

## Design Consideration of a Plastic Shredder in Recycling Processes

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**Abstract :** Plastic waste management has emerged as one of the greatest challenges facing developing countries. This paper describes the design of various components of a plastic shredder. This machine is widely used in industries and recycling plants. The introduction of plastic shredder machine will promote reduction of post-consumer plastic waste accumulation and serves as a system for wealth creation and empowerment through conversion of waste into economically viable products. In this design research, a 10 kW electric motor with a rotational speed of 500 rpm was chosen to drive the shredder. A pulley size of 400 mm is mounted on the electric motor at a distance of 1000 mm away from the shredder pulley. The shredder rotational speed is 300 rpm.

**Keywords :** design, machine, plastic waste, recycling

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