

Removal of turbidity and organic matter from car wash wastewater by electrocoagulation process

Mohammad Javad Mohammadi^{a,b}, Jila Salari^c, Afshin Takdastan^{d,*}, Majid Farhadi^c, Parviz Javanmardi^e, Ahmad Reza Yari^f, Sina Dobaradaran^g, Halime Almasi^b, Somayeh Rahimi^a

^aAbadan School of Medical Sciences, Abadan, Iran, email: javad.sam200@gmail.com (M.J. Mohammadi), rahimi_s97@yahoo.com (S. Rahimi)

^bStudent Research Committee, Department of Environmental Health Engineering, School of Public Health and Environmental Technologies Research Center, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran, email: javad.sam200@gmail.com (M.J. Mohammadi), h.almasi14@yahoo.com (H. Almasi)

^cSchool of Health, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran, email: Salari.124@gmail.com (J. Salari), mirmajidfarhadi@yahoo.com (M. Farhadi)

^dAssociate Professor, Environmental Technologies Research Center, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran, Tel. +989123470776, email: afshin_ir@yahoo.com

^eDepartment of Environmental Engineering, School of Agricultural, Islamic Azad University, Ahvaz Sciences Branch, Ahvaz, Iran, email: Javanmardi.p12@gmail.com

^fResearch Center for Environmental Pollutants, Qom University of Medical Sciences, Qom, Iran, email: yari1ahr@gmail.com

^gDepartment of Environmental Health Engineering, Faculty of Health & the Persian Gulf Marine Biotechnology Research Center, the Persian Gulf Research Center, Bushehr University of Medical Sciences, Bushehr, Iran, email: sina_dobaradaran@yahoo.com

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ABSTRACT

Car wash effluent is one of the important threats that can contaminate water resources for drinking, agriculture and industrial uses in Iran. The purpose of this study was assessment and analysis of the efficiency of the electrocoagulation process in the removal of turbidity and organic matter from car wash effluent. Data were taken through laboratory scale and sampling from different car wash sewages of Ahvaz, Iran. In this experimental study, we used a bipolar method to convert alternative electricity to direct current. The important factors of our study were pH, electrical potential, voltage and reaction times. Results show that the percentage of turbidity removal in the electrocoagulation (EC) with an aluminum electrode (E) with an optimum pH = 7 were 75 and 99.59 in 10 and 30 voltages, respectively. According to results, the percentage of chemical oxygen demand (COD) removal in the electrocoagulation with an iron electrode with an optimum pH = 3 were 67 and 94 in 10 and 30 voltages. Consequently, electrocoagulation is a comparatively suitable process for turbidity and organic matter removal from car wash wastewater.

Keywords: Car wash effluent; Electrocoagulation; Turbidity removal; Aluminum electrode; Iron electrode

*Corresponding author.