

SUMMARY OF MAIN CONTRIBUTIONS OF THE DISSERTATION

Dissertation's title: *Kinetic study of DDT decomposition process by electrochemical and chemical methods*

Major: **Theoretical and physical chemistry**

Code: **62 44 01 19**

PhD student: **Tran Quang Thien**

Academic term: **2012 – 2016.**

Supervisor: **Ass. Prof. Le Xuan Que**

Educational Institution: **Vietnam Institute of Industrial Chemistry**

Main contributions of the study:

1. The study has examined and evaluated the decomposition process of DDT by electrochemical method (CV) in a solvent consisting of ethanol and electrolyte CaCl_2 . By differential technique, 3 electrochemical reactions happened in the process are identified at three potentials: -0.46V (DDT decomposition), -1.32V (DDD decomposition), and -1.58V ; the limited potential E_{gh} of each reaction is chosen as the static potentials; and the results of CV measurement is considered as the scientific base to choose the appropriate polarized potential PS.

2. The potentiostatic polarization method used is highly effective in decomposing DDT.

3. The study has identified the kinetics of DDT decomposition reaction using iron powder in the laboratory: $\ln C_{\text{DDT}} = -0,456.t + 4,677$. This is applied to decompose DDT extracted from contaminated soil in Hon Tro, which proves to be highly effective, reducing more than 90% of DDT content in the extracted solution.

These are new findings that are meaningful both theoretically and practically. The research results have been published on some specialized journals: Journal of Chemistry (03 articles), Journal of Analytical Sciences (02 papers), Journal of Chemistry and Applications (02 papers).

Hanoi, March 30, 2018

Supervisor

PhD Student

Ass. Prof. Le Xuan Que

Tran Quang Thien