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Sveučilište u Zagrebu
Fakultet kemijskog
inženjerstva i tehnologije



Kolegij: Primjena ekotoksikologije

Upute za pisanje seminarskog rada i izradu prezentacija

Akademska godina 2019./2020.

Doc.dr. sc. Dajana Kučić Grgić

BODOVNA TABLICA

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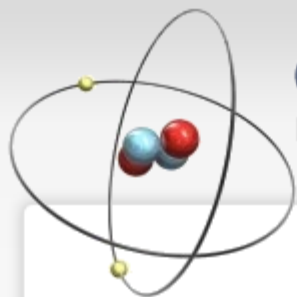
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 izobrazba

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*p*retraga časopisa

*p*regled baza podataka po područjima

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- Bioresource Technology (3,213)
- Water Research (1,925)
- Chemical Engineering Journal (1,435)

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Reduction of adsorbed dyes content in the discharged **sludge** coming from an industrial textile **wastewater** treatment plant using aerobic **activated sludge** process

Journal of Environmental Management, Volume 223, 1 October 2018, Pages 936-946

Maroua Haddad, Sami Abid, Moktar Hamdi, Hassib Bouallagui

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A combined **activated sludge**-filtration-ozonation process for abattoir **wastewater** treatment

Journal of Water Process Engineering, Volume 25, October 2018, Pages 157-163

Pello Alfonso-Muniozguren, Judy Lee, Madeleine Bussemaker, Ralph Chadeesingh, ... Devendra Saroj

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Relationship between modification of **activated sludge** **wastewater** treatment and changes in antibiotic resistance of bacteria

Science of The Total Environment, Volume 639, 15 October 2018, Pages 304-315

Ewa Korzeniewska, Monika Harnisz

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Effects of 4-chlorophenol **wastewater** treatment on **sludge** acute toxicity, microbial diversity and functional genes expression in an **activated sludge** process

Bioresource Technology, Volume 265, October 2018, Pages 39-44

Jianguo Zhao, Yahe Li, Yu Li, Zeya Yu, Xiurong Chen

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Study on the bacterial and archaeal community structure and diversity of **activated sludge** from three **wastewater** treatment plants

Marine Pollution Bulletin, Volume 135, October 2018, Pages 801-807

Hui Qin, Bin Ji, Shufei Zhang, Zehua Kong

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Characterization of Aerobic Granular **Sludge** used for the Treatment of Petroleum **Wastewater**

Bioresource Technology, *In press, accepted manuscript*, Available online 29 September 2018

Chunmao Chen, Jie Ming, Brandon A. Yoza, Jiahao Liang, ... Qinghong Wang

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Saudi Journal of Biological Sciences xxx (2018) xxx-xxx

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Original article

Inhibiting effect of textile wastewater on the activity of sludge from the biological treatment process of the activated sludge plant

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ABSTRACT

Textile industry represents an important source of toxic substances rejected in environment. Indeed, effluent of these industries contains dyes and chemicals. They are rejected in environment without any treatment. The aim of this work is to evaluate ecotoxicological effect of industrial textile effluents on the sludge harvested from activated sludge treatment plant of Marrakech city (Morocco). For this, we are interested in determining the inhibition condition that corresponds to 50% decrease of bacterial activity in sludge. Obtained results showed that inhibition percentage of bacterial activity depends narrowly on contact time and on added effluent volume, until a limit concentration where there is no degradation of substratum. In fact, substratum degradation speed shows about 65 times decrease when 80% (v/v) of textile wastewater is added, in comparison with the controlled one. Consequently the inhibition constant (Ki) that corresponds to 50% of bacterial inhibition activity is estimated to 0.65 mg l⁻¹ of dye. These studies confirm a real ecotoxicological risk of these effluents. Therefore, a treatment is mandatory before their rejection in environment.

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1. Introduction

Approximately 1.84 billion metric tonnes of textile-dyeing wastewater was produced in the Chinese in 2015 according to the China Environment Statistical Yearbook (2015).

The Moroccan industrial sector is composed of 6070 units in which 31% are textile and leather industries. These industries consume significant quantities of dye and chemicals products in the various manufacturing synopsis (Khandegar and Saroha, 2013; Prigione et al., 2008). Those substances are known for their high toxicity rate (Jieying et al., 2017).

Enormous quantities of wastewater characterized by high concentrations of chemical oxygen demand (COD), suspended solids, heavy metals and salts are produced in the textile industries (Yurtsever et al., 2015). The highly variable nature of textile wastewater is due to the use of multiple processes such as dyeing, finishing, sizing, several washing, and rinsing cycles (Khandegar and Saroha, 2013; Prigione et al., 2008; Sabinkaya et al., 2008).

Due to their high fixation rate compared to other types of dyes, the annual worldwide use of reactive dyes reached an amount of 178,000 tons in 2004 (Philips, 1996). Reactive dyes are the most widely used with a market share of 60–70% (Çinar et al., 2008; Sen and Demirer, 2003a) and about 20–50% of the applied dyes remain in the aqueous phase during dyeing which eventually leads to the colorization of the flow. In addition to the dyes, several auxiliary chemicals are used in the maturation processes and the wastewater produced is quite complex and variable in characteristics (Sen, 2003b; Spagni et al., 2012). These reactive dye molecules,

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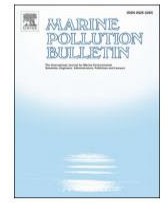
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Marine Pollution Bulletin

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Study on the bacterial and archaeal community structure and diversity of activated sludge from three wastewater treatment plants



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Wastewater treatment

ABSTRACT

In this study, the bacterial and archaeal communities along with their functions of activated sludge from three wastewater treatment plants were investigated by Illumina MiSeq Platform. The treatment processes were modified A/A/O, DE oxidation ditch and pre-anaerobic carousel oxidation ditch, respectively. The taxonomic analyses showed that *Proteobacteria* was the predominant bacterial phylum, and *Nitrosospira* was the dominant nitrification genus. *Candidatus Accumulibacter* was abundant in DE oxidation ditch process, and the main archaea communities were methanogens-like species which had the capability to anaerobic ammonia oxidation. The

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- SVIBANJ – prezentiranje rada / korigirani rad do 25.05.2020.
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Popis tema i studenata

IME I PREZIME	NASLOV TEME
Čačko, Pančić, Zokić	<p><i>Aditivi u plastici. Potencijalni štetni učinci na ekosustav.</i> (Naglasak na testove ekotoksičnosti (uključiti ftalate, BPA i dr.; unutar BPA obraditi endokrine disruptore)</p>
Delić, Duhaček, Hamilton, Krmek	<p><i>Mikro i nanoplastika u okolišu.</i> (Naglasak na testove ekotoksičnosti; alge, zebrice, <i>Daphnia magna</i>, crvi), fitotoksičnost; da li je nanoplastika toksičnija od mikroplastike?)</p>
Bingula, Liber, Sirovina	<p><i>Štetni učinci pesticida na ekosustav.</i> (Naglasak na ekotoksičnost (alge, crvi, zebrice, <i>Vibrio fischeri</i>, <i>Pseudomonas putida</i> i dr.) i fitotoksičnost; obraditi i druge štetne učinke poput genotoksičnosti, reproduktivne toksičnosti i dr.; naglasak na pesticide koji su na EU listi prioritetnih tvari u području vodne politike (alaklor, atrazin, klorfenvinfos, diklorvos, diuron i izoproturon)</p>
Jazbišek, Krišto, Marčec	<p><i>Štetni učinci metala na ekosustav.</i> (Naglasak na ekotoksičnost (alge, crvi, zebrice, <i>Vibrio fischeri</i>, <i>Pseudomonas putida</i> i dr.) i fitotoksičnost; obraditi i druge štetne učinke poput genotoksičnosti, reproduktivne toksičnosti i dr.; naglasak na metale koji su na EU listi prioritetnih tvari u području vodne politike (Cd, Pb, Ni i As)</p>