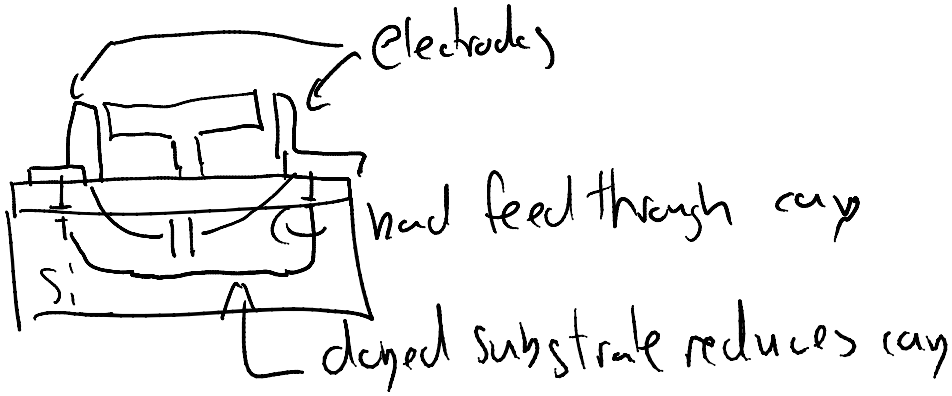
Discussion 10/3
Monday, October 03, 2011
4:08 PM

Process Tracker HW3

0.0 → n-type 8-12 ohm cm (relatively conductive)

- Control Wafers → Used for Debugging

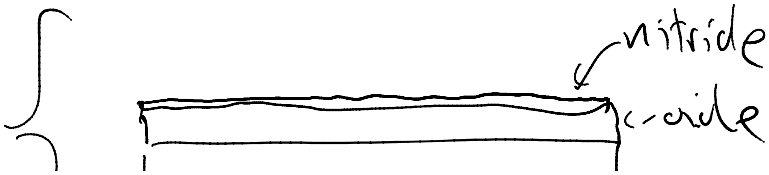
1.0 → $POCl_3$ → Ion Implantation

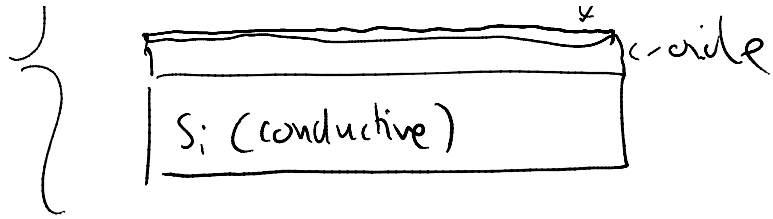


2.0 → PSG ≡ Phosphorus Glass → 2μm

3.0 → Densification → Melt PSG to eliminate pores

4.0 → Si Nitride 300nm





5.0 - Sub Con ← To reduce feedthrough
→ flat surface → spin thin PR
→ BHF gets rid of oxide by-product of etch
→ Piranha Clean (Boiling hot Sulfuric acid spiked with 30% H_2O_2)

6.0 → In situ doped Poly 350nm (3 hours)

7.0 → Thin PR spin & expose & etch

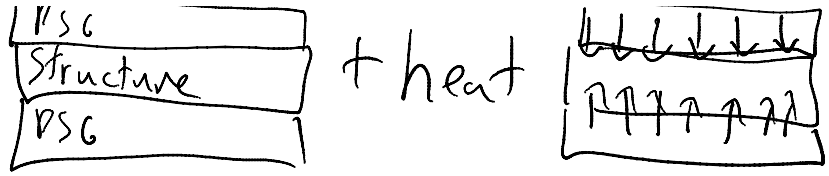
8.0 → PSG, 300nm (Sacrificial Layer)

9.0 → (Densify)

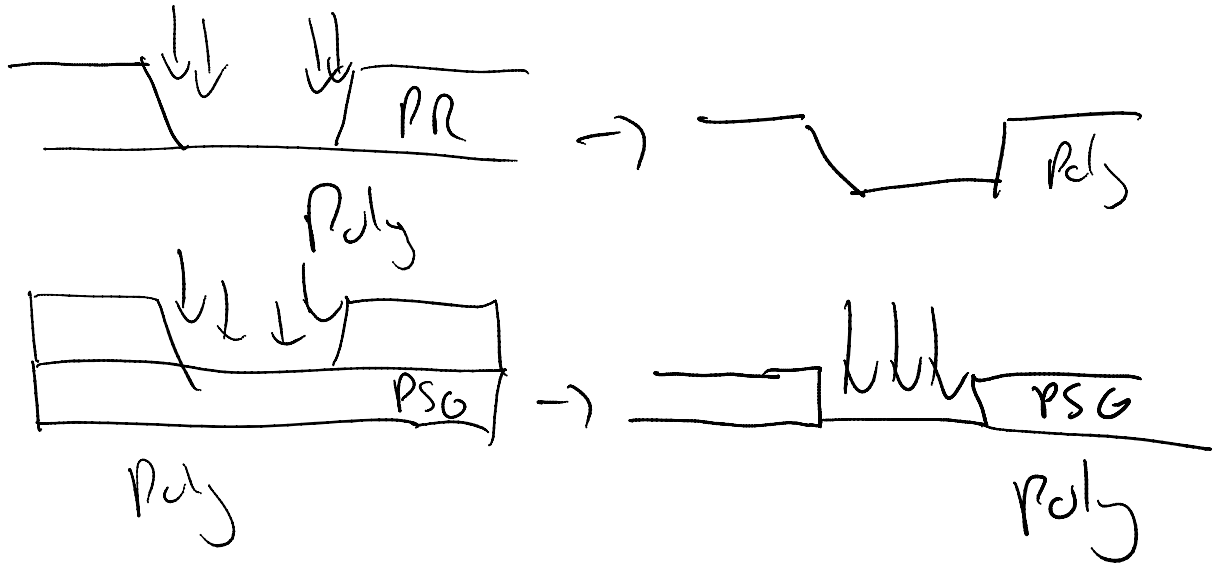
10.0 → In situ doped Poly $\boxed{\text{16 hours}}$

11.0 → Toy PSG layer - 2 purpose

1.

1. 

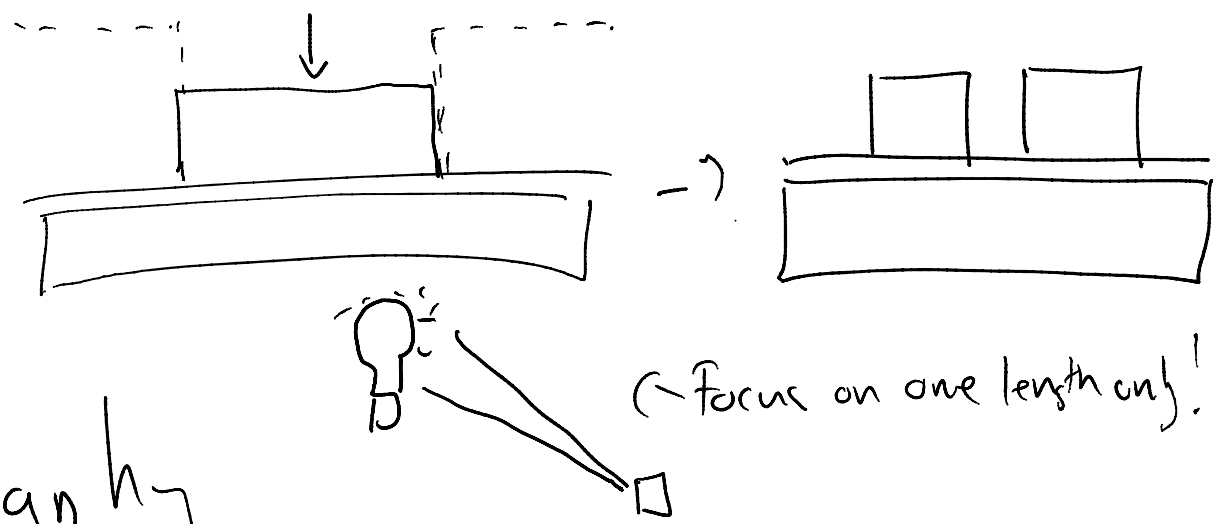
2. Hard mask



12.0 – thermal anneal

13.0 → Lithography through hard mask

14.0

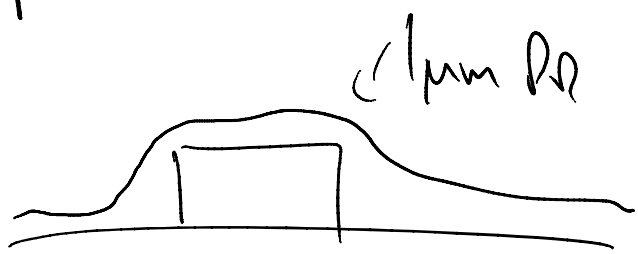


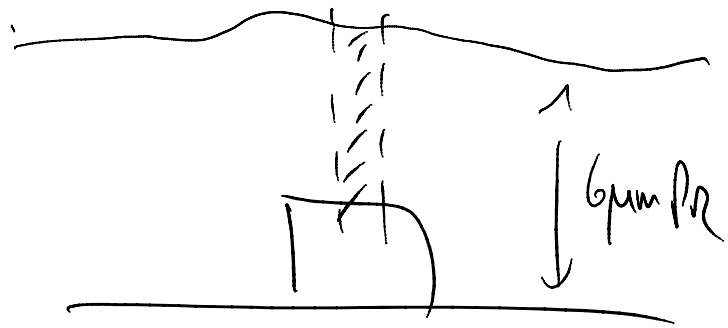
Lithography

↳ topography in PR makes achieving

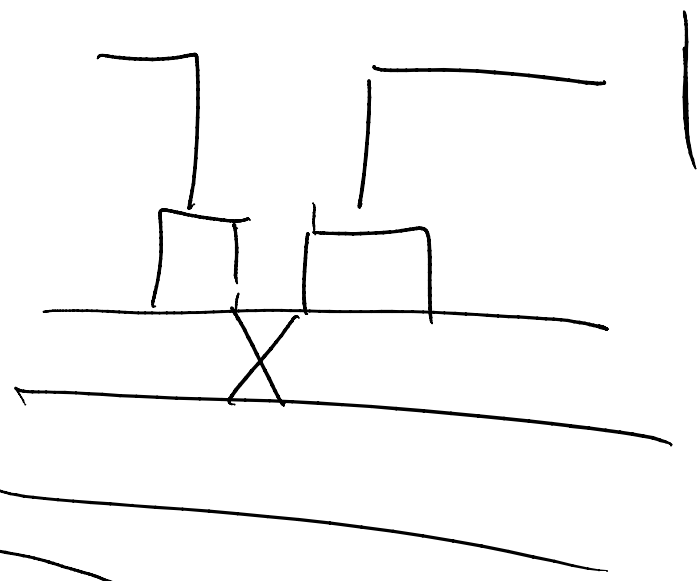
high resolution difficult.

Solution → Spin a ton of PR, surface tension will pull flat.

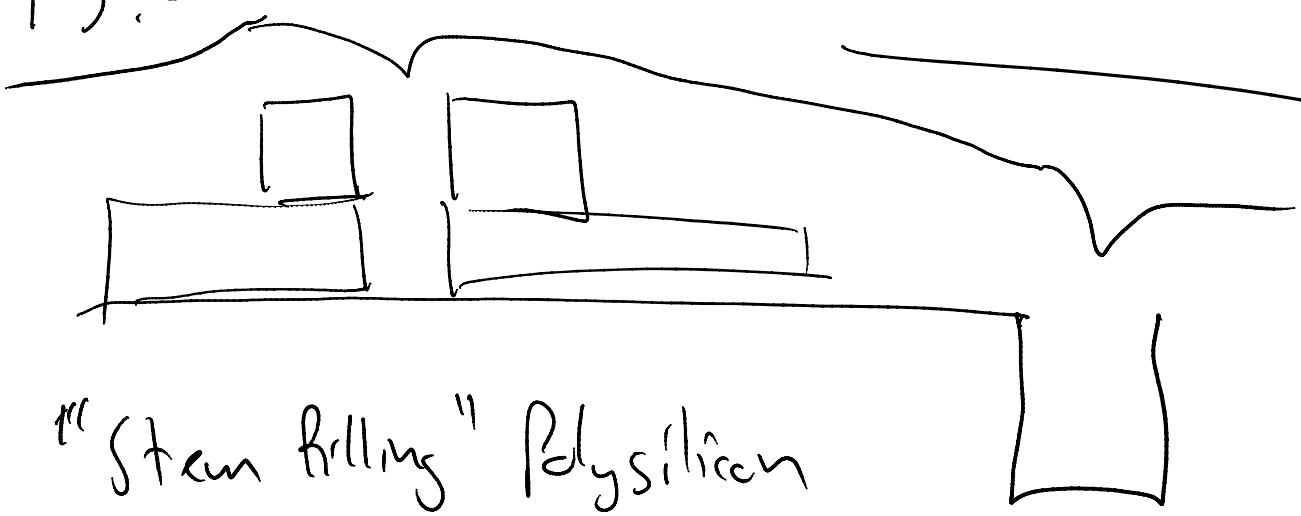




Etch from here →



ISO

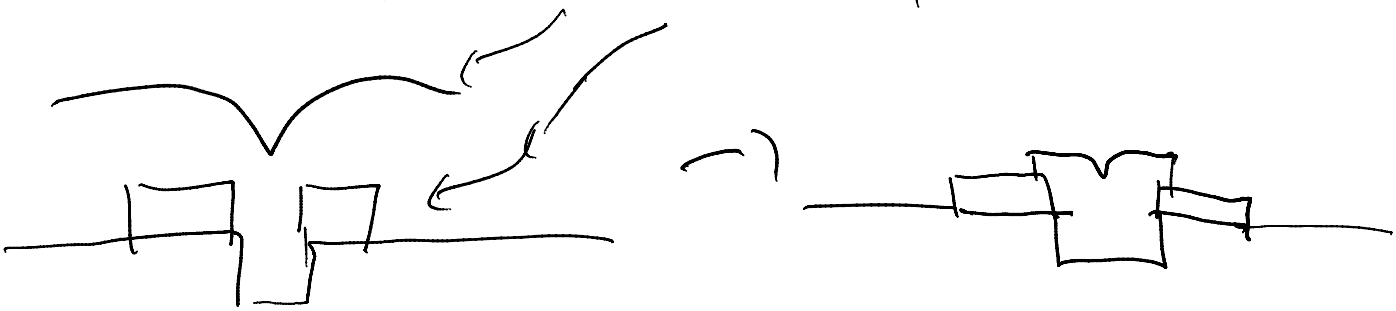


"Stem filling" Polysilicon

→ This step needs to be drawn!

16.0 → Spin 8μm PR (very thick)

- expose
- etch → timed carefully → NO SELECTIVITY



17.0 - Release! → No more PSG (except insulation layer)

→ BHF (Buffered Hydrofluoric Acid)

- Wet etch
- Isotropic

→ Note - release in water, so theoretically risk of stiction...