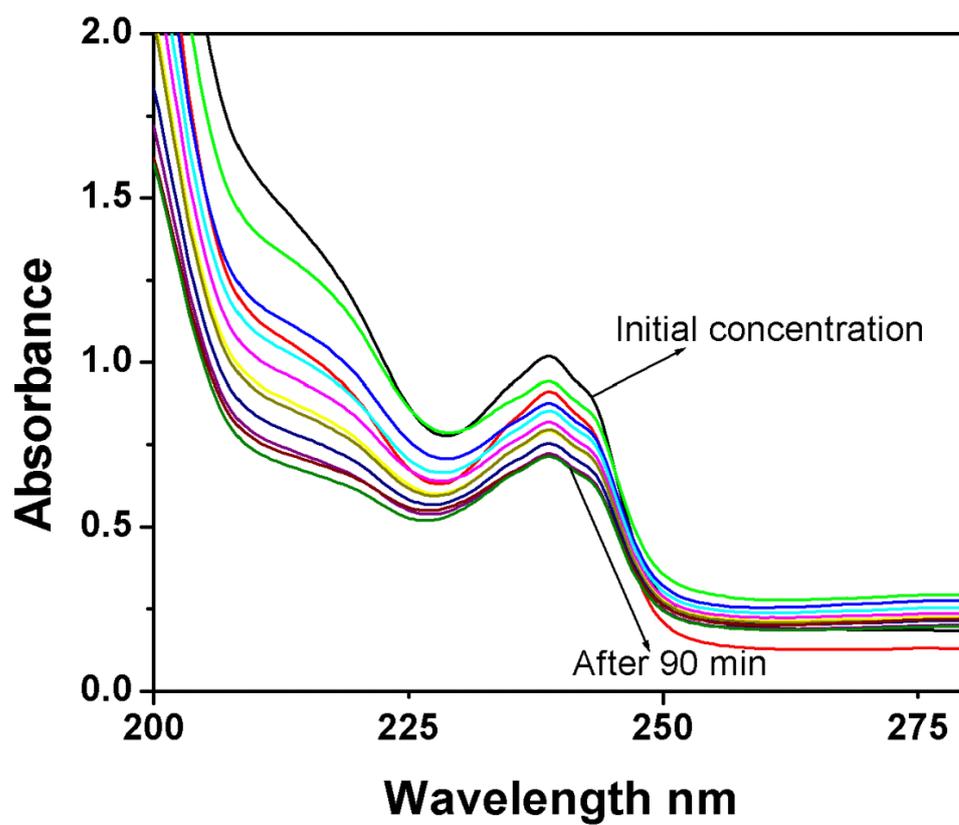


FIGURE S6- PL spectra of undoped and Zr-doped titania



**FIGURE S7-** Decomposition of quinalphos with 2TZ