1.6a Silicon Carbide Deposition (2% SiH₄ in N₂)

Mode: Plasma Etch (PE)
Pumps: Mechanical
Susceptor Material: Aluminum
Temperature (°C): 200-350

Electrode Size: 6" 8" 11"

Gases (sccm):
SiH₄ (2% in N₂) 400
CH₄ 100

Pressure (mTorr): 500
Power (Watts): 50

Typical Deposition Rate (Å/min.): 80

Notes:
This process yields a compressive stress of 1.5x10⁹ dynes/cm². The index of refractive is approximately 2.0. If you decrease the pressure, the intrinsic film stress becomes more compressive. Increasing the pressure reduces the refractive index and increases the deposition rate (900 mTorr = 150 Å/min). At CH₄/SiH₄ ratios greater than 1:1, the film may become pyrophoric.