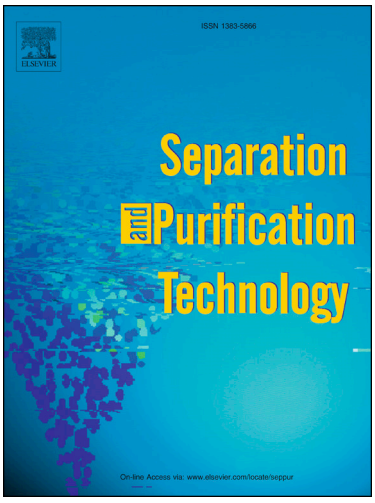
Accepted Manuscript




# Degradation of Chlortetracycline Using Nano Micro-Electrolysis Materials with Loading Copper

Yuzhi Liu, Chen Wang, Zhenying Sui, Donglei Zou

PII: S1383-5866(17)32024-5
DOI: https://doi.org/10.1016/j.seppur.2018.03.064
Reference: SEPPUR 14484

To appear in: *Separation and Purification Technology*

Received Date: 26 June 2017
Revised Date: 21 December 2017
Accepted Date: 27 March 2018

Please cite this article as: Y. Liu, C. Wang, Z. Sui, D. Zou, Degradation of Chlortetracycline Using Nano Micro-Electrolysis Materials with Loading Copper, *Separation and Purification Technology* (2018), doi: https://doi.org/10.1016/j.seppur.2018.03.064

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

# Degradation of Chlortetracycline Using Nano Micro-Electrolysis Materials with Loading Copper

*Yuzhi Liu, Chen Wang, Zhenying Sui, Donglei Zou*[*]

*(Key Lab of Groundwater Resources and Environment, Ministry of Education, Jilin University, Changchun 130021, P. R. China).*

[*] *Corresponding author.*

*E-mail address: zoudl@jlu.edu.cn （D Zou）.*

## ABSTRACT

Nano micro-electrolysis materials with loading copper were synthesized by a modified reduction method under inert atmosphere and characterized with XRD, BET, SEM and SEM mapping. The effects of nano micro-electrolysis material types, initial pH, nano micro-electrolysis material with loading copper dosage, and initial chlortetracycline concentration on chlortetracycline removal were evaluated. Batch studies results indicated that the maximum removal and total organic carbon removal of chlortetracycline were found to be 99.1% and 70.7% under the optimal conditions of m=0.5g/L, pH=3.6 and $C_0$=50 mg/L. The degradation mechanisms and kinetics were investigated, and the two constants model was discoverd to be reasonable fit for the experimental data kinetic model with initial chlortetracycline as variables. These results demonstrated that nano micro-electrolysis materials with loading copper could potentially be used for chlortetracycline removal.

Keyword: Nano micro-electrolysis, Chlortetracycline, Degradation mechanism

Download English Version:

https://daneshyari.com/en/article/7043682

Download Persian Version:

https://daneshyari.com/article/7043682

Daneshyari.com