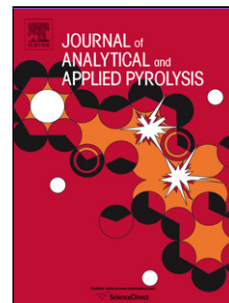


Accepted Manuscript

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PII: S0165-2370(18)30295-X
DOI: <https://doi.org/10.1016/j.jaap.2018.05.015>
Reference: JAAP 4334

To appear in: *J. Anal. Appl. Pyrolysis*

Received date: 12-4-2018
Revised date: 23-5-2018
Accepted date: 30-5-2018

Please cite this article as: Johansson A-Christine, Sandström L, Öhrman OGW, Jilvero H, Co-pyrolysis of woody biomass and plastic waste in both analytical and pilot scale, *Journal of Analytical and Applied Pyrolysis* (2018), <https://doi.org/10.1016/j.jaap.2018.05.015>

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Co-pyrolysis of woody biomass and plastic waste in both analytical and pilot scale

Ann-Christine Johansson*¹, Linda Sandström¹, Olov G. W. Öhrman^{1,2}, Henrik Jilvero³

¹ RISE Energy Technology Center AB, Box 726, SE-941 28 Piteå, Sweden

² Luleå University of Technology, SE-971 87 Luleå, Sweden

³ Stena Metall, SE-400 40 Göteborg, Sweden

*Corresponding author, email address: ann-christine.johansson@ri.se

Highlights:

- Co-pyrolysis of biomass and plastic waste was studied in analytical and pilot scale.
- Co-pyrolysis significantly affects the composition and properties of the products.
- Co-pyrolysis suppressed reactive oxygenates and promoted alcohols and esters.
- Plastic waste introduces new challenges related to chlorine, acidity and viscosity.

Abstract

Earlier studies show that co-pyrolysis of biomass and plastics can improve the quantity and quality of the produced pyrolysis oil compared to pyrolysis of the separate feedstocks. In this work three relevant plastic wastes; paper reject, shredder light fraction and cable plastics; were evaluated together with woody biomass (stem wood from spruce and pine) using analytical pyrolysis, Py-GC-MS/FID. One verification experiment was also conducted in a cyclone pyrolyser pilot plant at industrially relevant conditions.

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