ABSTRACT

One of the most polluting types of waste is plastic waste. The negative impact caused by plastic waste in addition to reducing soil fertility is that it can clog drainage channels, gutters and also rivers. One of the most polluted rivers in Indonesia and also in the world is the Citarum river. Various methods have been carried out to deal with the garbage and waste contained in the Citarum river, one of which is the garbage removal machine found in the river area of Pasar Kordon, Bandung Kidul District, Bandung City. However, the presence of these machines has created new problems in the area around the river and became the cause of flooding. It happened because the blocked garbage keeps the flow of water obstructed and overflows out of the river. This makes the Automated River Cleaner Machine case study carried out. On the machine there are several main components, namely trash hooks, ships, trash screens, trash deliver and trash containers. The study will focus on designing the design of the trash deliver consisting of 2 conveyors. The design of the conveyor will be carried out using rational product design methods and there will be several design concepts. Based on this method, several stages will be conducted, namely clarifying objectives, establishing functions, setting requirements, determining characteristics, generating alternatives, and evaluating alternatives. After conducting an assessment stage of each design concept, it was found that the design concept A was the chosen design concept with the highest score. The concept has a belt with a cleated rubber belt type, frame shaped frame with a pole, drive pulley using drum pulley, idler roller using a flat roller idler, drive unit in the form of gear motor, trash separator in the form of a cavity, trash deliver holder in the form of hinges/rods, and controller with stepless speed control type.

Keywords: plastic waste, trash deliver, conveyor, rational product design, design concept.