### Name
- Atomic Force Microscopy

### Description
- XE-NSOM Park Systems Corporation

### Location
- E3 -2168

### SOP Creation Date
- 2015-10-26

### SOP Created By
- Paola Russo

### SOP Revision Date
- 

### SOP Revised By
- 

### SOP Location
- E3 -2168

### Manual Location
- E3 -2168

### Equipment Owner
- Dr. Norman Zhou

### Authorized Trainers
- Paola Russo

### Support Technicians
- N/A

#### Significant Hazards
- none

#### Administrative Controls
- Instrument can be used independently at any time by a trained and authorized student or an employee
- Students need to register previously before usage and should be monitored by instrument administrator
- Instrument Administrator frequently visit the lab to observe the safety operation of the instrument

#### Engineering Controls
- none

#### PPE Required
- none

#### Relevant Standards and Codes
- none

#### Relevant MSDS
- Compressed gas cylinders – Oxygen and Argon in the room where the AFM is located

#### Accident Procedure
- See Safety Posters in this lab
- Contact Team Leader, university safety office – ext:33587

#### Emergency Shutdown Procedure
- Dis-approach the tip and lift the cantilever
- Close the instrument control software (XEP)
- Turn off the equipment
- Examples of a causal situation are:
  - fire alarm
  - medical emergency
  - building evacuation
### Pre-start Checklist
Document everything that needs to be done before starting the equipment or process. Include items such as:
- Curtain closed, Door locked
- items to have on hand- N/A
- people to notify- Paola Russo (if you do not have the key to enter the E3-2168 room)
- space conditions – Work area should be clean and organized

### Start-up Procedure
Document the start-up procedure. Include items such as:
- typical problems to watch for- Alert Messages from the XEI software appear in red at the bottom on the left of the instrument control software (XEP)
- resolutions for typical problems- check and the alignment of the red spot on the PSPD Panel
- what indicates all is going well- No alert messages from the XEI software

### Operating Procedure
Document the operating procedure. Include items such as:
- typical problems to watch for- Alert Messages from the XEP software appear in red at the bottom on the left of the instrument control software (XEP)
- resolutions for typical problems- check the alignment of the laser on the PSPD Panel
- what indicates all is going well- No alert messages from the XEI software

### Shutdown Procedure
Document the shutdown procedure. Follow operation manual

### Clean-up
Document the clean-up. Include items such as:
- The scope of the cleanup: Weekly cleanup of lab. The cleaning of the working area is performed after the end of the experiments.
- Use logs or documentation: Operating conditions should be recorded in log book. Problems should be documented on log book.
- where the waste goes: No chemicals, plant operation cleaner

### Lockout
Document the lockout procedure to use when maintenance or repairs are taking place. Identify and address all sources of hazardous energy.

### Maintenance and Repair
Document the maintenance and repair procedures making sure to include items such as:
- schedules and logs
- parts lists
- reference manuals
- suppliers and service companies