SUMMARY INFORMATION OF NEW CONTRIBUTIONS OF THE THESIS

Name of thesis: **Study on synthesis, characterization and evaluation of photocatalytic activity of nano TiO_2/(CNT, ZnO, SiO_2)**

Major: **Theoretical Chemistry and Physical Chemistry** Code: 9.44.01.19

Name of PhD candidate: **Pham Minh Tu**

Instructor's full name: **Prof.Dr. Vu Thi Thu Ha**

Training base: Vietnam Institute of Industrial chemistry

Summary of the new contributions of the thesis:

- Systematically studied the process of synthesizing TiO_2 nanotubes from commercial TiO_2 by one-step thermodynamic method and proposed the formation mechanism of the tube. This is a simple and effective method, allowing the synthesis of TiO_2 nanotubes of equal quality;

- Successfully synthesized catalytic material combination on the basis of TiO_2 nanotubes and MWCNTs carbon nanotubes and proved the effect of "synergistic" - synergie between the two components MWCNTs and TNTs, reducing the recombination between photoelectron electrons and photoelectric hole;

- Determined the weight ratio of MWCNTs / TNTs suitable for MWCNTs / TNTs catalyst system by 1/1. Catalytic system has high photochemical activity and stable activity in H2S oxidation. At the same time, this catalyst also has high sulfur selectivity, reaching 100% in the first 200 minutes of the reaction;

- Systematically studied the condition of synthesizing catalytic system based on sol TiO_2/SiO_2 by dip-coating method. The catalyst is highly active, opening the direction of photochemical application on the basis of TiO_2 sol nano in self-cleaning surface.

- Systematically studied parameters affecting the activity of oxidation photochemical catalysts based on ZnO/TNTs, on continuous reaction equipment, catalysts which are capable of removing LAS in wastewater up to 76%.

The research results have been published in ISI international and local magazines.

Ha Noi, dd month year

Instructor of scientific researching **PhD candidate**

Prof.Dr.Vu Thi Thu Ha **Pham Minh Tu**