“Converting Non Recycled Plastics into Energy”

ABSTRACT

Nowadays, waste is an important issue in our planet, because mankind produces millions of tons daily. On the other hand, traditional nonrenewable energy sources such as petroleum have becoming scarce and an important contamination issue. For this reason, it is necessary to explore alternative clean energy sources. Recent studies have demonstrated that energy recovery from waste is possible. According to The Earth Engineering Center at Columbia University, the solid waste that is in the US landfill has a tremendous potential as alternative energy source. About 13.8 million homes could be powered and 9 million cars fueled. As a consequence, using a clean energy could reduce the greenhouse gas emissions by nearly 123 million tons of CO2 equivalents. This is comparable to removing 23 million cars from our roads. Moreover, some companies have implemented these processes at industry level. Paper, glass and plastics are materials that can be converted in energy. However, paper and glass require high temperature pyrolysis. On the opposite, plastics in general are decomposed at lower temperatures and they are considered high value “captured energy materials”. In this project, we propose to investigate the different processes that are currently used to convert non-recycled plastics into energy. A better understanding of the chemical reactions that undergo this conversion would be also included. Finally, a single lab system will be proposed to demonstrate the conversion of plastic into energy and will power a small electric device.

REFERENCES:


2) http://www.youtube.com/watch?v=UjZgtmd1kko