PROCESS BATCH SHEET (Photo) **Issue 7** **Page____of____**

ENSC Batch No._____Wafers Started_____Date_____
Material_____Orientation_____Size_____Thickness_____
Resistivity_____ Type_____
Wafer Vendor_____Vendor Batch #_____SFU P.O._____

Process Step #	Process Conditions	Oper & Wafer #	Comments
_____**A**	**Prebake (Optional)** Temp = 100C. Time = 20 min Cool to room temp before spinning photoresist.		Optional, depending on recent history of wafers.
_____**B**	**Spin Primer, Back Side (Optional)** Shipley Microposit. Flood surface. 4000 RPM. 30 seconds. Be sure chuck is clean, to avoid contaminating front of wafer.		Optional Steps, Back Side Processing: Back side processing, consisting of steps B(optional), C and D, is normally performed only for micromachining applications where the back of the wafer is to be processed or protected. Optional Step: HMDS (hexamethyldisilizane) is an adhesion promoter. Normally used only on wafers that have already been processed in EDP. Occasionally used on other wafers if resist adhesion is a problem.
_____**C**	**Spin Photoresist, Back Side (Optional)** Shipley SPR2. Flood surface. 4000 RPM. 30 seconds. As above, chuck must be clean.		Optional Step, Back Side Processing
_____**D**	**Soft Bake, Back Side (Optional)** Temp = 100C. Time = 5 min		Optional Step, Back Side Processing
_____**E**	**Spin Primer, Front Side (Optional)** Shipley Microposit. Flood surface. 4000 RPM. 30 sec		Optional Step: As in Step B, primer is used only if required because of actual or potential adhesion problems. Be careful not to scratch coating on back side, if present.
_____**F**	**Spin Photoresist, Front Side** Shipley SPR2. Flood surface. 4000 RPM. 30 seconds.		Be careful not to scratch resist on back side, if present.
_____**G**	**Soft Bake** Temp = 100C. Time = 20 min		
_____**H**	**Inspect (Optional)** Microscope with yellow light		Optional inspection for obvious resist problems.

_____I	**Exposure Tests (Optional)** If correct exposure not known.		Exposure varies with surface and mask type. An Al surface might require 8 seconds with a chrome mask and about 15 seconds with an emulsion mask. An oxide surface might require about 30 seconds with an emulsion mask.
_____J	**Align and Expose** Use test results or experience.		
____K	**Develop to endpoint** MF319, undiluted. Room temp. Slight agitation until no more resist is being removed. About 60 seconds is typical time.		
____L	**Rinse** Running DI H2O for > 3 min		
____M	**Dry** Do not spin. Resist contaminates chuck. Blow dry with dry N2 and bake briefly in soft bake oven if necessary.		
____N	**Inspect** Microscope with yellow light. Look for complete development and/or damage.		Undeveloped resist may show as deposits in corners of developed areas.
____O	**Hard Bake** Temp = 120C. Time = 20 min		Excessive hard bake can compromise resist strip. Too little hard bake can reduce resistance to etchants.
____P	**Inspect** Microscope with yellow light and measurement capability. Be sure that resist is properly exposed and developed and is in suitable condition to carry out your subsequent process steps. Measure resis t if required.		<u>Measurement optional.</u> Check lab requirements.