

Laser Cutting ESR Foil for SiPM-on-tile

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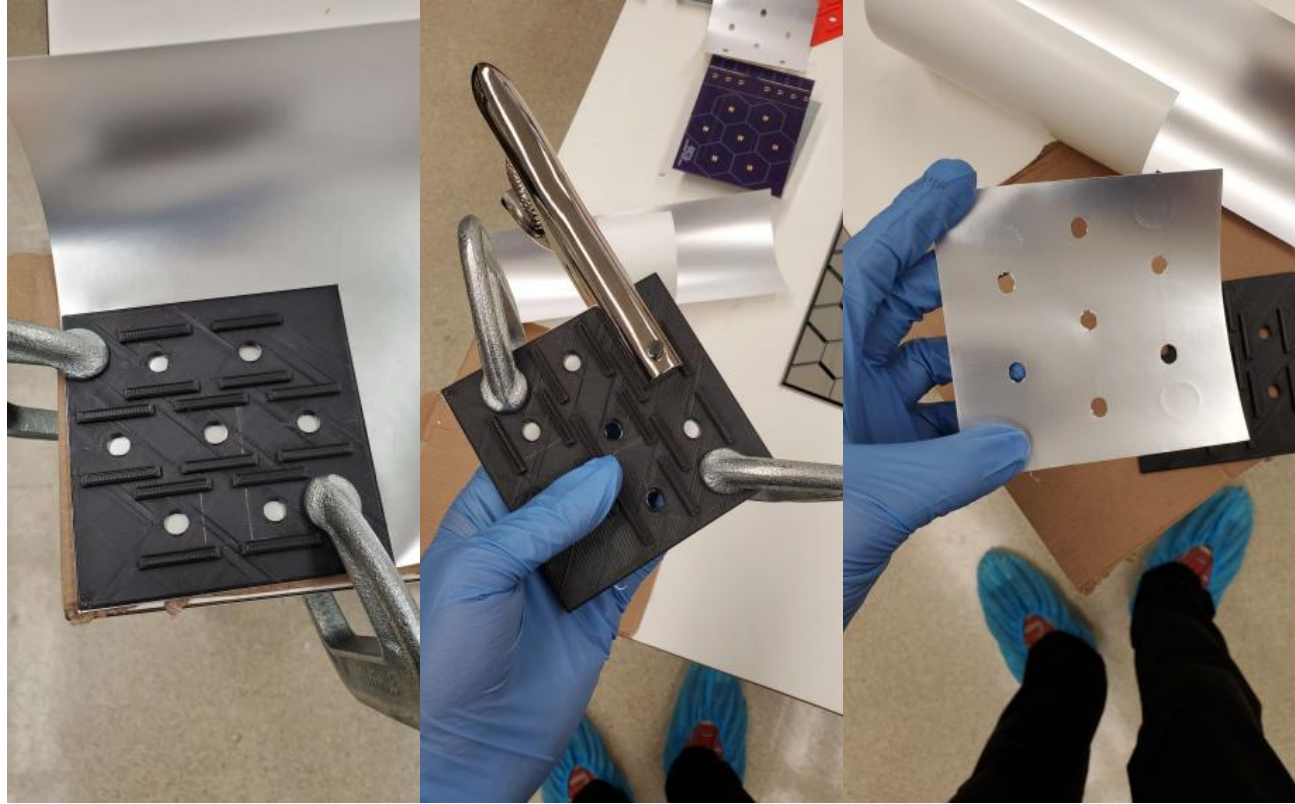
Objective

- Cut Foil to closely fit SiPM
 - Reduce dead space
- Efficiently produce foils quickly



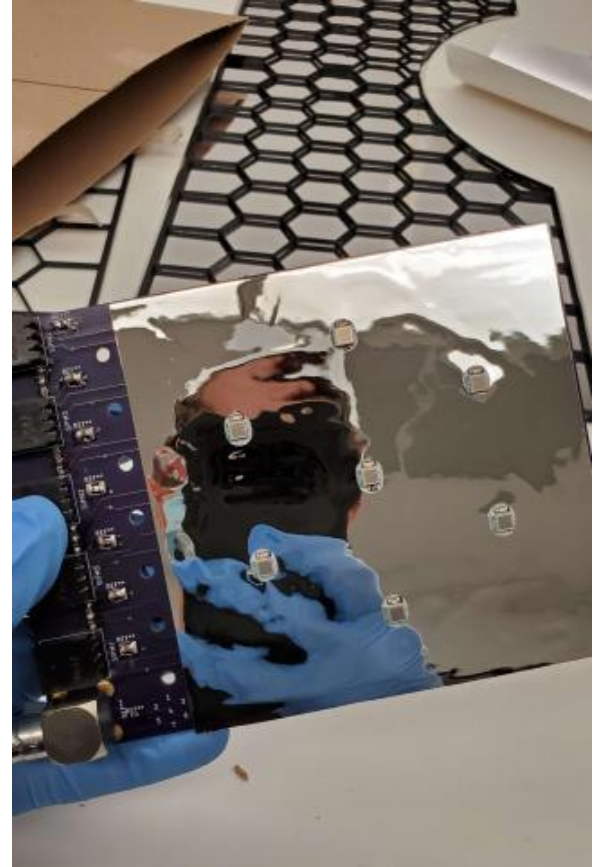
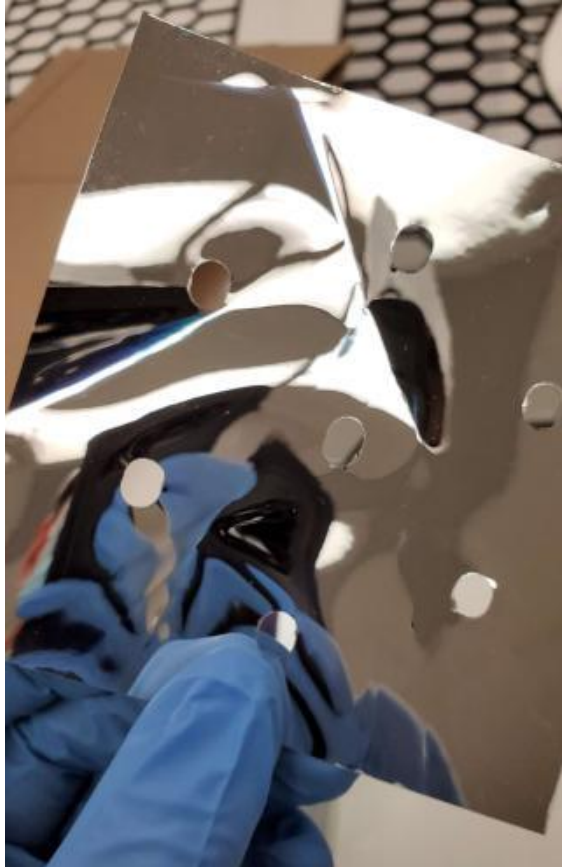
Previous Method

- Not very precise
- Not very efficient
- Not adaptable



Previous Method

- Holes too big for layers with smaller SiPMs



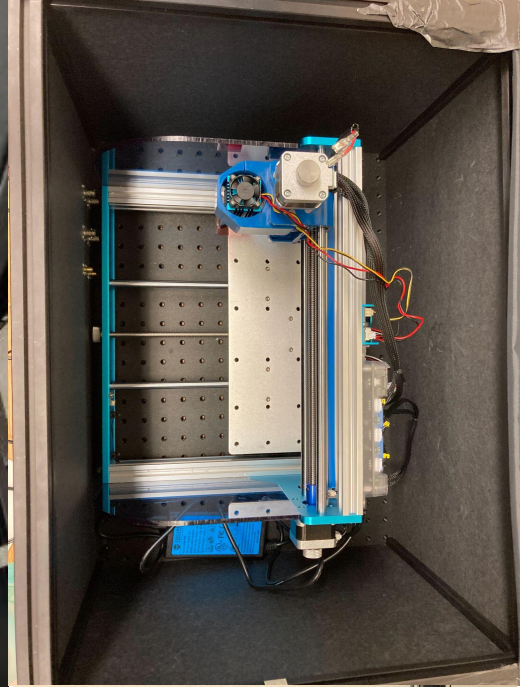
Laser Cutter Machine

- Prover 3018 CNC Machine
- Sainsmart Laser Module
 - 5.5 W Class 4
 - 455 nm

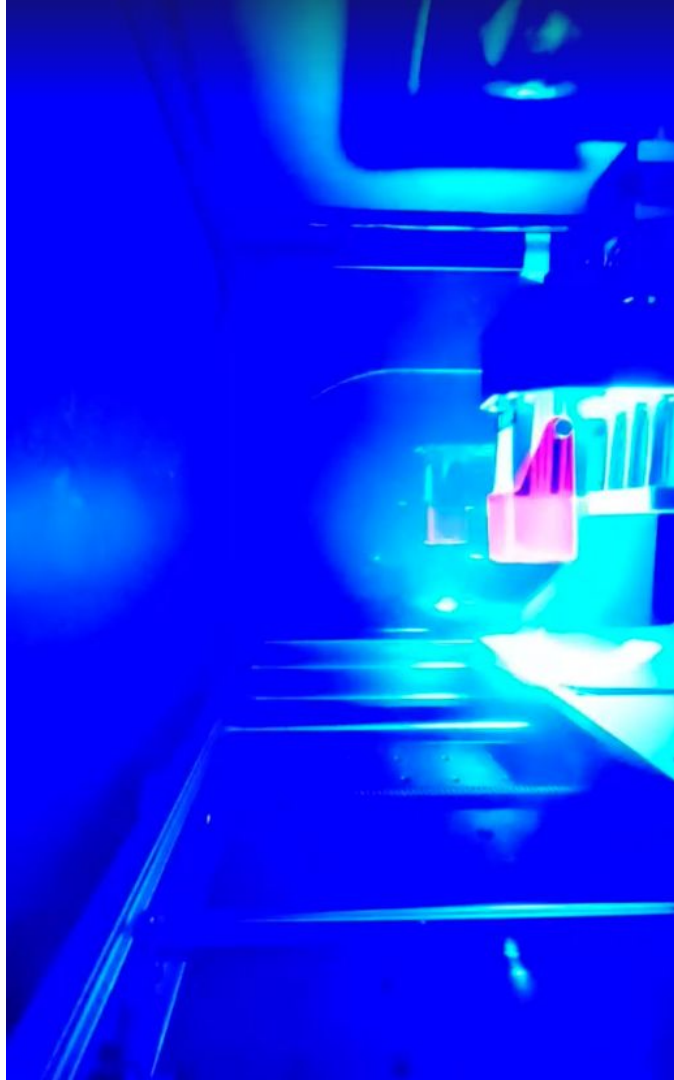


Laser Cutter Setup

- Safe in dark box
- Laser is only on when box is closed

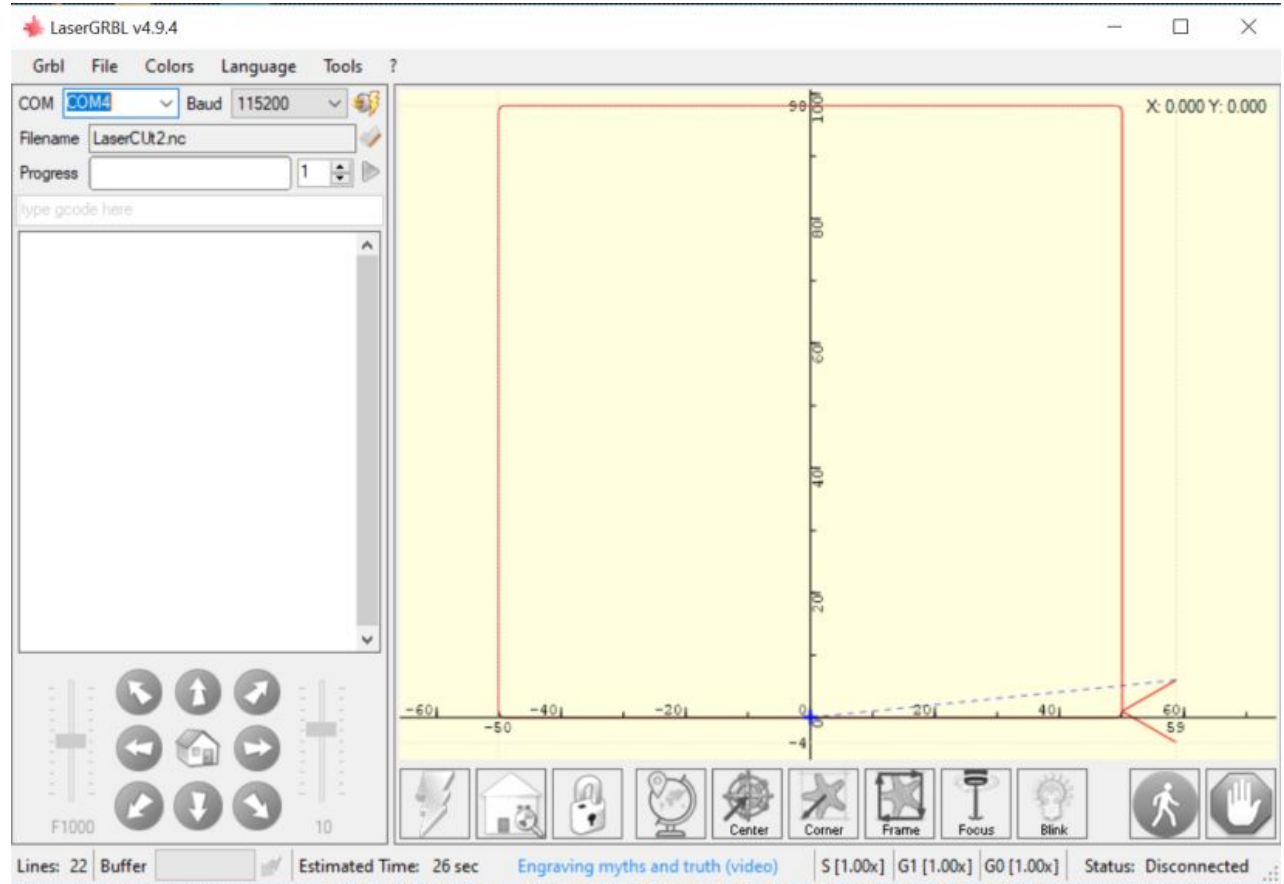


Laser While On



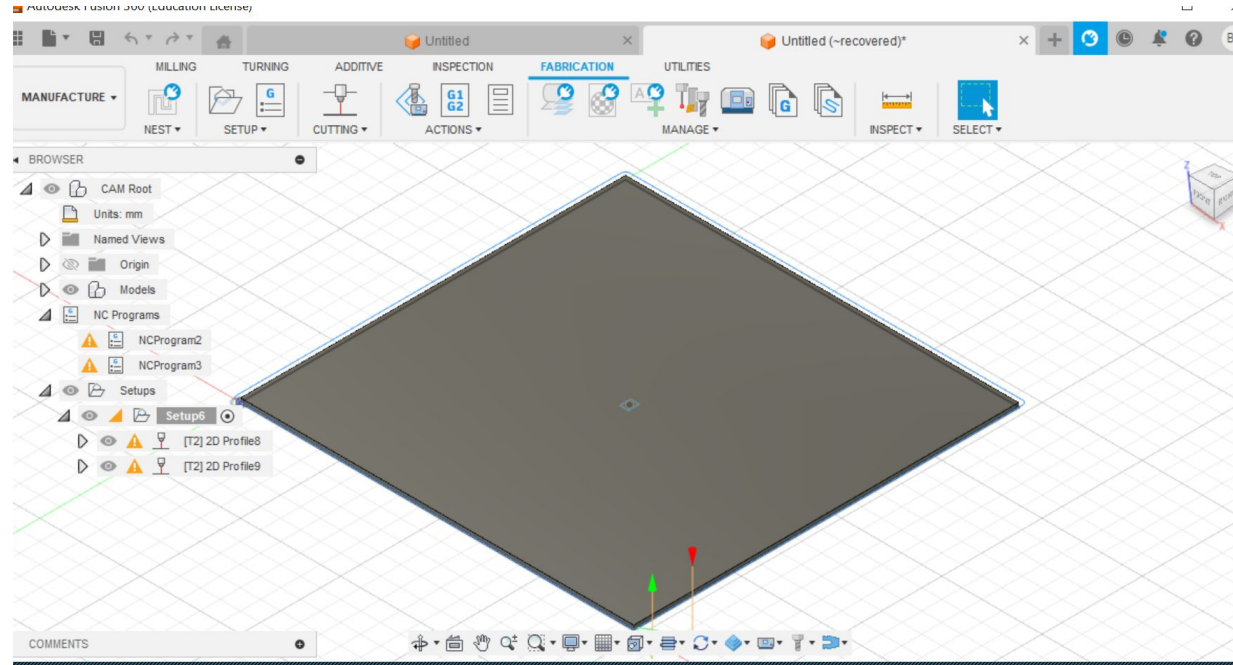
Control Software

- LaserGrbl



Modeling Software

- Fusion 360
 - Model in CAD (Computer Aided Design)
 - Set Parameters in CAM (Computer Aided Manufacturing)



Current Progress

- Able to cut paper
- Unable to cleanly cut foil
 - Power adjustments
 - Speed adjustments

