Miicraft 50 SOP

Location

The MiiCraft 50 3D printer is located on the west wall lab bench in 2442 Elings Hall

Safety Concerns:

- The resin used for casting PDMS molds is highly toxic. Wear gloves and a labcoat when handling
- Follow proper fume hood procedure when cleaning parts
- Transport prints in dedicated transport containers to prevent resin spillage
- Dispose of liquid waste in labeled waste jugs and solid waste in the yellow waste bin

Training

Training Requirements: In person training is required to use this machine. New users should read the Miicraft manual and follow along to the operating checklist (found on the IW GauchoSpace Website). Supplemental videos are also provided to follow along to

Training Outline Description of the system:

- The system is comprised of the MiiCraft 3D printer, the connected desktop computer with the MiiUtility software, and the IPA bath and cleaning station in Fume Hood #4 a resin tank with a thin teflon bottom is placed over a glass projection window and clamped down to create a flat interface
- A z-axis travelling build platform is lowered into the resin tank, where a fine layer of resin is cured through the teflon bottom using a DLP projector chip
- After printing, the entire build plate is removed and placed in the FormWash station, an agitated IPA bath that will clean off excess resin
- The MiiCraft has a build envelope of 57x32x120 mm (2.24×1.26×4.27 in). The manufacturer

specifications state a 30 μm XY Resolution and a 60 μm feature capability. The current layer recipes include 20 μm, 30 μm, and 50 μm layers.

- The Innovation Workshop has two resins in stock, a clear resin (BV-007A) purchased from

MiiCraft, and a master mold for PDMS devices resin purchased from ResinWorks 3D. Other resins are available from MiiCraft, ResinWorks, and third party vendors.

- The MiiCraft requires 3 file types to complete a print:
  - An .stl file provided by the user
  - An .slc file generated by the MiiPrinter window that contains the layer slice information
  - A .mii file generated by the MiiController window that contains the movement and projection commands

How to Print a Part

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