ΣΕΜΙΝΑΡΙΟ

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ΘΕΜΑ: **CATALYTIC CRACKING OF PLASTIC WASTE TO FUELS AS A POLYMER RECYCLING METHOD**

ΤΟΠΟΣ: Αίθουσα Σεμιναρίων ΕΙΧΗΜΥΘ-ΙΤΕ

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ΠΕΡΙΛΗΨΗ

The huge amount of waste plastics gives rise to serious environmental concerns. Plastic does not degrade and remains in municipal refuse tips for decades. During the last few years recycling of plastics has been recognised as a necessity. Recycling methods can be grouped as follows:

1. Mechanical reprocessing of the used plastics to form new products. This method has found very limited application, as it is not generally applicable, due to the low quality of the new products and the need for pure waste plastic streams.

2. Incineration of the plastics to recover energy. This method produces toxic gaseous compounds and only shifts a solid waste problem to one of air pollution. In many countries incineration of plastic waste is forbidden or politically unacceptable.

3. Thermal and/or catalytic degradation of plastic waste to gas and liquid products, which can be utilised as fuels or chemicals. These methods seem to be the most promising, given the fact that waste plastics might be regarded as a cheap source of material. The products of pure thermal degradation show a wide product distribution of carbon numbers requiring further processing for their quality to be upgraded. Catalytic degradation on the other hand yields a much narrower product distribution of carbon atom number with peak at lighter hydrocarbons.

In this presentation the catalytic cracking of polyolefins be reported over microporous catalysts. More specifically it will be presented a systematic study of the nature of the initial breakdown of the polymer macromolecules, the product distribution and the effect of various process variables.