



## Optimization of Spent Caustic Wastewater Treatment of Jam Petrochemical Company by Wet Air Oxidation (WAO) method

**Daniel Soroush karamian**

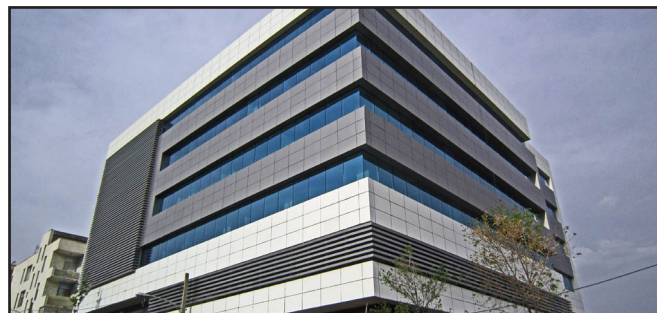
*Research and Development Department, Jam Petrochemical Company, Assaluyeh, Bushehr, Iran*

### Abstract:

Spent Caustic comes from a variety of sources. In these streams, sulfides and organic acids are removed from the production stream by transferring to the caustic phase. Hydrogen sulfide is consumed and the waste produced is usually a mixture of materials, which is referred to as the Spent Caustic Refinery. This wastewater cannot be recycled using conventional wastewater treatment methods, and methods such as burning, humidifying oxidation, wet oxidation by hydrogen peroxide and electrocoagulation or other specialized processes are used. In this study, the method of wet oxidation by air was used to purify this effluent in Jam Petrochemical Company. In order to optimize the purification, important factors influencing the purification efficiency were investigated, including factors such as temperature, pressure, time and pH. The design of optimization experiments was done by Design Express software. The optimization results showed that the temperature had the most effect on the removal efficiency, after which the pH and time had the most effect, respectively, and the effect of the pressure was not significant. Also, the parameters of pressure and time, time and pH had a significant interaction. In particular, the maximum removal rate (87%) was achieved for temperature of 250 ° C, 62 minutes, with pH 7 and 6 bar pressure.

### Biography:

Soroush karamian is researcher in R&D department in Jam Petrochemical Company(JPC) in Iran. Our research field focused on catalyst and green technology. This paper is a result of experiment for Treatment of Jam Petrochemical Company by Wet Air Oxidation (WAO) method.



### Publication of speakers:

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4. Veerabhadraiah, G., Mallika, N., Jindal, S., Spent caustic management: Remediation review, *Hydrocarbon processing.* 90(11), 41-46, (2011).
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**Frontiers in Catalysis and Chemical Engineering, Amsterdam, March 23-24, 2020**

**Citation:** Daniel Soroush karamian | Research and Development Department, Jam Petrochemical Company, Assaluyeh, Bushehr, Iran; Euro Catalysis 2020; March 23, 2020; Amsterdam, Netherlands.