# 6H-SiC Etching– Panasonic 1

Data from K. Vampola and S. Newman

# Recipe for Patterned SiC etching

*Chamber Prep:*

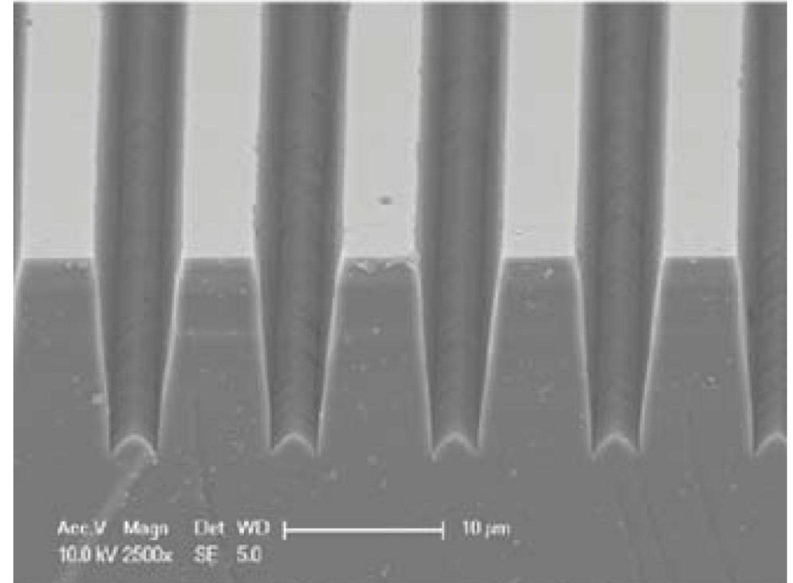
10 min O2 clean (#121)
Si carrier wafer

*10 min. SF6 Chamber Prep. Recipe:*

40 sccm SF6
0.8 Pa (start with 3.0 Pa to ignite plasma)
900 W ICP, 200 W Bias
Aluminum carrier wafer !!!

*SF6 SiC Etch Recipe:*

40 sccm SF6
0.8 Pa (start with 3.0 Pa)
900 W ICP, 200 W Bias
400 Pa He cooling
Aluminum carrier wafer !!!




Etch Rate: 540 nm/min
Selectivity: 50:1 with Ni-hard mask

Note: After Ti-Ni lift-off a 10:1 micro-organic soap Q-tip wiping is done to prevent micromasking from lift-off metal particulates

# Etch Rate Variation for Substrate Removal

| | | |
|---|---|---|
| Equipment | Panasonic ICP | |
| Pressure | 0.8 | Pa |
| Gas | SF6 | |
| Gas Flow | 40 | SCCM |
| ICP Power | 900 | W |
| Carrier Wafer | Al | |

Note: Etch rate lower than patterned recipe
Loading Effect Present.