

Degradation of Styren and other Hazardous Compounds in Wastewater by Non-Thermal Plasma Treatment

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Degradation of Styren & other Hazardous Compouns in Wastewater by Non-Thermal Plasma Treatment: its a novel method to remove organic compounds from petrochemicals wastewater. Most advanced oxidation process(AOP), such as UV/Fenton oxidation, electron_beam irradiation, and TiO_2 photocatalysis processes generate more active species in solution (OH, O_3 and H_2O_2 etc), But in most cases the hydroxyl radicals is the active species. The complete mineralization of contaminant by AOP approaches requires a long time of reaction times and high concentration of oxidants to provide enough active species, while in NTP process, working on a large dynamic range and decomposing both high and low concentration of organics in wastewater has been achieved. In this study a stainless-steel hollow needle type anode was used in the reactor to treat industrial wastewater at gas-liguid phase of non-thermal plasma by corona discharge. The results show achieving 30% styrene removal in 30 minutes improves when short electron gap(1 cm) is provided.the H_2O_2 concentration was higher in the discharge system as the content of oxygen was increased.the efficiency of styrene removal by chemical oxygen demand was 10-20% after 30 min treatment.

Biography

Milad Nayebi has completed his Msc in enviromental enginerring(chemical engineering branch) science and his Bsc in petrochemical engineering,both at Amirkabir University of Technology,Tehran,Iran.He is also PHD candidate in chemcal engineering. He has published 4 papers in reputed journal.

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