Brian Thibeault and Ning Cao, Nanofab Lab, UCSB

A)GaAs Etching#1 using RIE#5 (1-29-2013)

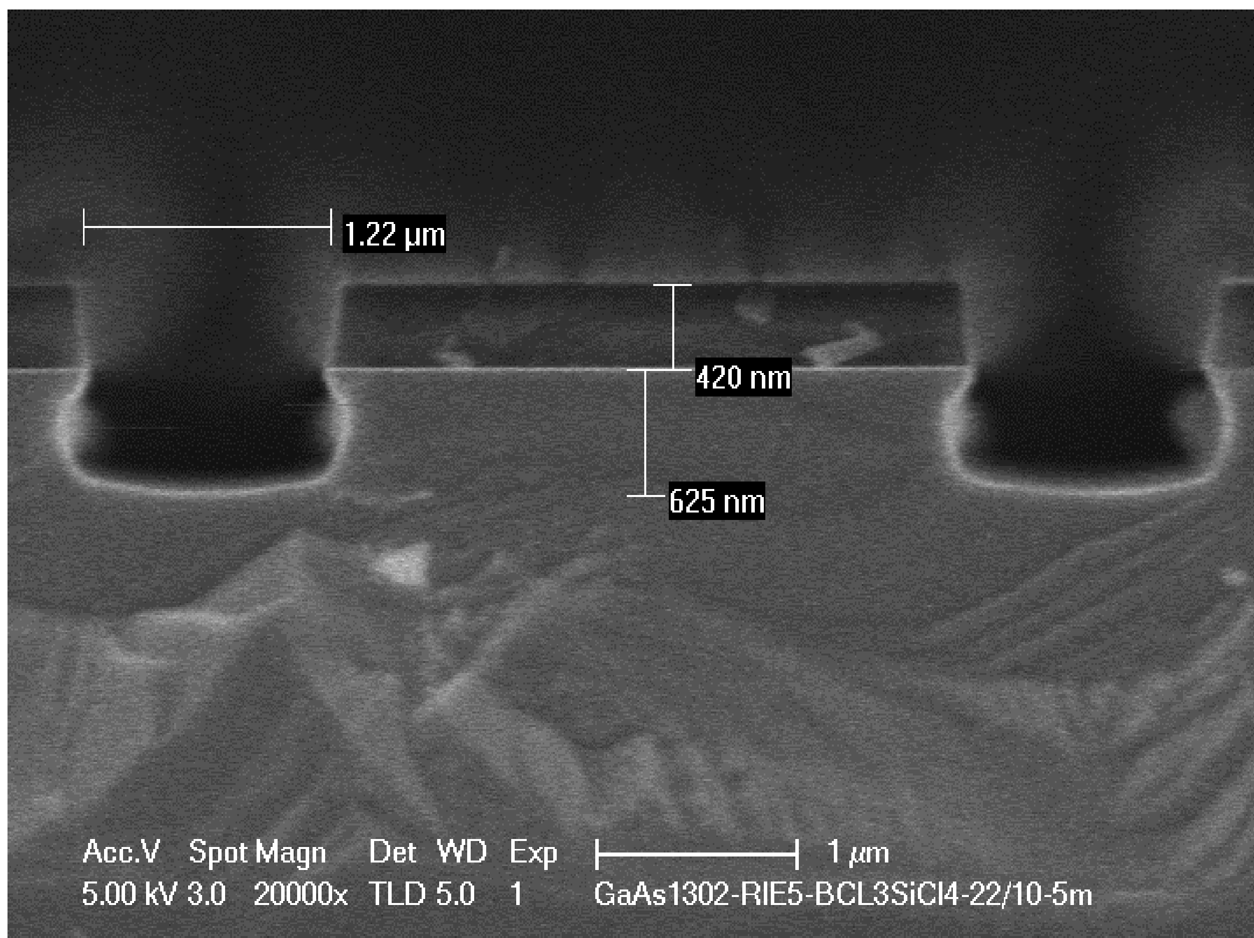
1)RIE#5 Chamber Coating: 2 minutes

2)Sample Wet Clean: HCl:H2O (1:10) 30 s

3)GaAs Etch: 10mT, 100W, BCl3/SiCl4 flow-rate=22/10sccm, and etch time=5 minutes

(using sapphire carrier)

Result: Etch Rate=124.5nm/min; Selectivity(GaAs/SiO2)=8.1 (Note: too much chemical etch component. Solution: increase the bias power or reduce the BCl3 flow-rate).



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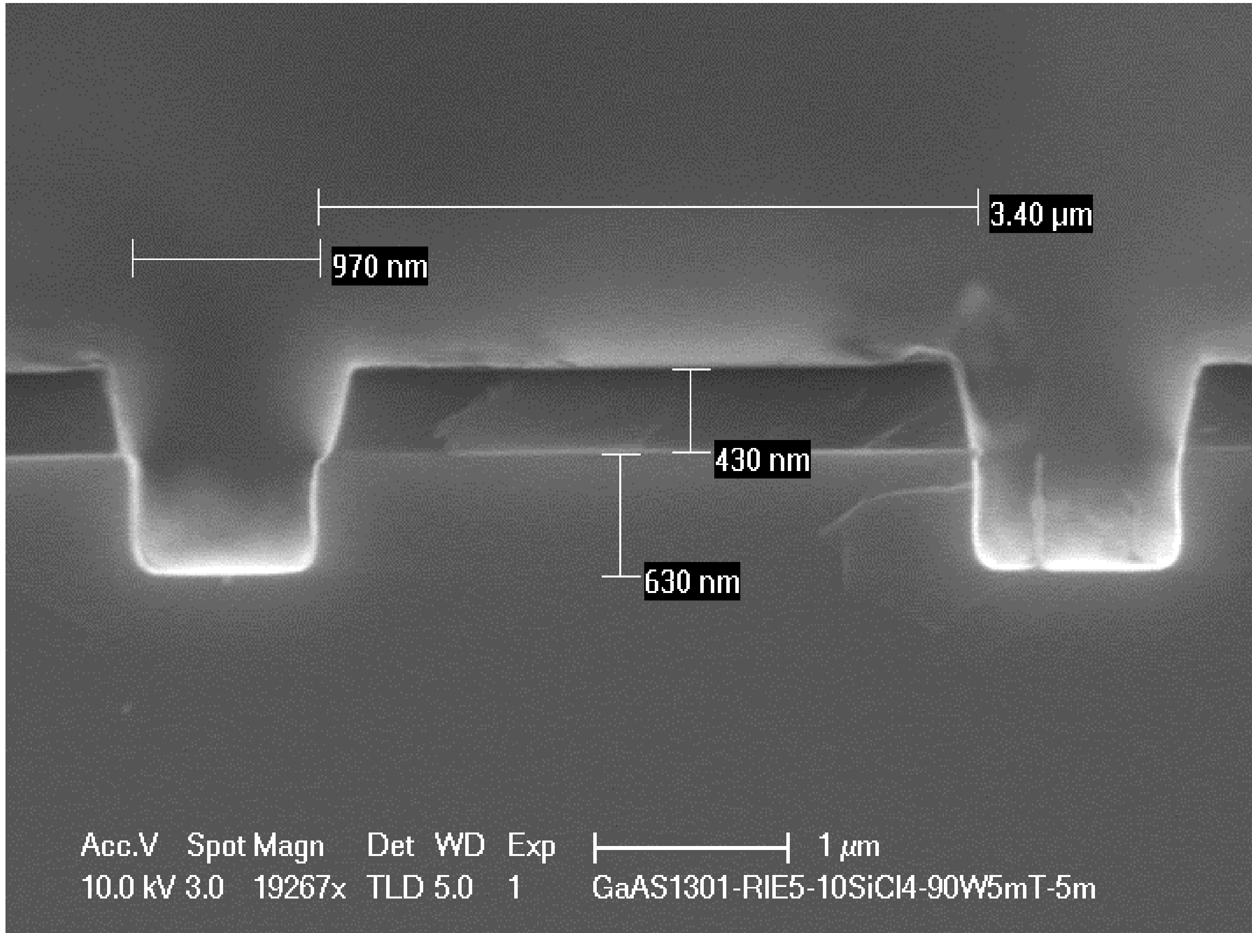
B)GaAs Etching#2 using RIE#5 (1-24-2013)

1)RIE#5 Chamber Coating: 2'15"

2)GaAs Etch: 5mT, 90W (230v), SiCl4 flow-rate=10sccm, and etch time=5 minutes

(using sapphire carrier)

Result: Etch Rate=126.2nm/min; Selectivity(GaAs/SiO2)=9.3



C)GaAs/AlGaAs Etching#3 using RIE#5 (*B. Thibeault)*

GaAs/AlGaAs Post Etch: *5mT, 110W, $SiCl_4$=10sccm,*

Etch rate: ~90 nm/min. PR mask (still remaining on the top)