

5th International Conference on Green Chemistry and Technology

Özlem Onay, Trends in Green chem, 3:2
DOI: 10.21767/2471-9889-C1-003

& 6th International Conference on Environmental Chemistry and Engineering

July 24-26, 2017 Rome, Italy

Characteristics of bio-oil produced by the pyrolysis of mixed waste tire and biomass

Özlem Onay

Anadolu University, Turkey

In this work, waste tire was co-pyrolyzed with biomass to investigate the effects of the waste tire on yield and chemical compositions of bio-oil product. Biomass was mixed with waste tire in the mass ratios of 0:1, 1:10, 1:4, 1:1, 4:1, 10:1 and 1:0. The pyrolysis experiment was carried out by using a lab-scale pyrolysis reactor. The experimental results showed that the addition of the waste tire led to an increase of bio-oil yield. The maximum of bio-oil yield was obtained at the waste tire/biomass mass ratio of 1:10. The characteristics of the obtained oils were studied by elemental analyzer, FTIR and GC-MS. It was found that the bio-oil obtained from the pyrolysis of mixed biomass and waste tire had higher carbon and hydrogen content, lower oxygen content than those produced by the pyrolysis of biomass alone. Moreover, there were more aromatics and aliphatic compounds in the obtained bio-oil product. These variations indicated that the existence of the waste tire significantly influenced the chemical compositions of bio- product. These variations indicated that the existence of the waste tire significantly influenced the chemical compositions of bio-oil.

Biography

Özlem Onay obtained her PhD degree in Chemical Engineering from the University of Anadolu in 2001. In 2010, she became an Associate Professor at the University of Anadolu. Currently, she is a Professor and her skills are mainly dedicated to thermal conversion processes. She also has 26 publications in international recognized journals, and 25 presentations in international conferences. Her expertise in reviewing scientific papers led her to become the Editorial Board Member of *International Journal of Petroleum Technology* and *MAYFEB Journal of Energy*.

oonay@anadolu.edu.tr

Notes: