

**Area/Locality of hazard:** ETB 431

**Supervisor:** Dr. Qiyin Fang

**Phone:** 289-887-3867

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**Name:** Edith Tukpeyi

(Name of person preparing report)

**Office:** BSB B101

## **DESCRIPTION OF POTENTIAL HAZARDS**

### **Fire:**

Possible fire outbreak in building or lab due to electrical hazards.

To prevent fire emergencies, complete fire safety training on-line. One should ensure fire prone equipment is not left unattended. Locate fire extinguisher in work area in case of fire in the immediate vicinity. Follow fire emergency procedures.

### **Heat and Burn Hazards:**

3D-Printer has a hot surface extruder and plate which may heat up between the range of 140 – 300 degrees Celsius. Always check user interface to determine the temperature reading. To protect yourself, make sure to never touch the hot surfaces.

### **Mechanical Hazards:**

3D-Printer includes stepper motors and belts to translate the extruder and stage.

One should never place hands inside the frame of the printer, moving belts, between the stage and the extruder, while in operation. Ensure nothing is caught in any moving parts of the printer.

Printer should be kept in well air ventilated room to ensure effective use.

### **Radiation hazards:**

Lab has a shared laser and non- laser space. Effects of lasers can range from mild skin burns to irreversible injury to the skin and eye.

Personnel requiring entry to a laser lab with laser operations in progress shall knock the door and request permission to enter. Ensure interlocked curtain is closed. Locate eye wash station, in case one encounters a UV lamp or alkaline bath when used to dissolve support material.

### **Electrical Hazards:**

3D-Printer is connected to a wall outlet and controlled by an open board.

Do not operate 3D-printer in or near liquids. Before operation, check power cords, wires connected to control boards for damage. One should ensure control board is free of dust.

Walkways should be cleared from all cables and power boards.

## **PERSONAL PROTECTIVE EQUIPMENT (PPE)**

Eye protection is required during any activity where airborne projectiles may be present (i.e. cutting off rough edges of a printed item) .In lab, closed toe shoes and pants should be worn for non-laser area.

### **Emergency Contact Information/Procedure**

- In a fire emergency, do not investigate the source of fire. Pull fire alarm and contact emergency line 88 .Use stairs to evacuate area immediately (Be calm and walk diligently). Step out to designated area. Contact your supervisor and EOHSS when possible.
- For accidents involving laser radiation, the most possible case could be laser beam into the eyes. Call 88 for immediate assistance. Contact your supervisor and the EOHSS Laser Safety Officer as soon as possible.
- Electrical hazards:  
Incidents may involve electrical shock. Immediately call 88 for assistance.  
Supervisor and EOHSS should be notified to fill out injury/accident report.