BITNG LAB UPDATE

Carl Demolder

Date 6/03/2021

Progress from last week

- Shriner’s project
  - Literature review revisions
  - Laser cutter training
  - PCB redesign
- LP ECG
  - PCB redesign
- Chip socket programmer
  - Waiting for components

SHRINER'S PROJECT

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Strain sensor

Problem:

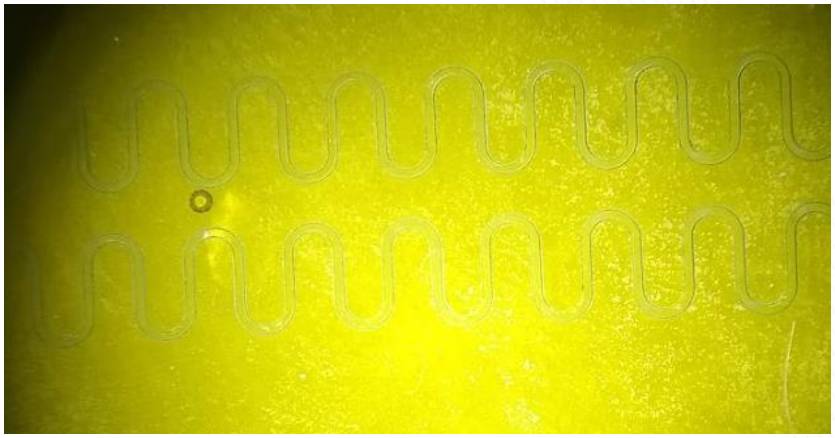
- Flakey AgNW
- Clumps and sticks together
- Bonds to the PI stencil

Solution:

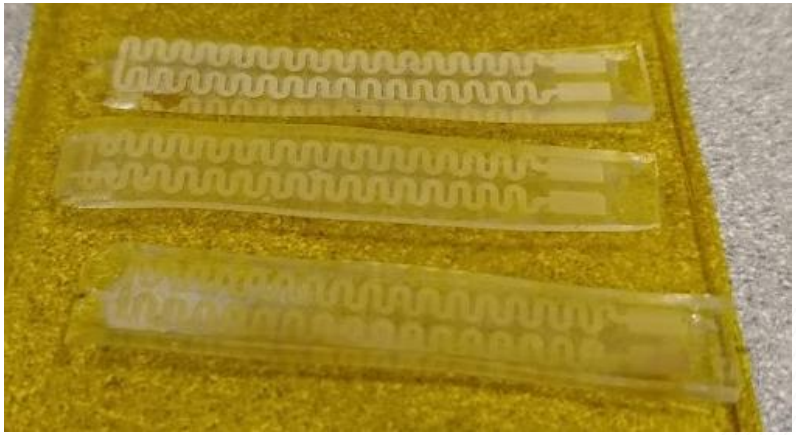
- Plasma treat PDMS
- Oven instead of hot plate
- PI film with single side adhesive instead of two-sided adhesive

W = 0.25 mm

W = 0.4, 0.6 mm



PI Stencil for Strain Sensor

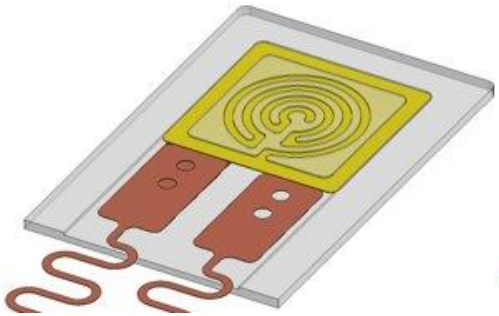


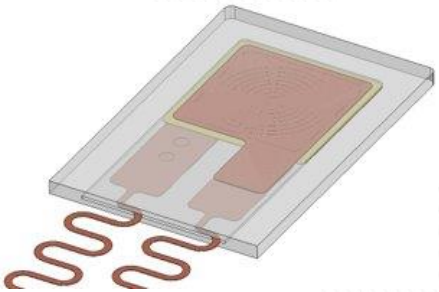
Strain Sensor

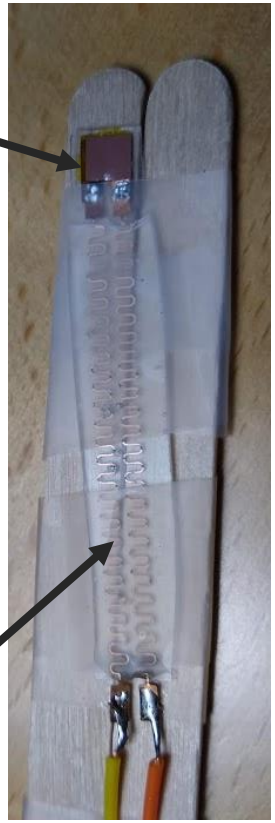
Pressure sensor

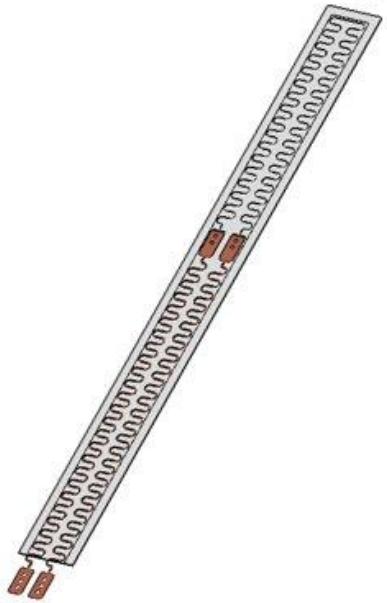
Next steps:

- Improve PDMS Dielectric sensitivity
- Improve assembly process









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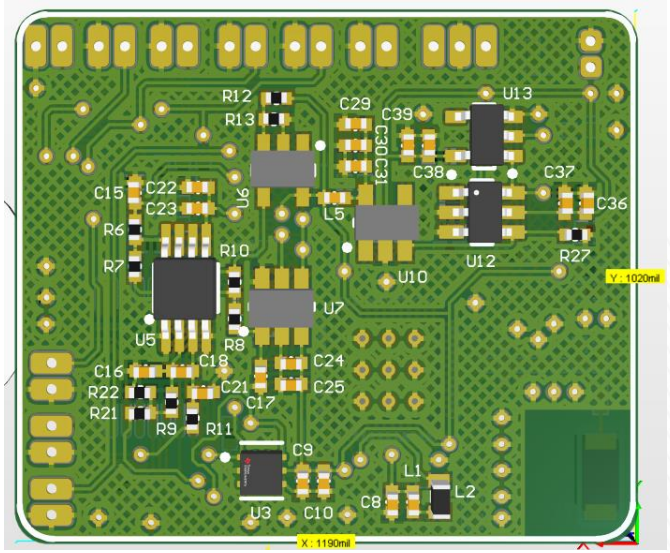
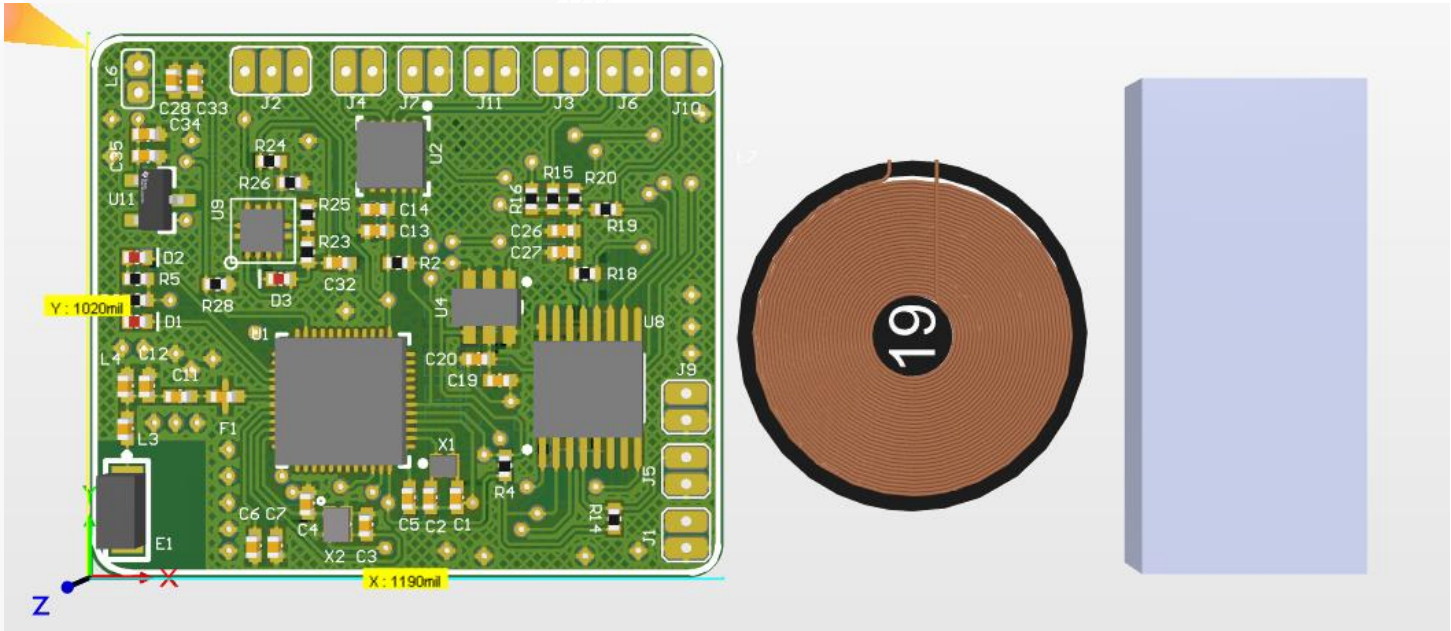
WSG PCB redesign

- Finished flex PCB redesign
- Submitted to Workday





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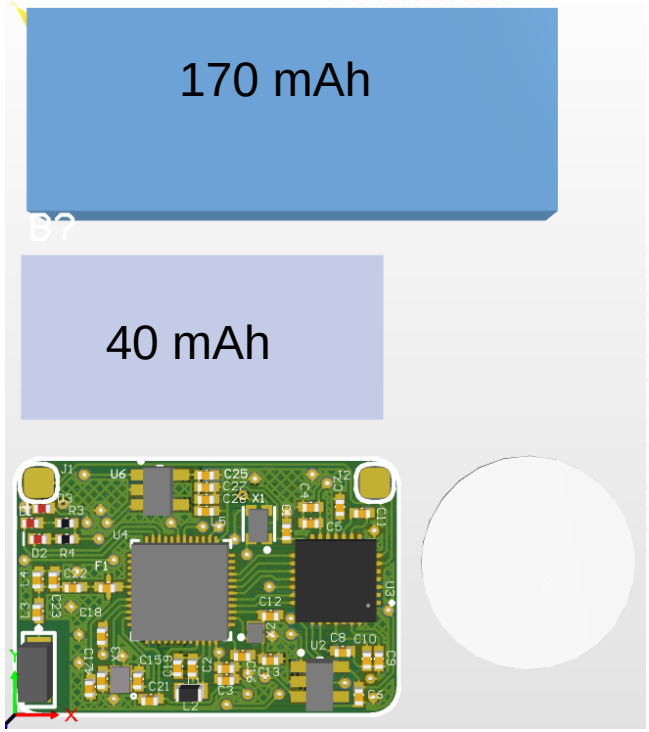
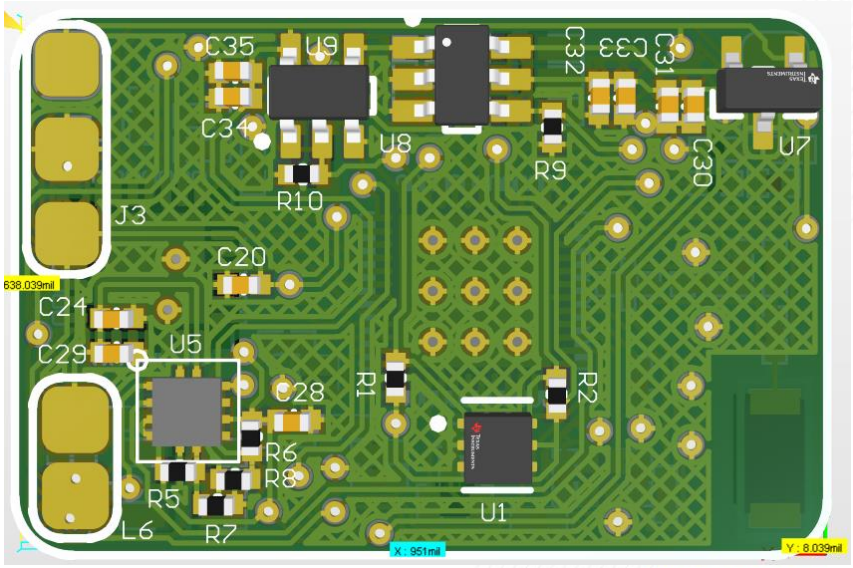
LP-ECG

LP-ECG PCB Redesign

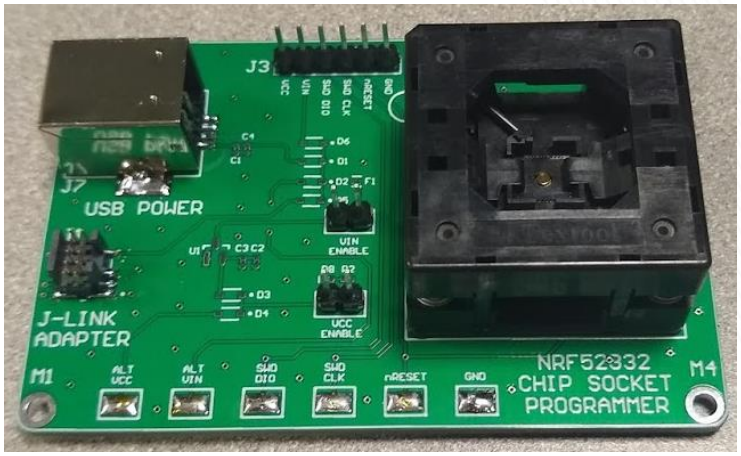
- Dimensions
  - 0.95” x 0.64”
- Ground Plane = Cross hatch
  - More flexible PCB
  - Rounded corners
- More efficient LDOs
- **Ordered through workday**

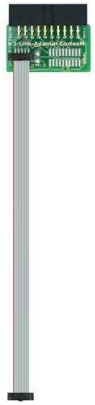


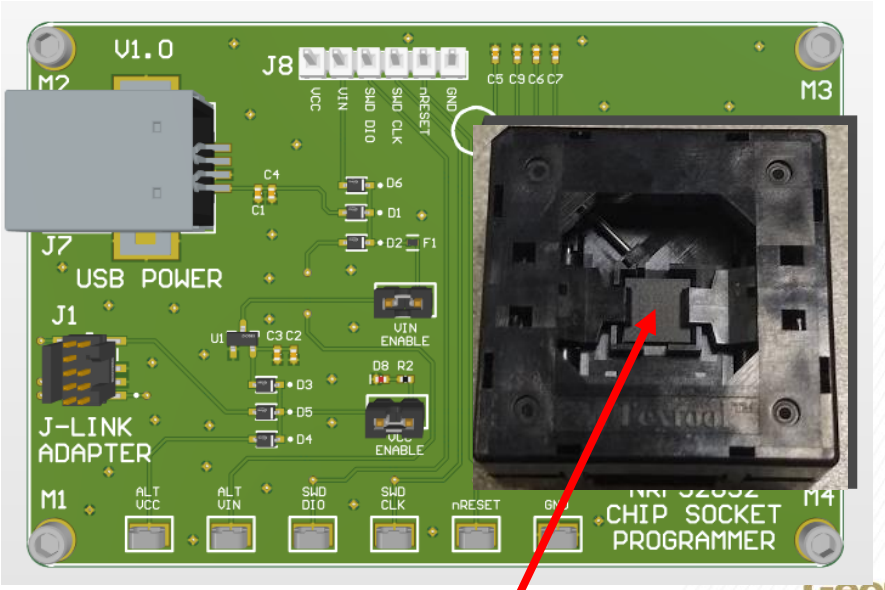


Chip Socket Programmer

- **PCB: DELIVERED**
- **COMPONENTS: DELIVERED**
- **Assembly: TBD**







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PATH FORWARD

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Path forward (6/01/21 – 6/07/21)

- Shriner's Project:
  - Sensor fabrication:
    - Strain sensor
    - Pressure sensor
  - Sensor characterization:
    - Strain sensor
    - Pressure sensor

APPENDIX