

ABSTRACT

Recycled plastic material is a material that has a lot of impacts today, one of which is in terms of environmental pollution. Although only 25% of plastic can be recycled, there are still many alternative ideas that can be used to solve this problem. Today, 3D Printing technology using plastic thread has emerged. People from the recycling community have found a new innovation, namely PET filament as one way to grow a sustainable circular economy. The use of Bob Eberle's SCAMPER helped give birth to the stripping design. In this study, the Miles & Huberman qualitative model became the basic foundation for grounded theory thinking initiated by John W. Creswell. Using a feeder transmission driven by a gear mechanism seems to help the workflow. However, in the test results with the resource person, this tool experienced an error problem by factor x, so that the desired acceleration efficiency had not been met properly. Even so, if it was only for slicing, it was enough and its function was useful so far. a grounded theory was created in design whose contents were the implementation of relativity, flexibility objects, and improvisational data from design problems that occurred and their patterns in life that had not been described. The findings of the results obtained in terms of cutting can be just that he took a long time to come out, because in the path section for the feeder has not found a way in the gripping mechanism. When validating the product to experienced users, this test did not go smoothly. In addition to the problem with the gripping mechanism, there was also a problem with the low gear torque.

Keywords: *Filament, Strip Cutter, rPET Bottle, Transmission, Upcycle.*