

NEW CONTRIBUTIONS OF DOCTORAL THESIS

- 1. Title of thesis: Advanced domestic wastewater treatment technology by self-backwashing filter based on floating media**
- 2. Specialty: Infrastructure engineering**
- 3. Code: 62.58.02.10**
- 4. Scientific instructors: Assoc. Prof.PhD. Tran Thanh Son; Assoc. Prof.PhD. Vu Van Hieu**
- 5. Full name of PhD Student: Pham Van Duong**

New contributions of the thesis

1. The research results showed that self -backwashing filter based on floating media could be applied to the traditional wastewater treatment plant as advanced treatment unite after biological secondary treatment that effectively works both for mechanical and biological processes.

2. Experimentally, kinetic and technological parameters of advanced wastewater treatment filtration after biological secondary treatment were found:

- Mechanical filtration process: SS breakout coefficient (a) and cohesion coefficient (b) corresponding to filtration rate: 5-10m/h

- Biological filtration process: First order reaction rate constants of COD, BOD, NH_4^+ , total nitrogen removals: $k_{\text{BOD}} = 0.08$; $k_{\text{COD}} = 0.075$; $k_{\text{NH}_4^+} = 0.082$; $k_{\text{TN}} = 0.042$.

3. Calculation method for designing self-backwashing filter based on floating media, applied for advanced wastewater treatment after biological secondary treatment.

Scientific instructors

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