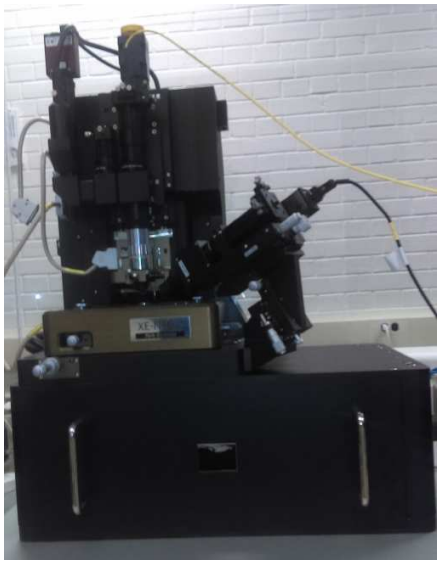
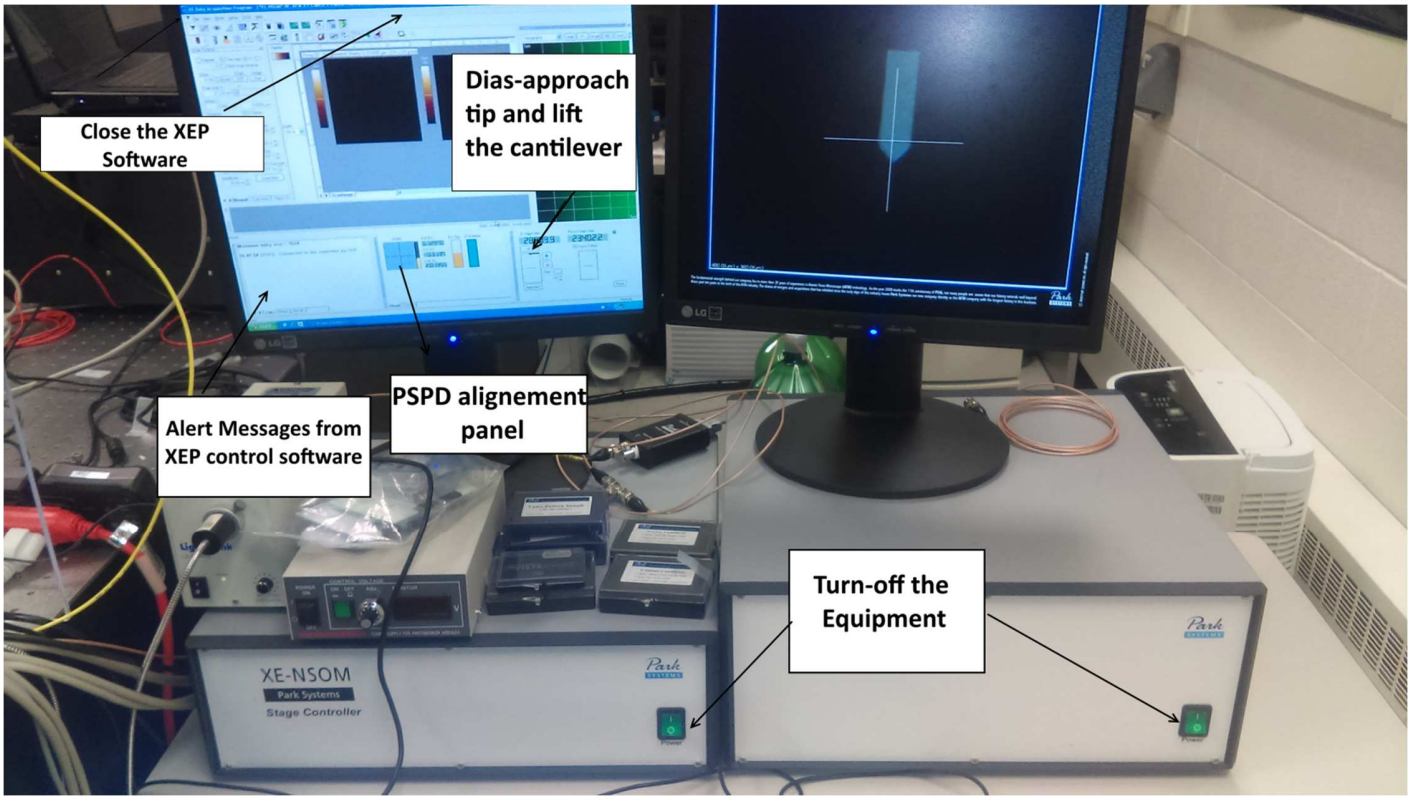
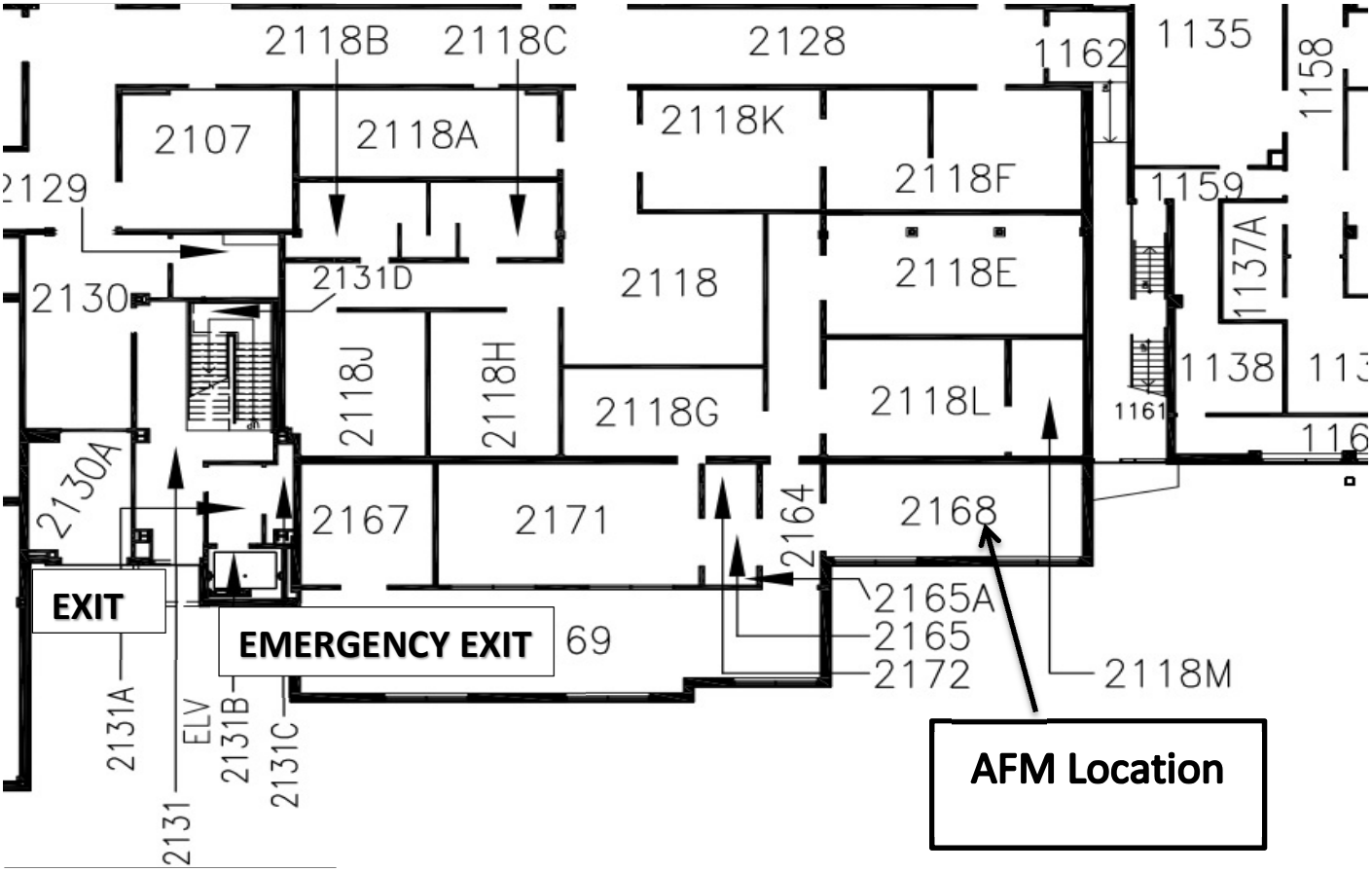
MME Standard Operating Procedure (SOP)

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 an 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: o fire alarm o medical emergency o building evacuation


Close the XEP Software
Dias-approach tip and lift the cantilever
Alert Messages from XEP control software
PSPD alignement panel
Turn-off the Equipment
XE-NSOM
Park Systems
Stage Controller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2131D
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2118E
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2118G
2118L
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1161
2130A
2167
2171
2164
2168
EXIT
EMERGENCY EXIT
69
2165A
2165
2172
2118M
2131A
ELV
2131B
2131C
2131
AFM Location

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 theE3-2168 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 XEP 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