

Hazard Safety Report

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1. Potential Hazards which may apply to my project

1.1 Radiation :Laser(visible, infra-red, ultraviolet)

Class 3 high power laser is used in our lab. The primary concern in laser safety is the possibility of eye injury. Important components of the eye are susceptible to damage by laser light of all wavelengths from UV to IR for class3&4 lasers. The second potential hazard is the damage of skin. However, it is considered to be less serious since most of the skin injuries can heal.

1.2 Electrical: High voltage enclosed

High voltage laser power sources are needed for the laser system.

1.3 Fire

Fire may break out due to electrical hazards as well as high power laser hazards.

2. Routine Operating Procedure

2.1 Laser radiation

- (1) First, attend the laser safety training class provided by EOHSS. It's very important that everyone who is supposed to work on laser get this mandatory training before operating any laser systems in the lab. It gives you a basic idea what you are working on, what potential hazards involving and how to prevent them.
- (2) Second, find out the type of laser and its supplier, get the manual and read carefully. It will give you a clear idea about what kind of laser you are working with and how to prevent the hazards.
- (3) When starting working with Class 3&4 lasers, laser safety goggles will always be put on during the experiment. Make sure to use the goggles with right OD and wavelength for this specific laser to effectively block the beam and protect the eyes. Talk to the supplier of eyewear if you are not quite sure. Make sure the eyewear is not losing.
- (4) Understand the hazards can be from direct beam as well as the reflected beam from either secular or cured surfaces. Therefore, remove anything that is reflective. Use warning signs such as "Class III laser in Use, Danger". Use beam stops or curtains to stop the beam within the working area. Make sure the door is secured. Use limited power if possible. You can also work with someone with more experience.

2.2 Electrical high voltage enclosed

- (1) First, attend the Basic Electricity training class provided by EOHSS. It gives you a basic idea about knowledge on basic electricity and how to prevent the hazards.
- (2) Second, find the manuals of your electrical devices and read them carefully. Identify the high voltage devices and operate them with cautions.
- (3) Plug high voltage enclosed device directly into outlets. No multiple power bars. Pull the plug not the cord. Make sure damaged equipment out of service. Never use extension cords in one place over 90 days. Always tape cords to walls or floors never use nails or staples. Use cords rated for the amp or wattage you are using. Never stand in water or let your hands wet.

2.3 Fire

- (1) First, attend the Fire Safety Training class provided by EOHSS. It gives you most important information about how to prevent a fire in your lab and the corresponding emergency procedure.
- (2) Always turn off the power, unplug the device from power sources when the job is done. Do not leave hazardous experiments unattended. Communicate hazard to the Fire Department. Consult all MSDS's before handling chemicals.
- (3) Check out the location of fire extinguishers in the lab. Fire extinguishers can be found across room ETB431 and in front of room ETB435.

3. Emergency Procedure

3.1 Laser radiation

For accidents involving laser radiation, the most possible case could be laser beam into the eyes. For class 3&4 lasers, it can cause loss of sight. In case of that, turn off the power of laser and stop working immediately, call 88 for immediate assistance. Contact your supervisor and the EOHSS Laser Safety Officer as soon as possible. An injury/incident report will be filed with the department.

3.2 Electrical high voltage

For accidents involving electrical high voltage enclosed, it can be an electrical shock, which can cause local muscle contraction, breath difficulty, burns, falls and heart pain. In case of that, turn off the power immediately, call 88 for immediate assistance. Contact you supervisor and EOHSS as soon as possible. Fill out the injury/incident report.

3.3 Fire

For fire, pull Fire Alarm, and then from a safe location, dial 88 for immediate assistance. When alarm rings, shut off gas and power. To evacuate, close doors behind you, use stairs or ramps, do not use elevators. If unsafe to evacuate, shut the door, block cracks and stay low near window. If room door is hot, do not open door, stay low near window. Contact your supervisor and EOHSS as soon as possible.