

# Jordan University of Science and Technology

## Extracting Oil from Used Auto Tires at Low Temperature after chemical treatment

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**Abstract:** This study presents an alternative tactic to pyrolysis of auto tires avoiding the use of high temperature and increasing the yield of oil produced. It depends on a simple chemical treatment of auto tires with sodium carbonate at low temperature (50 C) followed by solvent extraction. This treatment produced two folds of the yield that can be obtained using normal solvent extraction. The experimental results suggests that sodium carbonate is responsible for breakage of CAS bond in the main structure of auto tires making solvent extraction easier. Additionally, the sulphur content of the extracted oil using the sodium carbonate treatment is reduced significantly (by about 28%) making the product more favorable energy/- fuel source. This technique allows about 30 wt.% of oil to be extracted from the used auto tires at 50 C under atmospheric pressure resulted from the breakage of the sulphur cross-linking by the sodium carbonate.