INFORMATION ON DOCTORAL THESIS

1. Full name: Pham Thi Ha Thanh

2. Gender: Female

3. Date of birth: 30/08/1976

4. Place of birth: Hoa Binh

5. Number of admission decision: 5429/SĐH Dated: October 30, 2005 of President of Vietnam National University.

6. The changes in training process: No

7.Title of thesis: Researching the preparation of polymer nanocomposite/ bentonite-DMDOA

8. Major: Inorganic chemistry

9. Code: 62 44 25 01

10. Supervisors: Assoc.Prof. Dr. Nghiem Xuan Thung

11. Summary of the new result of the thesis:

- Determined suitable conditions to prepare organoclay from : Prolabo, French and BinhThuan, Vietnam bentonite with dimethyldioctadecylamonium chloride (DMDOA) in water.

- Determined suitable conditions to prepare oganolay from two bentonites with DMDOA in alcohol-water .

- Compared the properties of the organoclay which were prepared in the same conditions but differential environment. The results showed that value of d_{001} and value of loss mass of the organoclay which was prepared from Binh Thuan, Vietnam bentonite is as equivalent as Prolabo, France bentonite.

- Determined suitable conditions to prepare large amount of organoclay to reinforce polymers.

- Mechanical properties, heat resistance of epoxy coatings, polyester and natural rubber increased when we applied small amount of organoclay to them.

12. Practical applications:

The thesis has studied the reinforcement of organoclay on the mechanical properties, heat resistance to polymer materials: epoxy coatings, polyester and natural rubber. The results of the thesis showed

when we use small amounts of organoclay, mechanical properties and heat resistance of the reinforced material increase higher than original materials . This is a direction to apply basic research to practical applications.

13. Further research directions

- Keep studying the preparation of organoclay bentonite from several sources in Vietnam.

- Keep studying the mechanical properties of reinforced polymer materials using organoclay.

14. Thesis-related publications:

1. Pham Thi Ha Thanh, Nghiem Xuan Thung (2010), “Bentonite: natural resourses, technological process and application in Vietnam”, *Journal of Science and Technology (Thai Nguyen of univesity*) Vol 65(3), pp. 159-164.

2. Pham Thi Ha Thanh, Nghiem Xuan Thung, Le Thanh Son, Pham Trong Long, Nguyen Thi Ngoc Tu (2010), “investigation the synthesis organoclays from bentonite (France) and dimethyldioctadecylammonium chloride”, *Science and Technology* Vol. 48(2A), pp. 951-956.

3. Pham Thi Ha Thanh, Nghiem Xuan Thung, Đinh Van Trung (2010), “Study on the preparation of nanocoposite coating using epoxy resin and denatured clay”, *Journal of Chemical Analysis, Physics and Biology* Vol. 15(3), pp. 212-215.

4. Nghiem Xuan Thung, Le Thanh Son, Pham Thi Ha Thanh, Nguyen Thi Ngoc Tu (2010), “ Investingation on the synthesis organoclays from bentonite (Binh Thuan) and dimethyldioctadecylammonium chloride”, *Journal of Chemistry* Vol.48(4A), pp. 303-311.

5. Nghiem Xuan Thung, Le Thanh Son, Pham Thi Ha Thanh, Đinh Van Trung (2010), “Preparation of composite coating using epoxy resin and modified Binh Thuan organoclay”, *Journal of Chemistry* Vol.48(4A), pp. 312-318

6. Pham Thi Ha Thanh, Nghiem Xuan Thung, Nguyen Thi Ngoc Tu, Tu Đuc Ha (2011), “Preparing organoclay from bentonite Prolabo – French and Binh Thuan – Vietnam)”, *Journal of Chemistry* Vol.49(2ABC), pp. 619 -623.

7. Pham Thi Ha Thanh, Ngo Ke The, Nghiem Xuan Thung, Tran Thi Tu Ha (2011), “The survey reinforced the ability of organic bentonite clay (Prolabo - France and Binh Thuan - Vietnam) to some mechanical properties of epoxy coatings”, *Journal of Chemistry* Vol.49(2ABC), pp. 613 -618.

8. Pham Thi Ha Thanh, Ngo Ke The, Nghiem Xuan Thung, Nguyen Thi Ngoc Tu (2011), “Assessment of the ability of processing organocly from Binh Thuan bentonite”, *Journal of Chemistry* Vol.49(3A), pp. 133 -138.

9. Pham Thi Ha Thanh, Ngo Ke The, Nghiem Xuan Thung (2011), “Investigate process of preparing organoclay from bentonite in water-alcohol solution”, *Journal of Chemistry* Vol. 49(3A), pp. 143-148.