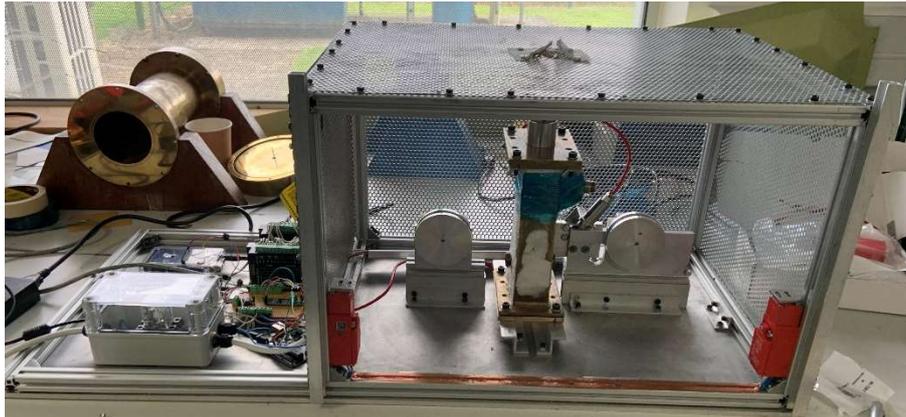


Diploma thesis title

Manufacturing solutions for fast tow placement of composites



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Year of graduation	2022
Initial situation :	All the material for the project was already there, except from the door and some wires that were missing. The programs for the three Elegoo boards were already done. The installation was dismantled and dirty when I first arrived.
Goals :	The main goal of the work is to be able to heat the carbon fiber at high temperature so that the resin melts or softens. The prototype has already been done once before, so the idea is that I will have to put it back into working state by doing the cabling of the machine and to assemble the mechanical parts together. As soon as the machine is operational, the aim is to run a few tests and afterwards change a component, the microwave cavity, to allow it to work with higher waves. Then do tests again but this time by changing the waves and the speed of the carbon going into the microwave to find the highest feed rate while keeping a minimum temperature of heating.

Results and Benefits :

In the first phase, I did the preparation of the work, thinking of ideas to improve the machine and of the work to be done and planning my task for the whole project which spanned over eight weeks.

My first concern was to think about the improvements concerning the security part of the machine, because there are deficiencies in this matter. The aim is to make the machine easier to use and more economical by the choice of components while keeping the same principal function.

Some issues that happened during the project have forced me scale down some objectives as the time came short to be able to fix them and for the reason of not having all the software codes.