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EFFICIENT RECOVERY OF NON-SHREDDED TIRES VIA PYROLYSIS IN AN INNOVATIVE PILOT PLANT

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Abstract

New and end of life tires have been pyrolyzed in an innovative pilot plant that processes whole tires, thus saving the energy costs of shredding while allowing energy and materials recovery. Furthermore, the presence of a hydraulic guard guarantees high process safety. Several tests at different temperatures have been performed and the collected solid, liquid and gaseous products have been quantified and characterized. The influence of the maximum process temperature on yields and chemical-physical properties of pyrolysis products has also been evaluated. In view of a plant scale-up to continuous mode, we have studied the influence of variation of tires type and wear and the effects of the final products aging.

Key words: char, pyrolysis, pyrolysis gas, tires recovery, waste management.

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