

Information on Doctoral thesis

1. Full name: Hoang Thi Huong Hue

2. Sex: Female

3. Date of birth: 23/02/1974

4. Place of birth: Nam Dinh

5. Admission decision number: 2385/ QĐ – SĐH, date 29/06/ 2007 of the President of Vietnam National University Hanoi

6. Changes in academic process: None

7. Official thesis title: "Studies on preparation, properties and applications of nanosize CuO/CeO₂ mixed oxide"

8. Major: Inorganic Chemistry

9. Code: 60 44 25 01

10. Supervisors: Assoc. Prof. Dr. Nguyen Dinh Bang

11. Summary of the new findings of the thesis:

Studied systematically the effects of some factors on preparation of CuO/CeO₂ mixed oxide by the four methods: coprecipitation, combustion, sol-gel and impregnation.

The first preparation of CuO/CeO₂ mixed oxide by combustion method with the surfactant PVA.

Determined the types of existence of CuO in CuO/CeO₂ mixed oxide by the method H₂ temperature-programmed reduction (H₂ – TPR).

Calculated density of oxygen vacancy in CuO/CeO₂ mixed oxide by handling Raman spectra based on the Gaussian function.

12. Practical applicability:

Studies on catalytic activities of CuO/CeO₂ mixed oxide in oxidation reactions of phenol and CO were performed. The results of these studies show potential applications of the mixed oxide in exhaust gases and volatile organic substances treatment.

13. Further research directions:

Continue studying preparation of CuO/CeO₂ mixed oxide by other methods, which are appropriate for conditions in Vietnam.

Continue studying catalytic activities of the obtained mixed oxide in other reactions: oxidations of hydrocarbons; reductions of NO, SO_x...

14. Thesis-related publications:

[1]. Nguyen Dinh Bang, **Hoang Thi Huong Hue** (2009), "Synthesis of nano-sized CuO-CeO₂ mixed oxide by co-precipitation method", *Journal of Chemistry* 47(2A), pp. 404-407.

[2]. Nguyen Dinh Bang, **Hoang Thi Huong Hue** (2009), "Synthesis of CuO, CeO₂ and CuO-CeO₂ catalysts for oxidation of phenol", *Journal of Analytical Sciences* 14(4), pp. 81-85.

[3]. Nguyen Dinh Bang, **Hoang Thi Huong Hue** (2009), "Synthesis of nano-particles of CeO₂ by auto-combustion method", *Journal of Chemistry* 47 (3), pp. 385-387.

[4]. Nguyen Dinh Bang, **Hoang Thi Huong Hue**, Pham Viet Hung (2009), "Influence of synthesis conditions on CuO-CeO₂ catalysts for the treatment of phenol by the combustion method", *Journal of Analytical Sciences* 16(1), pp. 72-77.

[5]. Nguyen Dinh Bang, **Hoang Thi Huong Hue**, Tran Thi Du (2011), Preparation CuO-CeO₂ catalysts for the treatment of phenol by the sol-gel method", *Journal of Analytical Sciences* 16(2), pp. 44-49.

[6]. **Hoang Thi Huong Hue**, Nguyen Dinh Bang (2011), "Preparation and characterization of nanosized CuO-CeO₂ mixed oxide with high surface area", *e- Journal of Surface Science and Nanotechnology* 9, pp. 463-465.

[7]. **Hoang Thi Huong Hue**, Nguyen Dinh Bang (2011), "Synthesis of nanosized CuO-CeO₂ mixed oxide by citrate sol-gel method", *Vietnam Journal of Chemistry* 49(3), pp. 385-388.