University "Goce Delčev", Štip, R. Macedonia
Faculty of Medical Sciences, Faculty of Natural and Technical Sciences

Process of purification of motor oil and its use as an ecological fuel

Sofija Petkovska, Zoran Despodov, Biljana Gjorgjeska, Milka Zdravkovska

INTRODUCTION - Used motor oil can be cleaned with a suitable chemical treatment in order to obtain purified motor oil that can be re-used as motor oil for vehicles or ecological fuel. The need for recycling of waste made from the used motor oils initiated the idea for its cleaning with a simple, rapid, environmentally safe, secure and inexpensive process.

AIM - The aim of the paper is to show the process that recycles waste oil and getting high quality and ecologically pure oil which can again be used in motor vehicles as an environmentally clean fuel.

DISPLAING THE PROCEDURE - Technical and technological procedure which does not require much time, human resources and large workspaces is used. The products which are used for motor oil purification are products that are readily available on the market. The process begins by filtration which removes mechanical impurities. The process of filtration is followed by the process of chemical treatment with concentrated acid and base and finally with a small amount of suitable adsorbens water and ions are being removed. The process ends with repeated filtration that uses the same filter as at the beginning of the process.
Motor oil is filtered through the filter three times, to make retention of mechanical impurities. Chemical processing used concentrated H_2SO_4 with amount of 8-10% of the total mass of filtered oil. After treatment with acid following neutralization with NaOH, which must be freshly prepared. An eye on the end of the reaction and the pH. Upcoming final filter which gives the final product that is cleaner motor oil.

CONCLUSION - The resulting oil is purified with satisfactory quality and can be used as oil used in motor vehicles as ecological fuel. Purified oil can be used as fuel in central heating system and provides reduced heating costs and a cleaner environment in terms of reducing exhaust fumes.