



2020 JCATI Symposium

Thursday April 9, 2019 9:00 AM-4:00 PM

The Historic Davenport Hotel, Spokane WA

Recycle Processor for Commercial Aircraft Wing Trimmings

Summary of previous work: Over the last two years, a system was conceived, analyzed, designed and modified to address the needs of a manufacturer: to process waste composite wing trimmings into 'chips' for further repurposing. The system consisted of two devices that first delaminate the composite board trimmings, and then process them into 'chips' that can be more easily managed for secondary uses.

This project has continually met the requirements for our university engineering capstone project. The current project team consists of three students, each of which will perform lead duties on one of the system functions. As a system, the current composite recycle processor achieved part of the goals. The first version proved the concept. The second version improved the delamination and achieved 100%. However, the system flow rates are low, and this needs improvement. At this time, both the process rate and shredding action need modification. Further, our attempts at debonding resin and fiber have been partially successful.

Project Scope: The existing process needs to be modified so that a nominal composite board can be processed at a faster rate. One student is working on separating fiber and resin.

Goals: The student team will address these three areas. For process rate, we will set a goal of one inch per second. For shredding, the goal is 0.5-1" fiber lengths. For debonding, a goal is for 100% resin removal.

Citation: <https://www.jcati.org>