

## Xanthate removal from wastewater through electrocoagulation

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### Abstract

Sodium ethyl Xanthate is an organosulfur toxic compound with the chemical formula  $\text{CH}_3\text{CH}_2\text{OCS}_2\text{Na}$  is the most widely used collector for flotation of sulfide in mineral processing industry. The resulted effluent in tailing dam is highly contaminated with Xanthate which threatens the environment. Among the various chemical and biochemical wastewater treatment, electrocoagulation oxidation is a promising technique. In the electrochemical method at neutral pH through the mechanism of electrochemical oxidation, Xanthate is converted to Dixanthogen which precipitated. Thus, it is necessary for the safe removal of Xanthate from wastewater keep the pH of wastewater above 9.0. For the optimum condition at pH of 10, voltage of 20, at a time of 20 min, the amount of Xanthate removal was achieved about 84.5%. In addition, the efficiency of Xanthate removal from the solution depends on its initial value. It could be concluded that it is possible to reduce environmental impacts and water consumption in flotation plants of sulfide ores. This is a very important issue for countries in which Xanthate is as a collector in mineral processing industry.

### Biography

A K Darban completed his PhD at Department of Civil Engineering McGill University, Montreal Canada in 1998. He is professor of environmental engineering and chair of Modares Environmental Research Center (MERC), Tehran, Iran. He has over 250 publications in which 50 papers are international journal in the last three years. He has been serving as an editorial board member of reputed Journals.



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