



TITANIUM DIOXIDE EXTRACTION FROM PAINT SLUDGE OF AUTOMOTIVE INDUSTRY CASE STUDY: PAINT SLUDGE OF SAIPA PAINT SHOP

Seyed Mostafa Khezri, Azadeh Akhavan Bloorchian*

Islamic Azad University, Tehran Science and Research Campus, Punak Square, Tehran-Iran, Postal code: 1477893855

Abstract

Paint sludge of automotive industry contains heavy metals and other toxic substances. Due to this matter, it has a high pollution potential. Incorrect disposal of paint sludge led to kinds of environmental pollution. Recycling and reusing of wastes can be one of the best solutions for decreasing of pollutant entrance to environment. The purpose of this study was to present a new method of extracting the main components of paint sludge, for determining concentration of elements in paint sludge; several tests have been done such as XRF, XRD and DTA. Results proved that considerable amounts of compounds like titanium dioxide exist in paint sludge. Titanium dioxide is one of the compounds that has various applications in different industry, and due to its high costs, an economical method for extracting of TiO_2 from this sludge can be a profitable solution. Results show that the percentage of TiO_2 in sludge is about 34% and one can extract this compound with 89.8% purity.

Key words: car industry, flotation, paint sludge, titanium dioxide, XRF

* Author to whom all correspondence should be addressed: az.akhavan@gmail.com