Chapter 4.3

Standard i-line Photoresist Processes

Standardized i-Line Photoresists at the Marvell Nanofabrication Laboratory		
	Dow Chemical OiR 906-12	**Dow Chemical SPR 220-7.0**
Thickness Range:	1.0 - 2.8 µm	7 - 12 µm
Spin Coat **Spin Speed (RPM):** **Time:** **Dispense:**	(svgcoat1 & 2) 4100, 2000, 1300, 820 30 sec. Dynamic, static for 2.8 µm	(svgcoat1 & 2) 1800 30 sec. Static
Thickness:	1.2, 1.7, 2.1, 2.8 µm	10 µm
Prebake (soft bake) **Temp:** **Time:**	(hotplate on svgcoat1 & 2) 90 ºC 60 sec. (1.2, 1.7, 2.1 µm are contact, 2.8 µm is proximity)	(hotplate on svgcoat1 & 2) 115 ºC 300 sec.
Exposure **Dose:** **Exp time:**	(gcaws6) > 130 mJ/cm2 1.0, 1.2, 1.8, 3.4 sec.	(gcaws6) ~300 mJ/cm2 ~2.5 sec.
Post Exposure Bake (PEB) **Program:** **Bake Temp:** **Bake Time:** **Chill Time:**	(hotplate on svgdev1 & 2) Program 1 120 ºC 60 sec.	**Wait at least 30 minutes after exposure before performing PEB** **115 ºC, 6.5 min.** **hotplate**
Develop **Developer:** **Program:** **Method:** **Temp:** **Time:**	(svgdev1 & 2) OPD-4262 Program 1 Puddle 20 ºC 60 sec. (2x30 sec.)	(msink1 & 2) Dow Chemical MF-26A N/A Manual Immersion 20 ºC 3 -15 min. with agitation
Rinse **Method:** **Time:**	(svgdev1 & 2) Automated 40 sec.	(msink1 & 2) Manual Immersion 120 sec.
Dry **Method:**	(svgdev1 & 2) Automated	(msink1 & 2) Manual

Hard Bake **Method:** **Temp:** **Time:** **or** **UV Bake** **Method:** **Temp:** **Time:**	(hotplate on svgdev1) Automated 120 ºC 60 sec. or Refer to UV bake System recipes (Chapter 4.34) (Chapter 4.35)	Hot plate Manual 80 ºC 15 min. Results may vary
Strip **Stripper:** **Method:** **Temp:** **Time:**	(msink1) PRS-3000 Bath 80ºC 5 min.	(msink1) PRS-3000 Bath 80ºC 30 min. or (matrix) Plasma 3 min. 30 sec.
Post Strip Rinse/Dry **Method:** **Time:**	(srdmsink1) Standard recipe Rinse /Dry 5 min.	(srdmsink1) Standard recipe Rinse /Dry 5 min.