

HAZARD MANAGEMENT – SAFE OPERATING PROCEDURE (SOP)

Only to be completed where required as a control measure under a Risk Assessment

NAME OF THE TASK/ACTIVITY	NT-MDT NTEGRA SOLARIS AFM / SNOM	DATE: 19/02/2020
LOCATION	ADELAIDE MICROSCOPY, GEORGE ROGERS LABORATORY, HELEN MAYO NORTH, NB23	Insert photo (Optional)
RISK ASSESSMENT (RA) NAME	NT-MDT Ntegra Solaris AFM / SNOM	
Residual risk rating on the RA	<input type="checkbox"/> Low <input checked="" type="checkbox"/> Medium <input type="checkbox"/> High <input type="checkbox"/> Very High	
Hazards identified on the RA	Contact with electricity or potential for electric shock Exposure of eyes to a laser beam	

DESCRIBE, IN SEQUENCE, STEPS TO COMPLETE THE ACTIVITY SAFELY

Pre-operational checks

YOU MUST NOT USE THIS MACHINE UNTIL YOU HAVE HAD APPROPRIATE TRAINING BY TRAINED ADELAIDE MICROSCOPY STAFF. Unauthorised use may result in damage to the instrument.

Operational checks/steps to complete the activity from start to finish (including transport and waste disposal where relevant)

General

The NT-MDT Ntegra Solaris AFM/SNOM is an atomic force microscope in which a laser is used to provide a feedback loop to the scan head. The AFM has an inbuilt Class 2 laser (according to the Australian Standard AS/NZS 2211.1:2004) (1mW, 650nm) housed in the scan head.

Hazards

Potential for electric shock if a user were to remove panels from the microscope.

Exposure of eyes to the laser beam can cause blindness.

Risk Control Measures

Engineering controls:

The user operable parts on the NT-MDT Ntegra Solaris AFM/SNOM are all accessible from the front of the instrument, and include the microscope and scan head, and the computer (switch, mouse and keyboard). There is no risk involved in the operation of these parts. However, misuse of these parts can result in damage to the instrument. Users of the instrument should not remove any fixture or panel from the microscope or access the rear of the instrument.

The type of laser on the instrument does not cause damage to eyesight for a brief exposure of less than 0.25 seconds which allows for the blink reflex; however, care must be taken when handling as direct exposure to the eyes for a period longer than this can cause eye damage.

The laser points downward from the scan head. When the scan head is tipped upside down so that the direction of the laser is upwards, the laser switches off automatically (an inbuilt function of the scan head) so it will not shine into the user's eyes.

If handled correctly and according to the applicable NT-MDT operating instruction manuals, the AFM head should pose no danger to users.

Procedural controls:

Only trained users to operate the instrument. All new users are to be given practical training in instrument operation by a member or Adelaide Microscopy staff. Users should operate the instrument in accordance with the manufacturer supplied operating instructions to avoid damage to the instrument.

The user operable parts are all accessible from the operator's console; users of the instrument should not attempt to remove any fixture or panel from the microscope.

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Users must not tamper with the instrument such that they can look directly into a laser beam or a reflection of a laser beam. Users must not introduce any reflective objects into the laser beam path.

The handling of other laboratory items (for example, sharps, clearing agents and chemicals) must follow the relevant safe operating procedures.

General Procedures:

Users should operate the instrument in accordance with the manufacturer supplied operating instructions under the instruction of a member of Adelaide Microscopy staff.


On completion of work – steps to make safe (including clean up, any waste disposal & service/maintenance requirements)

Follow the shutdown procedure in the manual.

Emergency and Spill Procedures, Transport or storage requirements (where relevant), First aid/Medical

In the event of an injury, please advise an Adelaide Microscopy staff member and first aid officer for treatment and the local HSW representative to report the incident.

Prepared by

People involved in the drafting of this SOP	Ken Neubauer Aoife McFadden		
Person authorising the SOP	Name:	Angus Netting	Signature 
	Position:	Director, Adelaide Microscopy	
This SOP must be reviewed after any incident/injury associated with this activity or when a Risk assessment is reviewed.			

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