

Anisotropic Parylene Etch for High Aspect Ratio Features and Shadow Masks

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Shadow masks need at least 10 um of parylene thickness, preferably 20 um.

The process parameters are as follows -

Tool: Oxford 100 ICP

Set Pressure : 0

He backside pressure : 10

Gases : Argon (10 sccm), O₂ (10 sccm).

ICP : 400 W

RF : 100W

Temperature 5 Celsius

Approx. etch rate of parylene - 0.4-0.5um/min

10-11um of hard baked AZ 9260 survived approx. 12 mins of etch with this recipe. I haven't etched more than 6um of Parylene using the recipe.

I did not take any measurement for the etch rate of the PR. I saw that 10-11um of hard baked AZ 9260 did last for 12 mins of etch time. It might last longer but I haven't tried it.