

Information on Doctoral thesis of Fellows Nguyen Manh Tien

1. Full name: Nguyen Manh Tien
2. Gender: male
3. Date of birth: 25/04/1965
4. Place of birth: Phu Tho
5. Admission decision number: 2259/SĐH December 07, 2006 of President of Vietnam National University, Hanoi.
6. Changes in academic process: None
7. Official thesis title: *"Preparation, studies on quality of TiO₂ nanosized from Ha Tinh ilmenite and investigates the possibilities of applications"*.
8. Major: Inorganic chemistry
9. Code: 62 44 25 01
10. Supervisors: Assoc. Prof. Dr. Sy Luong Ngo

Dr. Van Lien Than

11. Summary of the new findings of the thesis:

- The thesis studied systematically the factors affecting the process of the preparation, physical characteristics and photocatalytic activity of TiO₂ nanosized powders, have been prepared from Ha Tinh concentrated ilmenite by calcination and iron split method before decompose with sulfuric acid;
- The first time, TiO₂ nanosized materials have photocatalytic activity in the visible light of compact fluorescent light, have been prepared from concentrated inmenit Ha Tinh;
- First step, we evaluated the possibility of the practical application of TiO₂ nanosized photocatalytic materials, have been prepared from Ha Tinh concentrated ilmenite for ammonia decomposition process, to treatment ammonia in groundwater area Cao Xa - Lam Thao - Phu Tho. The results show the feasibility of the application of TiO₂ photocatalytic materials, have been prepared for the environmental treatment.

12. Practical applicability:

The results of the thesis are scientific bases for prepared process of TiO₂ nanosized, the materials have high photocatalytic activity to degrade of pollutants by using maximum the energy of visible light and sunlight, this make the fundamental for applying these products on treatment of aqueous – air environment,

disinfection... as to generate fresh energy source and environmental friendliness. This is a direction to apply basic research to practical applications from ilmenite ore domestic sources.

13. Further research directions:

- Keep studying to prepare of TiO_2 nanosized photocatalytic materials from Ha Tinh concentrated ilmenite by other methods fitting with conditions of Viet Nam.

- Keep extensively studying the catalytic activity of the products for treatment

of air environment, disinfection...

14. Thesis-related publications:

[1]. Sy Luong Ngo , Manh Tien Nguyen, Van Hung Nguyen (2009), "Research of grinding and disintegrating Ha Tinh concentrated ilmenite by sulfuric acid in lab-scal", *Journal of Chemistry T47 (2A)*, pp. 145 – 149.

[2]. Sy Luong Ngo, Manh Tien Nguyen, Minh Ngoc Tran (2009), "Research of sludge leaching after decomposition and disaggregating of iron from titanyl sulfate solution", *Journal of Chemistry T47 (2A)*, pp. 150 – 154 .

[3]. Sy Luong Ngo, Manh Tien Nguyen, Van Hung Nguyen, Van Lien Than, Minh Ngoc Tran (2009), "Study on the homogeneous hydrolyze of titanyl sulfat and urea solution to prepare TiO_2 nanosized powders", *Journal of Chemistry T47 (2A)*, pp. 155 - 160.

[4]. Manh Tien Nguyen, Sy Luong Ngo, (2011), "Study on the removal of iron from Ha Tinh concentrated ilmenite by calcination", *Journal of Chemistry T49 (3A)*, pp. 379 - 385.

[5]. Manh Tien Nguyen, Sy Luong Ngo, Mai Huynh Do (2011), "Study on the disintegration reduced ilmenite removed iron by sulfuric acid", *Journal of Chemistry T49 (3A)*, pp. 386 – 390.

[6]. Manh Tien Nguyen, Sy Luong Ngo (2011), "Study on the homogeneous hydrolyze of titanyl sulfate solution to prepare TiO_2 nanosized powders with photocatalytic activity", *Journal of Chemistry T49 (3A)*, pp. 391- 396.