

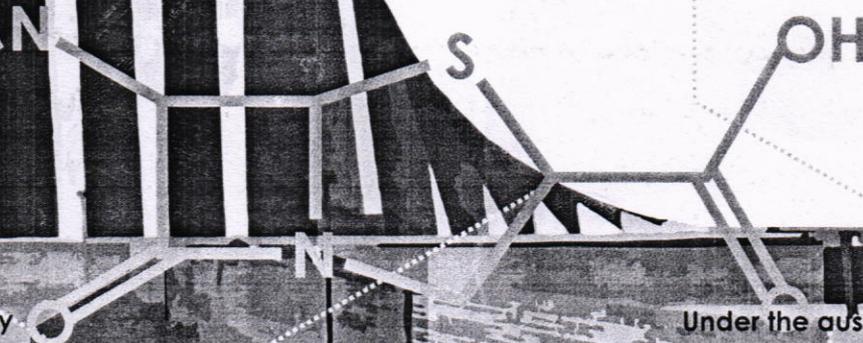
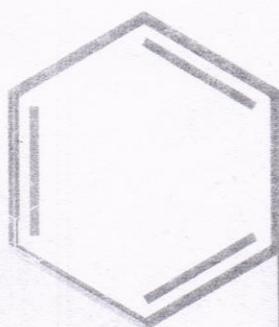
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EN-PP-03

CHARACTERIZATION AND COMPARISON OF PLASTIC PYROLYSIS OIL WITH ITS DIESEL BLEND: TOWARDS GREEN ENERGY

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In this study we have introduced waste plastic pyrolysis oil as an alternative fuel by characterizing in details and compared with conventional diesel. High density polyethylene, HDPE was pyrolyzed in a self-designed stainless steel laboratory reactor to produce useful fuel products. HDPE waste was completely pyrolyzed at 250-300^oC for 2-3 hours to obtain solid residue, liquid fuel oil, and flammable gaseous hydrocarbon products. Comparison of the fuel properties to the petro diesel fuel standards ASTM D975 and EN 590 revealed that the synthetic product was within all specifications.

Keywords: Waste plastic, pyrolysis, diesel blend, oil properties.

EN-PP-04

HIBRID TECHNOLOGY FOR WATER PURIFICATION AND DISINFECTION- TOWARD SUSTAINABLE FUTURE

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In this study we used solar energy for disinfection and purification of household water. Solar water purification system is a water purification system at household level based on solar radiation treatment and water distillation with additional use of solar heating. It is a combination of two water purification processes, the solar water disinfection system and the solar distillation process. We have used both conventional purifier and solar heating system. It was revealed that using solar energy can effectively purify water to drinking level. We examined the testing and treated water quality by several analytical methods and the results are very satisfactory. Considering cost effective analysis the proposed model can be a milestone for sustainable water purification system for small scale.

Keywords: Solar energy, water purification, disinfection, sustainable future.