

## عنوان مقاله:

Municipal wastewater treatment through cultivation of a new strain of microalgae *Chlorella sorokiniana* pa.۹۱ in flat (plate photobioreactor (FP-PBR

## محل انتشار:

ششمین کنفرانس بین المللی پژوهش های کاربردی در علوم و مهندسی (سال: 1401)

تعداد صفحات اصل مقاله: 14

## نویسندگان:

Poone Yaquobnejad - *Master of Environment Engineering, Faculty of Civil Engineering, Babol Noshirvani University of Technology, Babol, Iran*

Mohsen Taghavijeloudar - *PhD of Environment Engineering, Department of Civil and Environmental Engineering, Seoul National University, ۱۵۱- ۷۴۴ Seoul, South Korea*

## خلاصه مقاله:

Water resources crisis and concerns about environmental pollution lead to promote traditional wastewater treatment process. Biological wastewater treatment (BWWT) through microalgae cultivation is one of the promising method that perfectly remove pollution caused by nutrients such as nitrate, phosphate and/or COD from wastewater because microalga consume nutrients for growing. In this research, a new isolated strain microalgae so called *C. sorokiniana* pa.۹۱ has been cultivated in flat pate photobioreactor (FP-PBR) for the purpose of biological treatment of real municipal wastewater. The results showed that by cultivation of *C. sorokiniana* pa.۹۱ in the photobioreactor under the optimized condition (temperature = ۳۰ C and Light intensity = ۴۰۰۰ Lux), maximum biomass concentration and productivity of ۳.۲۱ gL<sup>-۱</sup> and ۰.۳۱ gL<sup>-۱</sup>d<sup>-۱</sup> were achieved, respectively. Experimental results showed that *C. sorokiniana* pa.۹۱ has a high capacity to remove ۷۴% of ammonia (NH<sub>۳</sub>), ۹۳% of Nitrate (NO<sub>۳</sub><sup>-</sup>), ۸۳% of phosphate (PO<sub>۴</sub><sup>-۳</sup>) and ۷۶% of COD from .real municipal wastewater after eight days of cultivation in the photobioreactor

## کلمات کلیدی:

Wastewater treatment, *Chlorella sorokiniana* pa.۹۱ microalgae, nitrate and phosphate removal, biomass productivity

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1447390>

