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DESIGN AND FABRICATE A MECHANICAL SYSTEM THAT CAN CONVERT DIFFICULT TO RECYCLE PLASTICS INTO CRUDE OIL

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IN
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ABSTRACT

There is an increase in the production and consumption of plastics as the day goes by. All plastics need to be disposed after their usefulness, as waste. The need to manage this waste from plastic becomes more apparent. This leads to pyrolysis, which is a way of making these wastes to become very useful to us by recycling them to produce fuel oil. In this study, plastic wastes (polyethylene) are used for the pyrolysis to get fuel oil that has the same physical properties as the fuel used in aviation industry. The experiment was carried out in two ways, first, thermal pyrolysis (without the aid of a catalyst) and second, catalytic pyrolysis (with the aid of a catalyst). Pyrolysis runs without oxygen and in high temperature of about 500oC, which is why a reactor was constructed for the reaction and a furnace designed to provide the required temperature.