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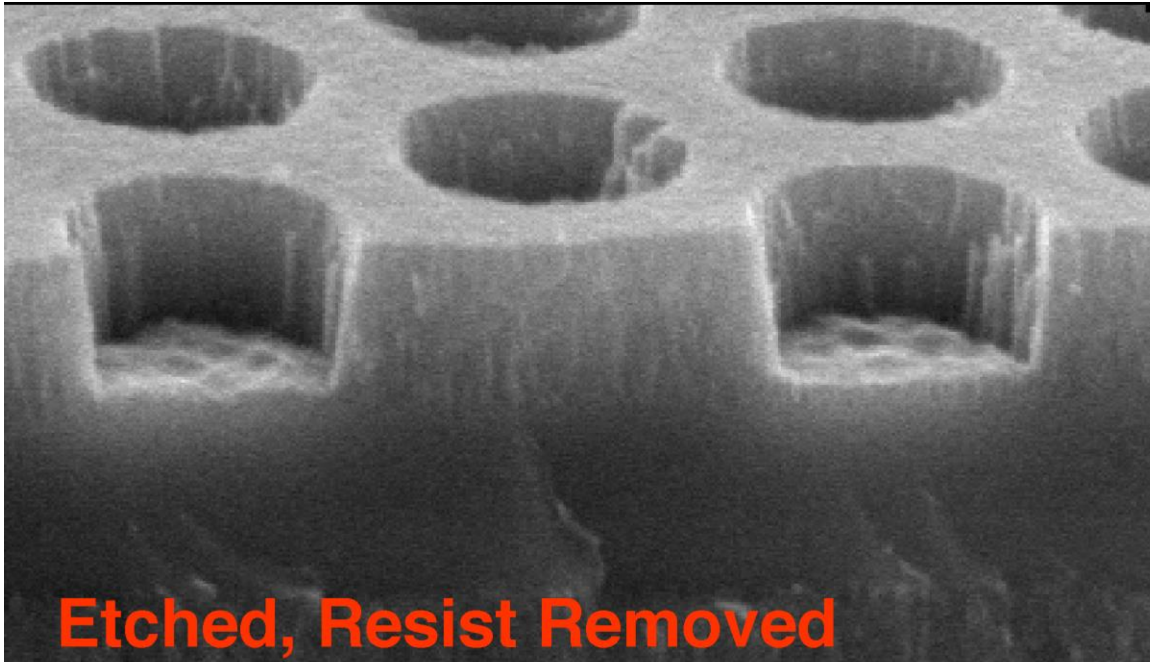
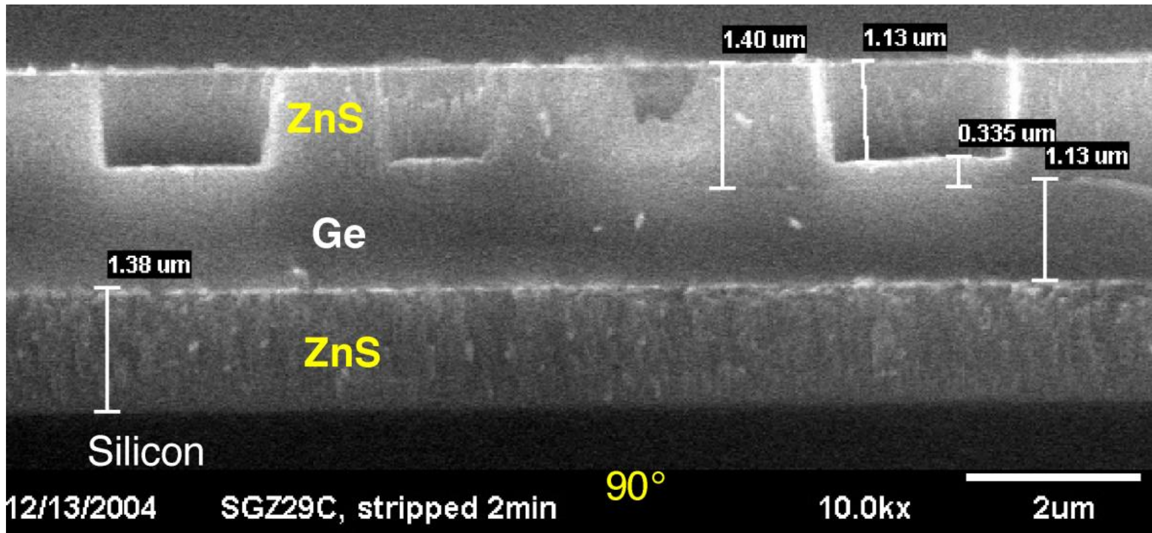
Plasma Etch of ZnS using RIE#2

Substrate temperature=50 ^{0}C, a hard-baked-resist mask was used.

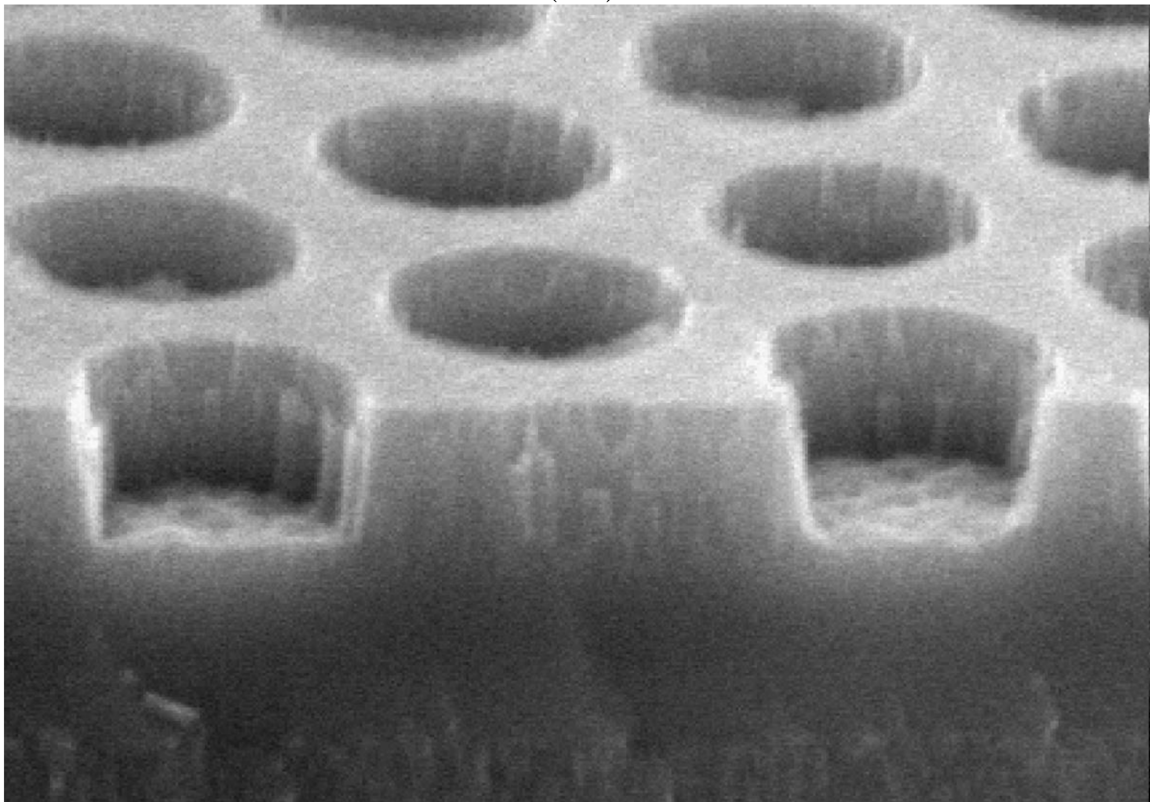
Figure 1 Etch profile of SGZ29C [ZnS-etching of the etch cycle: pressure=40 mT, CH_4/H_2 flow rate=4/32 sccm, bias voltage=650 v (bias power~181 W), etch time=25 minutes; O_2-plasma-polymer-cleaning of the etch cycle: pressure=50 mT, O_2=20 sccm, bias voltage=200 v, clean time=5 minutes; number of cycles=3]. (a) Resist mask removed by O_2 plasma for 2 minutes (a-1: taken from 70^0; a-2: taken from 90^0); (b) Resist mask removed by resist stripper ALEG355 in warm ultrasonic for 2 minutes (b-1: taken from 70^0; b-2: taken from 90^0); (c) Resist mask removed by resist stripper ALEG355 in warm ultrasonic for 2 minutes and O_2 plasma clean (c-1: taken from 70^0; c-2: taken from 90^0).



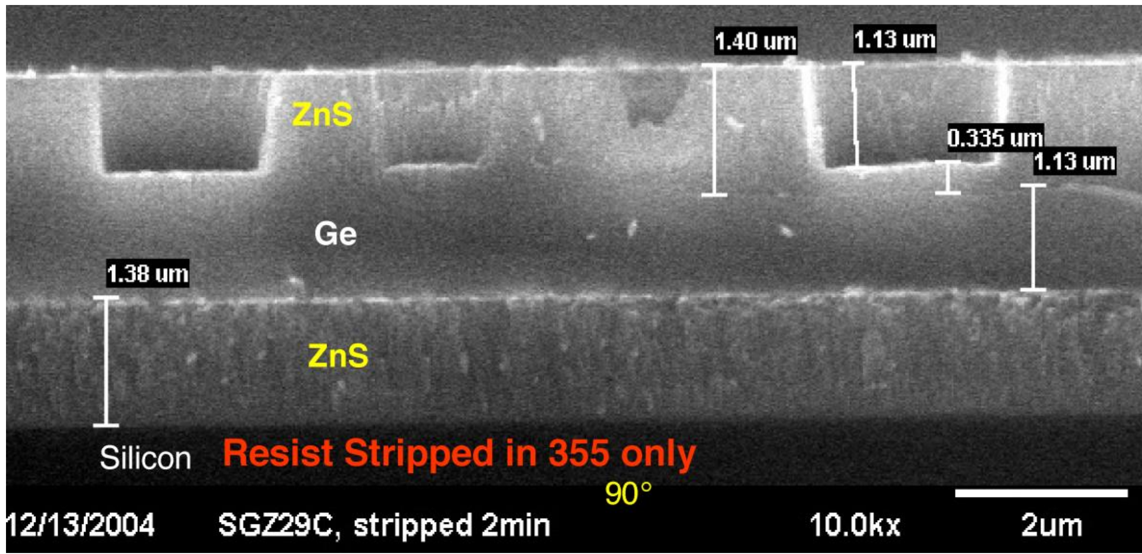
(a-1)



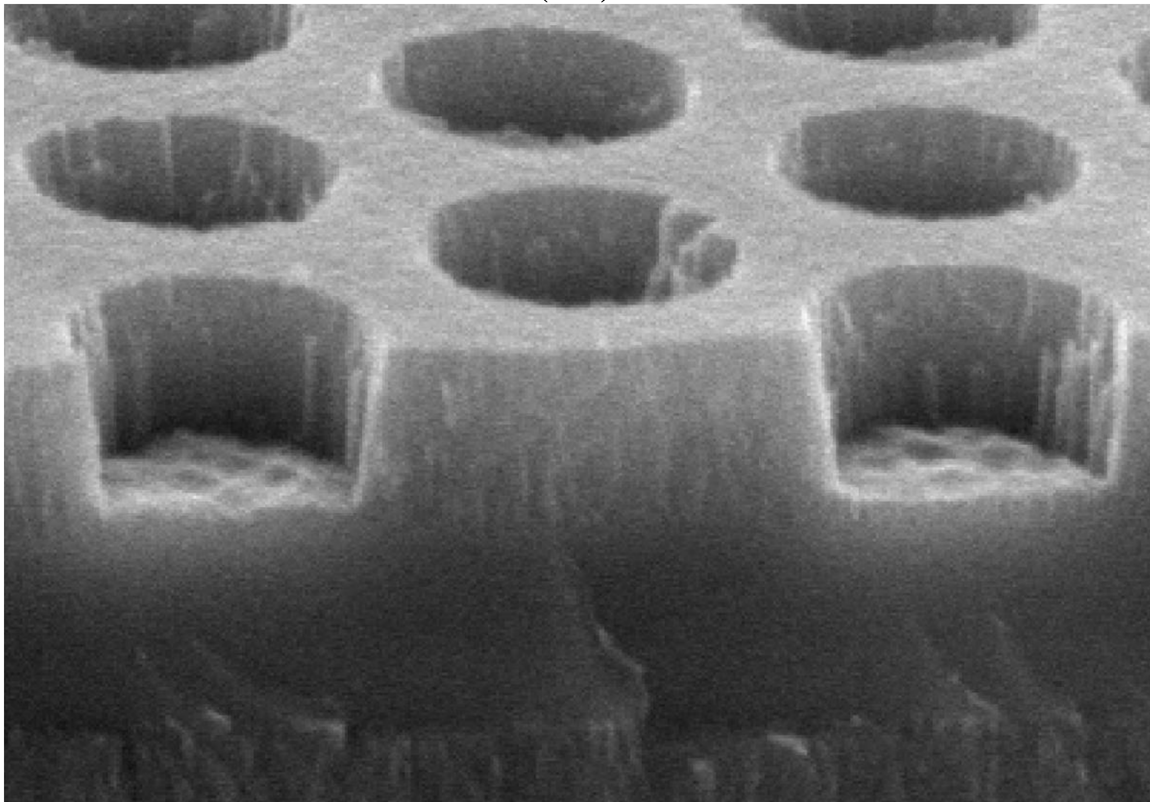
(a-2)



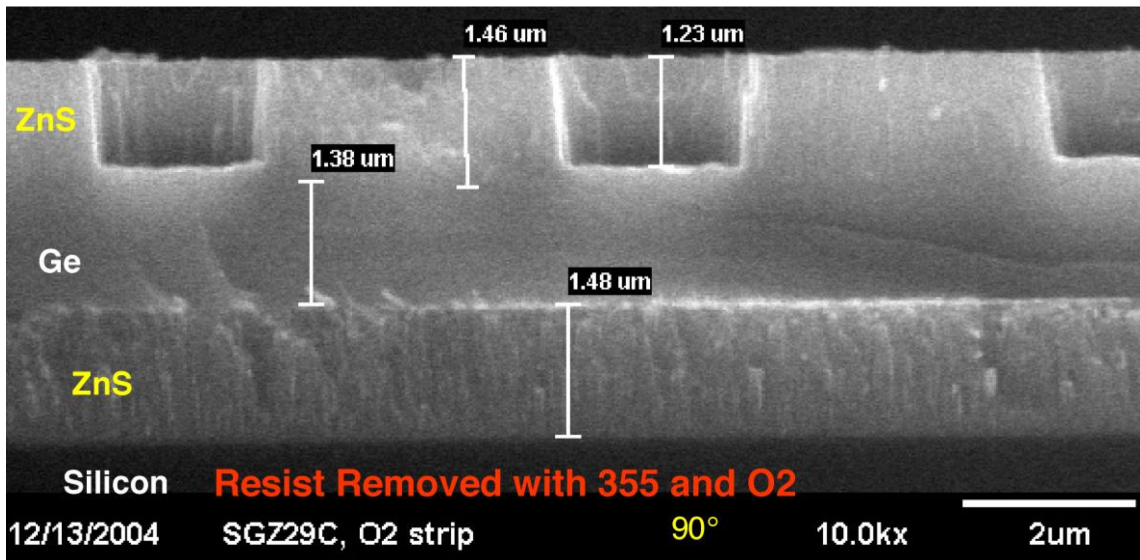
(b-1)



(b-2)



(c-1)



(c-2)

Note: The built-up polymer, during CH_4/H_2 plasma etch, was removed using O_2 plasma clean. The etch was continued after that.