

CHAPTER VI

CONCLUSIONS AND RECOMMENDATION

6.1 Conclusions

The conclusions of the present research are the following:

1. The photoactivity was increased with increasing of crystallite size. Because larger crystallite size have more surface defects, used as an active site on which the electron donor or acceptor is adsorbed.

2. Nanophase titania particles synthesized in toluene had higher photoactivity than nanophase titania particles synthesized in 1,4-BG. Because titania particles synthesized in toluene will have more surface defects than titania particles synthesized in 1,4-BG.

3. The growth rate of titania particles follow Arrhenius behavior.

4. Different heating time was found to produce different effects on the crystallite size depending on heating temperature. The higher the heating temperature, the greater is the effect of heating time on the crystallite size.

5. Different synthesized solvents and phase of crystal were found to produce not effects on the crystal growth with heating time.

6.2 Recommendation for the future study

From the previous conclusions, the following recommendations for the future studies are proposed.

1. Study of surface defect by ESR for determines Ti^{3+} on surface.
2. Study of other preparation methods of titania for compare with solvothermal method
3. Study of the effect of second elements on titania product.

4. Study of the second element modified titania crystal for the photocatalytic reaction and compare the change of crystallite size of the titania synthesized by precipitation mechanism and crystallization.



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