



Biofueling of Castor Plant Wastes using biological and thermal methods

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Abstract

There is embarking on a new pilot project in Africa (Nigeria), this project focuses on Food and Energy Production, together with Civil Works and Social Restructuring and Empowerment. African/Nigerian Business Plan pertains to a pilot project of 2,000 Hectares being destroyed by oil mining, it explains in more detail the synergy between the cultivation of Castor. We focus mostly on castor plant waste for providing hydrogen and methane by biological and thermal decomposition (dark fermentation and anaerobic digestion combined) while the bottom product will offer materials to bioplastics that would be a source of membranes enabling modern membrane systems. The undigested waste along with castor plant shells would be mixed with plastic from local communities and pyrolyzed or gasified. The pyrolysis and gasification products would be also checked for their availability in membrane technology. Such membranes can be suitable for the separation of glycerol from other extracts that can be used for polymer and aviation fuel. Additionally, research on the plastic potential of waste along with the mixing of other wastes would provide a source for conjugated polymers and silicones enabling the use as a source of photovoltaics and ammonia splitting. This region is going to be the first region to agree on a zero-waste policy being an example for other parts of the world on how to provide modern cutting-edge approaches.

Keywords: hydrogen, castor oil; Africa, Nigeria; bioplastics membranes.

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