Instrument Hazards and Best Practices: AFM

This document will cover the inherent hazards when utilizing this piece of equipment as well as the best practices and procedures to avoid danger.

Lab coats are to be provided by the user.

Hazards:
- Chemical exposure
- Ultraviolet light exposure

1. Required PPE
   Appropriate laboratory attire is required at all times in the AMSEC laboratories. Whenever chemicals are being used, an additional requirement of a lab coat is required. Lab coats are to be provided by the user.

   Whenever a user is in the AMSEC labs, the minimum requirement for eye protection is wrap around impact glasses. Anytime liquid chemicals are present in the same room as the user without a direct barrier, all users in the lab must wear chemical splash goggles. Splash goggles must be approved by State of Washington Administrative Code (WAC 296-155-215).

   If chemicals being used are considered toxic, caustic, corrosive, flammable solvents, carcinogenic, mutagenic, or teratogenic, a minimum of disposable nitrile gloves is required. Avoid chemical transfer by taking off gloves when using anything other than the chemical(s).

2. Ultraviolet Light Exposure
   The AFM contains an ultraviolet light sources used for fluorescence imaging. During the common operations that our users carry out, this source is not on. If this source is switched on, please take note of the following. Every effort is taken to reduce the risk of ultraviolet light exposure, however it is impossible to eliminate all possibilities, especially when an accessory item such as the laser ablation is being used which isn’t designed with that in mind.

   It is recommended to avoid eye contact with the plasma at all times unless using the properly shielded window located on the front of the instrument. Placing the protective orange plastic over the hole where the sample is introduced is also recommended to reduce the possibility of making eye contact.