

Week 6 Report

As a group, we discussed the possibility for producing a printed circuit that has teeth to provide conduction to carbon fibers, and another outlet for a connection to Molex. Nicholas spoke with a WashU EE professor to discuss the feasibility of this.

We have also discussed for a short term goal to produce a jig for Dr. Hengen's lab to use to expedite the carbon-fiber attachment process. The jig will be used to connecting a jig to the teeth of a molex connector and the other end to allow for a carbon fiber to be dropped in. Liquid solder can be used to then to provide conduction with each molex tooth and an individual carbon fiber. This should decrease preparation time from > 1 hour to < 30 minutes.

We plan to go over the GANT chart tonight (Wednesday) and apply the finishing touches to the preliminary report, which has been written in google docs.

Tim Blanche, founder and CEO of White-matter advanced neurotechnology (producer of hs-640), was called to discuss methods of connecting carbon fibers to the ecube headstage. He stated that if the fibers are able to fold in a 1mm turn radius, we could feed the carbon fibers directly into the circuit stack. If the circuit boards in the stack were designed to include microvia, we could attach the carbon fibers directly to the ecube, removing the need for a flex cable (reducing noise). The problem associated with this is decreasing the assembly time. The micro via are extremely small and feeding small carbon fibers through is a tedious process. Tim told us to look into wave soldering as a way of connecting the carbon fibers to the board while preventing cross conduction between microvia.

Michelle met with Dr. Hengen to make sure our specifications are in line with his goals. She brought up some existing solutions, specifically the work being done by Massey and Maharbiz at Berkeley. Hengen knew about the research and believes that what we are making solves different problems. She finally was able to get the current jig dimensions and was able to collect information about current spec and what the lab wants to be improved from their current model.