# ABSTRACT

*Rumah Tempe Indonesia in Bogor, Indonesia is a soybean tempeh production center that uses Appropriate Technology sistem in order to produce soybean tempeh that are hygienic, affordable and profitable. One of the production processes is an initial separating process of the soybean skin, which uses a soybean skin separating device that consists of a container and a blade. This device could separate the skin from 1 batch or 60 kilograms of boiled soybean in a cycle time of 31.50 minutes, which is the biggest amount of time needed in a single tempeh production process in RTI. In order to reduce this cycle time, a new proposed design is made using reverse engineering and redesign approach.*

*The device is decomposed to enchance the features based on the need statement. Concept Generation is used to generate 6 new concepts, which is then narrowed down using concept screening and concept scoring to produce the best concept to reduce the cycle time of the production process.*

*The proposed design made using Reverse Engineering and Redesign method contains several new features such new set of blades, as the addition of filter brush alongside the blades, and addition of a holed surface in the inner container. Testing of the proposed device done in RTI shows a change in the initial separation process' cycle time, resulting in the cycle time of 24 minutes for the testing of the device design's first concept, 23.8% faster compared to cycle time of the existing device. Testing of the design's second concept results in a cycle time of 30.2 minutes, 4.76% faster than the existing cycle time. The first concept of the design is capable of cleaning the skin off of the beans with a hygiene percentage of 57%, while the second concept could do so with the hygiene percentage of 55%, thus becoming the most optimum design with the least cycle time.*

***Keywords: reverse engineering and redesign, product development, cycle time, productivity, soybean tempeh.***