Sub-Protocol: Silanization

Description: This document details the protocol for the establishing a monolayer of A-174 silane between the metal layer and Parylene C insulation to improve inter-layer adhesion.

MATERIALS

A-174 Silane
Isopropanol
Aluminum foil

EQUIPMENT

Glass dishes designated for A-174 silane
Graduated cylinder designated for A-174 silane
Crystalizing dish labeled for A-174
Wafer cassette designated for A-174
Stirring rod

PROCESS

1. PREPARE SILANE MIXTURE

1.1 Prepare a mixture of 900 mL DI water, 900 mL isopropanol, and 9 mL A-174 silane in a large glass beaker (volume ratio of A-174:IPA:DI water is 1:100:100)
   a. This volume is used for batches of 12 wafers; smaller quantities using the same ratio can be used for smaller batches
   b. Use designated graduated cylinders for the silane mix

1.2 Gently stir the mixture for 30 seconds. Cover the beaker with aluminum foil and let sit for at least 2.5 hours, but no more than 24 hours.

2. SOAK WAFERS

2.1 Transfer the A-174 mixture into crystallizing dish.

2.2 Soak wafers face up in wafer cassette in the A-174 mixture for 30 minutes. Wafers must be fully submerged.

3. AIR DRY

3.1 Remove the wafers and place on TexWipe in the fume hood face up and air dry for 30 minutes.

4. ISOPROPANOL RINSE

4.1 Rinse the wafers thoroughly with IPA for 30-60 seconds using a squeeze bottle.