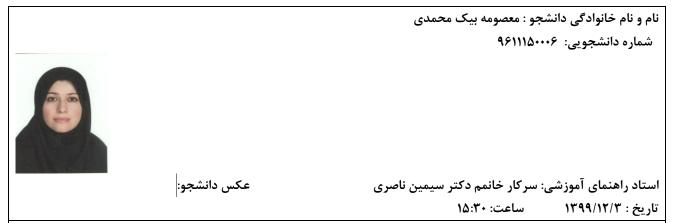


بسمه تعالى

## فرم چکیده سخنرانی ژورنال کلاب دانشجویان دکترا ورودی

دانشکده بهداشت – گروه مهندسی بهداشت محیط



عنوان مقاله :

## Treatment of highly polluted industrial wastewater by means of sequential aerobic biological oxidation-ozone based AOPs

چکیدہ : ۲۲۲ لغت

The feasibility of the treatment of a complex industrial wastewater by aerobic biodegradation in a sequential batch reactor (SBR) followed by ozone-based advanced oxidation processes (AOPs) has been studied. The industrial wastewater had high organic load (TOC > 3 g L–1, COD > 12 g L–1, BOD5 > 2 g L–1) including some toxic/harmful compounds and high concentration of metal and other inorganic species. SBR treatment of the industrial wastewater diluted with urban wastewater (dilution 1:5), was successful after complete acclimation of the mixed culture (i.e.,>50% COD and TOC removals). Nevertheless, the SBR effluent was still not acceptable to be disposed into the environment (c.a. COD 850 mg L–1) so ozonation, solar photo-ozonation and solar photocatalytic ozonation processes were investigated as further polishing treatments. Thus, the sequential combination of aerobic biodegradation and solar photocatalytic ozonation with a TiO2-based catalyst led to an effluent suitable for discharge into the aquatic environment according to environmental regulations (COD < 125 mg L–1, BOD5 < 25 mg L–1).