

USE OF THE PYROLYSIS PROCESS IN WASTE MANAGEMENT

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Rezumat. *Lucrarea își propune să scoată în evidență avantajele utilizării deșeurilor rezultate din: gunoi menajer, cauciuc, plastic, deșeuri lemnoase, deșeuri textile, în procesul de piroliză. Uleiul pirolitic rezultat poate fi utilizat drept combustibil neconvențional, pentru motoarele diesel, prin emulsionare. Utilizarea unei emulsii diesel impune rezolvarea unei probleme de stabilitate pe termen lung a emulsiei și a capacității acesteia de a funcționa perfect cu toate tipurile de motoare diesel. Prin utilizarea unei tehnologii adecvate se propune o soluție inovativă și fiabilă de economisire a combustibilului și reducerea noxelor și a particulelor grele.*

Abstract. *The paper aims to highlight the advantages of using waste resulting from: household waste, rubber, plastic, wood waste, textile waste in the pyrolysis process. The resulting pyrolytic oil can be used as an unconventional fuel for diesel engines by emulsification. The use of a diesel emulsion requires solving a problem of long-term stability of the emulsion and its ability to work perfectly with all types of diesel engines. The use of appropriate technology proposes an innovative and reliable solution for saving fuel and reducing pollutants and heavy particles.*

Keywords: pyrolytic oil, unconventional fuel, waste management

1. Introduction

Pyrolysis is a thermal decomposition of materials at high temperatures in an inert atmosphere, such as a vacuum gas, by changing the chemical composition, and this decomposition is irreversible.

The pyrolysis process is an endothermic process and is performed in an enclosure, without oxygen or with low oxygen supply to reach the high temperatures necessary for the volatilization of organic compounds.

In the current situation, it is the only efficient method of capitalizing on waste from plastics, rubber, wood, household waste without a perfect prior separation of them on chemical compositions [1], [2], [3].

2. Classification of pyrolytic processes

The classification criteria of the pyrolytic processes are depending on:

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