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Authors: Dan Guo, Hualin Wang, Pengbo Fu, Yuan Huang, Yi Liu, Wenjie Lv, Fei Wang

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### ACCEPTED MANUSCRIPT

# **Diatomite Precoat Filtration for Wastewater Treatment: Filtration Performance and Pollution Mechanisms**

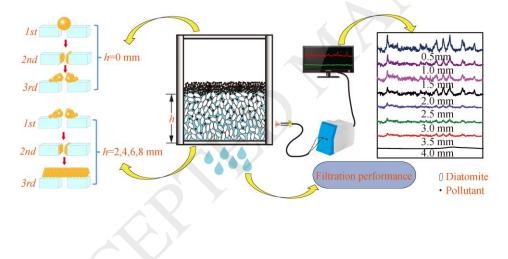
Dan Guo, Hualin Wang\*, Pengbo Fu, Yuan Huang, Yi Liu, Wenjie Lv, Fei Wang

State Environmental Protection Key Laboratory of Environmental Risk Assessment and Control on Chemical

Process, East China University of Science and Technology, Shanghai, China, 200237,

PR China

Graphical abstract



#### Highlights

- Fouling process was clarified from time perspective by fitting fouling models at different stage.
- Pollutant transport was characterized from space perspective via Surface Enhanced Raman Scattering (SERS).
- Permeate flux increased from 11.1 to 16.53 L/m<sup>2</sup>h; fouling grade decreased from 41.8% to 4.1%.
- The advantages of diatomite precoat filtration were demonstrated.

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