

THESIS INFORMATION

Title: Monitoring endocrine disrupting compounds (EDCs) in Sai Gon and Dong Nai river basin and removal of EDCs using ozonation and powdered activated carbon – microfiltration hybrid process.

Major: Environmental Engineering

Major code: 62 52 03 20

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Scientific supervisors: 1. Associate Prof. Dr. Nguyen Phuoc Dan
2. Associate Prof. Dr. Nguyen Tan Phong

Training institute: Ho Chi Minh City University of Technology - VNU-HCM

 **The aim of the thesis:**

The specific objectives of this Ph.D. thesis were:

Objective (1): To monitor the EDCs levels in surface water and pollution point sources in Sai Gon and Dong Nai river basin;

Objective (2): To determine correlation among EDCs and physico-chemical parameters including dissolved organic concentration (DOC), total nitrogen (TN), dissolved oxygen (DO), electrical conductivity (EC), pH, ammonia, total phosphorus (TP) and turbidity;

Objective (3): To determine appropriate operating conditions for removal of the target EDCs from monitoring results of EDCs in the Sai Gon - Dong Nai river basin with concentration that affect aquatic organisms.



Contributions of this thesis

- ✓ The EDCs levels and total estrogen equivalent (EEQ) in Sai Gon and Dong Nai river basin have been identified. In addition, the correlations among EDCs and physico-chemical parameters (DOC, TN, DO, EC, N-NH₄⁺, TP, pH and turbidity) were confirmed in this study.
- ✓ The appropriate operating parameters for removal of target EDCs using ozonation and powdered activated carbon – microfiltration hybrid process were found.
- ✓ Removal efficiency and by-products of ozonation that form during the oxidation of NPEs in Saigon river were demonstrated in this thesis.
- ✓ For powdered activated carbon – microfiltration hybrid process, PAC deposition on the membrane surface has been significantly improved using diffused aeration system combined deflector plates.

Scientific supervisors

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