NOEL Technologies

Lift-Off

"Lift-Off" processing for films that cannot be plasma etched due to either un-available dry chemistries; or wet chemically removed; due to line-width undercutting which result in poor critical dimension control. Metal films that have been successfully "lifted-off" include: Al., Ag., Ru., Ni., Cr., Ti., TiN, Pt., with critical dimensions ranging from the sub-microns to hundreds of microns.

Noel Technologies incorporates 1 of 3 documented "lift-off" lithography processes:

1. Single layer positive
2. Negative resist processing
3. Bilayer process in which the "undercut" can be tailored to the customer's specification.

Lithography:

A. Substrates are resist coated.

B. Customer specific mask designs are patterned onto the individual substrates.

C. Substrates are coated with the customer's requested metal film.

D. Wafers are "soaked" in either a heated NMP solvent or if easily removable; a room temperature acetone. Substrate is agitated to remove over-burden metal resist (metal on top of the resist), is completely and cleanly removed.

Once completed through the lift-off process, the substrates are comparable to products that were patterned and etched in the conventional method; employing either plasma or wet-etch methodologies.

Please note that any metals not compatible or complementary to Noel's existing work flow, are processed in isolated work areas to avoid cross-contamination.