

## ABSTRACT

PT.XYZ is a company engaged in tire retreading and rubber mat production. The company operates several machines including a special crusher for roll tires and used rubber type Ethylene Propylene Diene Monomer Rubber (EPDM). PT.XYZ's crusher has a problem, namely the machine fails to produce granules in the standard size desired by PT. XYZ. The standard size desired by PT. XYZ is large granules with a size of 10mm - 8mm and small granules with size <8mm. From this problem, the shredder needs to be modified to support the optimal production process.

The purpose of this study, namely to modify the crusher machine using the Rational Product Design Method, so that the machine can produce granules in standard sizes. Rational Product Design Method is a method of product development in a gradual manner and makes comparisons between one design and another. The results obtained in the form of a modification of PT.XYZ's crusher that can separate the granules automatically according to the desired size and reduce the operator's work in separating the granules.

**Keywords: Granules, Crusher Machine, Rational Design Method**