


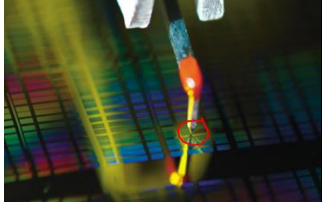


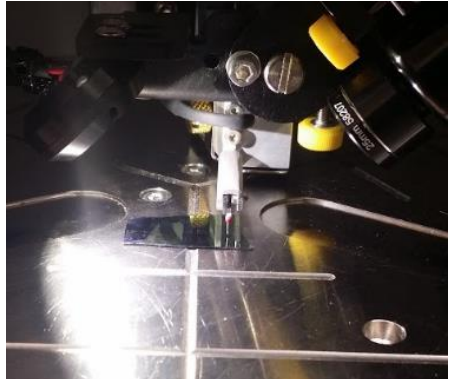



SHINE ATE Regional Center – NSF DUE# 1204279
Number: _____ 05
WORK INSTRUCTION BREAKDOWN SHEET

Operation: Profilometer **Startup/Shutdown**
Instrument: Bruker Dektak XT Profilometer

Important Warnings:

The base holding the stylus arm/cover should <i>never</i> touch the sample.	Only the stylus tip should make contact with samples. The “Tower Down” button/icon (used later in the SOPs) lowers the stylus until a light resistance force is detected at the stylus tip. Failure to place the sample directly under the stylus tip will prevent this force from being detected, which will cause the base that holds the stylus arm/cover to continue lowering until the motor burns out or the instrument is turned off. In such an instance, use the Power Off or EMO (emergency off) button to immediately stop further damage.	
Do not create <i>horizontal</i> stress/strain against the stylus.	Samples with a feature height of greater than 50mm can result in the stylus getting stuck in areas that would damage the tip. Similarly, setting up a scan such that the stylus will run off the edge of the sample can also break the tip off. The safety force limit is set for a vertical force and doesn't recognize if it is caught horizontally. If the tip is stuck on an edge of a hard sample, this could pull the stylus holder out or otherwise damage the sensor head.	
Extreme care should be taken when cleaning the tip. Clean samples prior to use to maximize stylus life.	Past problems with the profilometer and software have been caused by damage during changing or cleaning the tip.	

IMPORTANT STEPS	KEY POINTS	REASONS WHY
A logical segment of the operation when something happens to advance the work.	Anything in a step that might: <ol style="list-style-type: none"> 1. Make or break the job 2. Injure the worker 3. Be a Cultural Consideration 4. Make the work easier to do (i.e., “knack”, “trick”, special timing, or bit of special information). 	Reasons for each key point.
To turn on the profilometer, press “ ” on the power switch located between the profilometer and the computer.		
Turn on the computer.		
Start the Vision64 software located on the computer desktop.		
Read and click OK on the two Operator prompts for “XY” and “Theta” to home the tower and illuminate the stage.		<ul style="list-style-type: none"> • XY controls the orthogonal positioning of the stage and Theta controls the rotational positioning of the stage. • These prompts initiate the system; when the software is started, the stage and tower will default to their home position.
Put on clean/disposable gloves.		Minimizes contamination.
Open profilometer door and place sample on stage with goal of roughly lining it up directly underneath the stylus tip.	<ul style="list-style-type: none"> • Maximum sample height is 50mm. • Clean and dry samples prior to placement on stage. • Use hands to position sample on stage ensuring it is lined up underneath stylus tip when it descends. 	<p>Lowering the stylus to a point outside the sample and then scanning towards the sample can result in destruction of the stylus or damage to the motors that move the tip.</p> 

<p>Once the Operator is confident of a rough alignment from stylus tip to sample, lower the stylus tip.</p>	<ul style="list-style-type: none"> Click the “Tower Down” button and immediately place cursor over the cancel button and be ready to cancel. If, while the stylus is lowering, it doesn’t look aligned, press cancel, and roughly align by hand again. Repeat previous two key points until stylus tip contacts sample. 	<p>This provides an opportunity to prevent crashing the stylus into the stage.</p> 
<p align="center">Proceed to “Profilometer Operations” Work Instructions</p>		
<p align="center">Shutdown</p>		
<p>Remove the sample from the stage.</p>	<ul style="list-style-type: none"> Click on the “Measurement Setup” tab, and select “Unload Sample”. “Tower Home”, or “Tower Up” can also be used to raise the stylus tip safely away to load and unload samples. Retrieve sample from stage. 	
<p>Return stage to home.</p>	<p>Click on “Load Sample”.</p>	
<p align="center">Save files, exit software and shut down computer.</p>		
<p>Turn Bruker profilometer off.</p>	<p>Press the “0” button on the controller between the computer and the Bruker.</p>	
<p align="center">Close profilometer hood and remove disposable gloves.</p>		