Final Presentation

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3D Design for Rapid Prototyping and Rendering

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Goals

- Explore
  - fabrication with different materials, especially flexible, stretchable and rigid.
    - Flexible electronics and 3D printing
- Learn rendering
- Practice with Rhino
- Learn more aesthetic design

Printable sensors / electronics

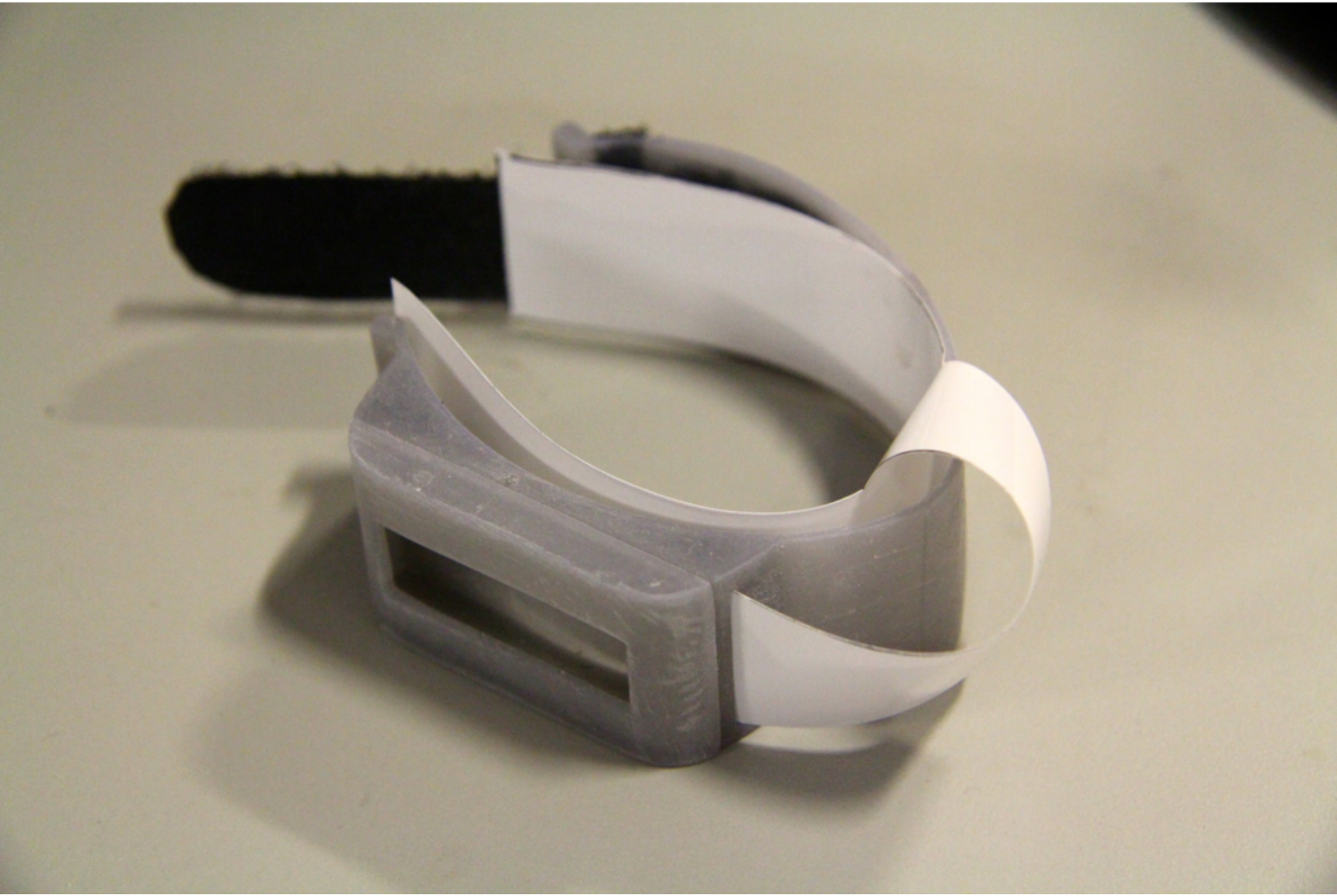
+

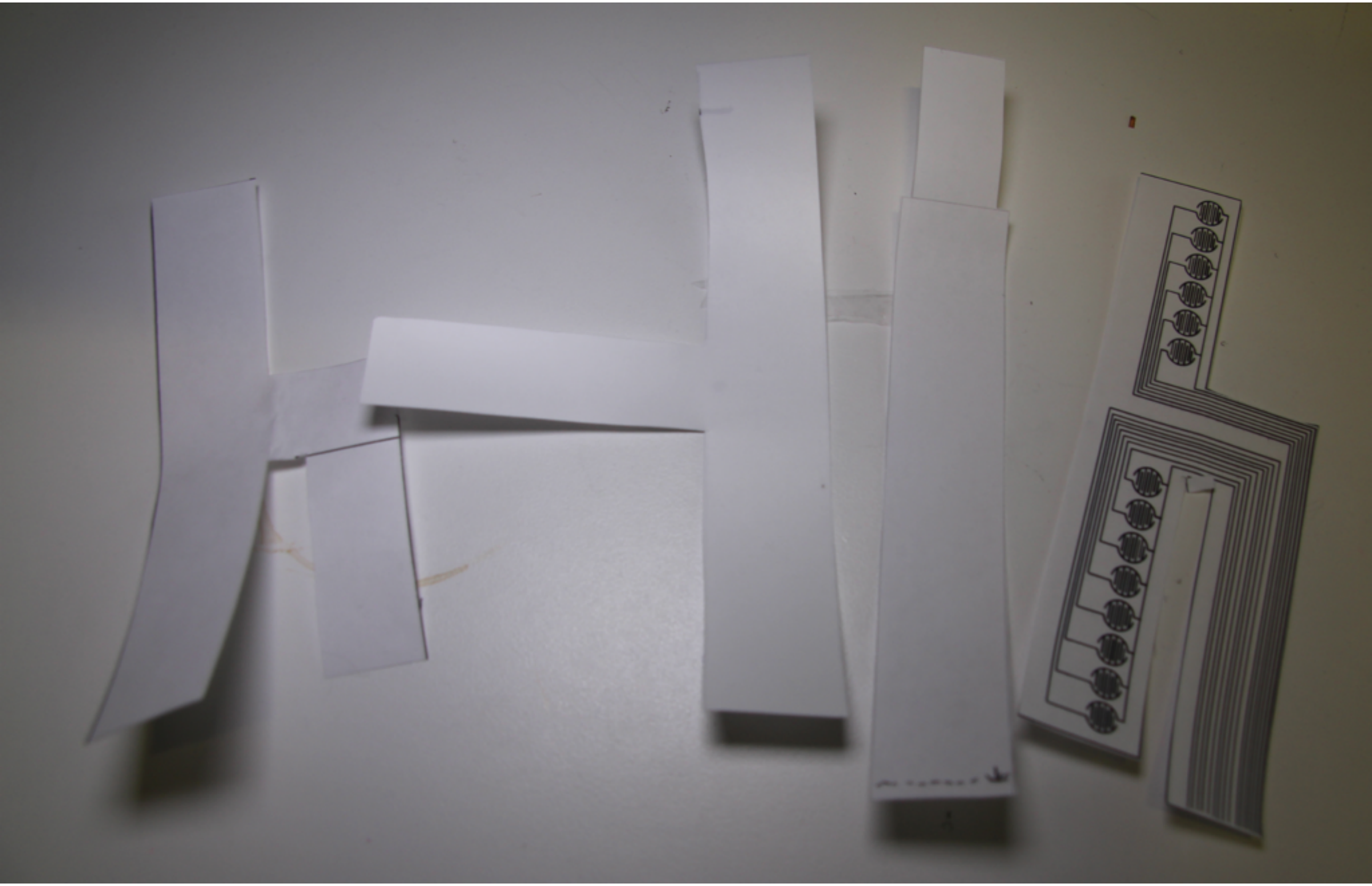
Mechanical parts


[5: 45]


CASIO
WATER RESIST
MONKEY
SWAG


10
14





Altium Designer (13.2) - C:\Users\Artem\Desktop\Gesture Project\pcb_version1\CAMtastic1.Cam - pcb_gesure_v1.PrjPcb. Not signed in.

DXP File Edit View Place Tools Rout Analysis Tables Macro Reports Window Help

C:\Users\Artem\Desktop\Gesture P

Projects

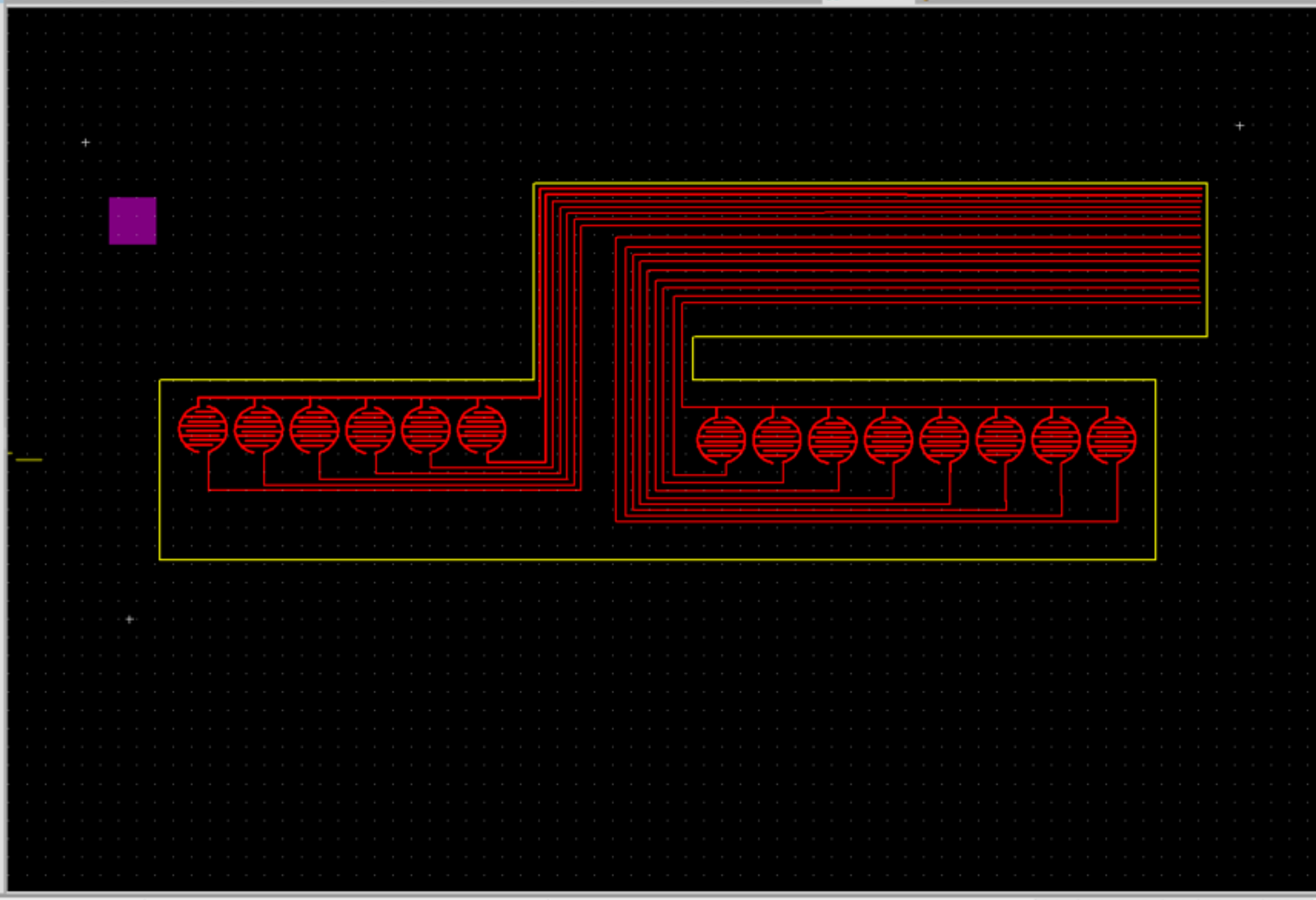
Workspace1.DsnWrk | Workspace

pcb_gesure_v1.PrjPcb | Project

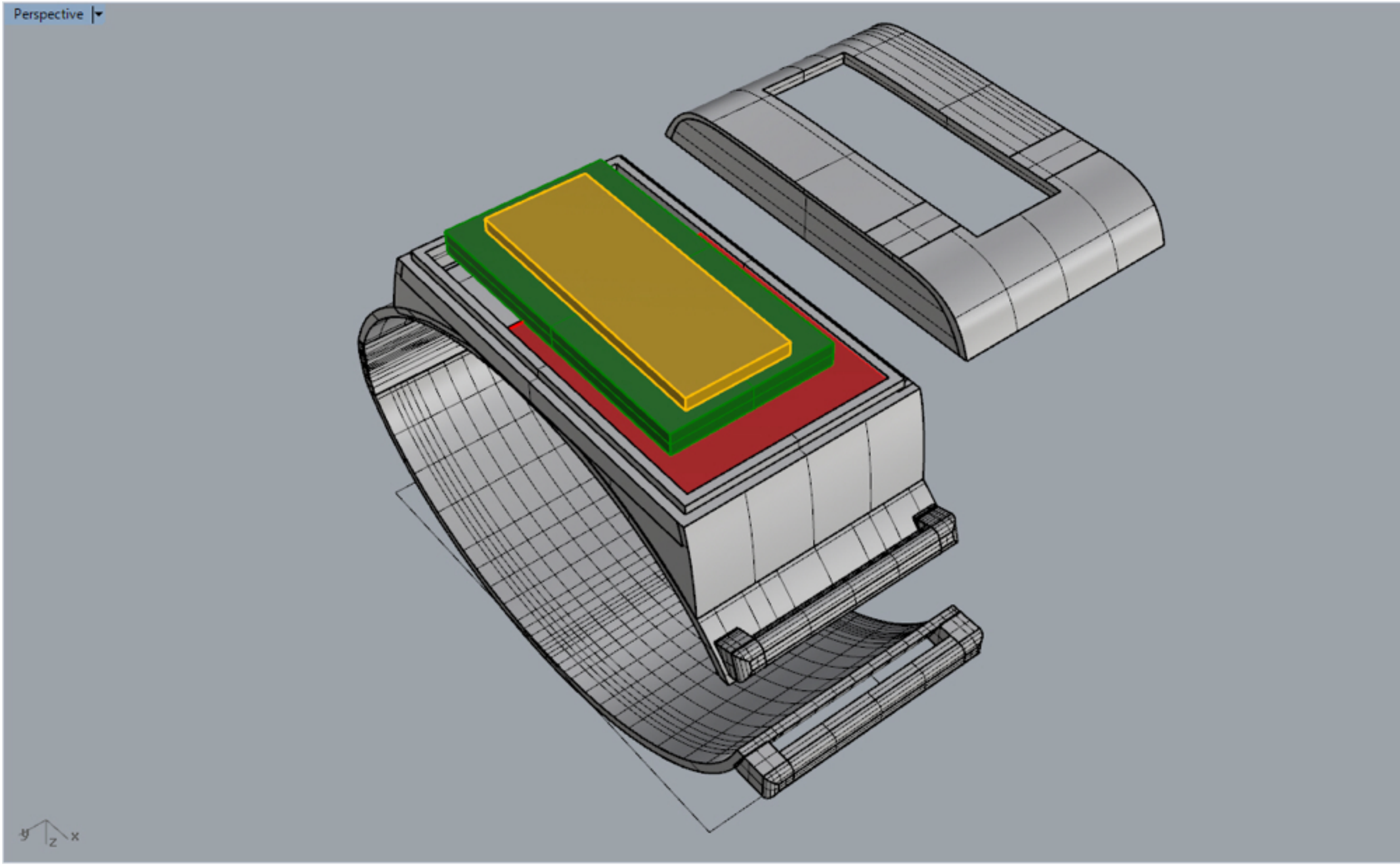
File View | Structure Editor

- pcb_gesure_v1.PrjPcb *
  - Source Documents
    - Gesture_pcb_version1.PcbDoc
    - Top_Gesture_pcb_version1.SchDoc
      - Sensors_Gesture_pcb_version1.Sch
      - Gesture_pcb_version1.SchDoc
    - print_sensors_design1.PcbDoc
    - CAMtastic1.Cam
  - Generated
    - CAMtastic Documents
    - Documents
    - Text Documents
- data_logger_v4_project.PrjPCB
  - Source Documents
    - data__logger_v4_pcb.PcbDoc
    - data_logger_v4_schematic.SchDoc
    - sensors_data_logger_v4_schematic.Sc
    - power_data_logger_v4_schematic.Sch
- NFC-WISP_EPD_0.2.PrjPCB
  - Source Documents
    - NFC-WISP_EPD_0.2 - Top_v2.SchDoc
      - NFC-WISP_EPD_0.2 - Sensors_v4.Sch
      - NFC-WISP_EPD_0.2 - AFE_v2.SchDo
      - NFC-WISP_EPD_0.2 - Power_v1.Schl
      - NFC-WISP_EPD_0.2 - Digital_v5.Sch
      - NFC-WISP_EPD_0.2 - Eink_v3.SchDc
    - NFC-WISP_EPD_0.2 - PCB_v10.PcbDoc
    - CAMtastic1.Cam
    - CAMtastic2.Cam
  - Libraries
  - Generated
- Sensor_tape_design_v1.PrjPcb *
  - Source Documents
    - schematic_sensor_tape_v1.SchDoc
    - board_sensor_tape_v1.PcbDoc
    - tape_v1.PcbDoc
    - Board_gerber.cam
  - Settings
  - Generated

schematic_sensor_tape_v1.SchDoc | Gesture_pcb_version1.PcbDoc | Sensors_Gesture_pcb_version1.SchDoc | Gesture_pcb_version1.SchDoc | print_sensors_design1.PcbDoc | CAMtastic1.Cam | Home



System | Design Compiler | Help | Instruments | CAMtastic


Perspective
y
z
x

What I learned

- Difficult to design wearable devices
  - Shape has to confront to different anatomies
  - Can’t be too rigid.
    - Different materials have to be combined: structure and tension
    - Round shapes, no sharp corners
- FormLab printer is good for semirigid devices
- Flexible electronics can be designed rapidly together with mechanical parts.

Interesting points

- Showing what is import, even if it is not stylish. Designing to communicate an idea.

- Trade-off between functionality, style and comfort

- Build on what was done before.

- Trial and error with rapid prototyping works well for organic shapes. No way to know in advance.

What I didn’t learn

- Photo realistic rendering
- Parametric design
- Gears and moving parts
- 3D animations