

Lecture 13: Film Deposition III

- Announcements:
- HW#6 online, due next Wednesday at 8 a.m.
- Module 4 on Etching online
- Note that recorded lectures have been going online at webcast.berkeley.edu - these also go onto YouTube and iTunes (I think)

• Lecture Topics:

↳ Film Deposition

- Evaporation
- Sputtering
- Chemical Vapor Deposition
- CVD Reactions
- Epitaxial Growth
- Atomic Layer Deposition (ALD)

↳ Metal Electroplating

↳ Etching

• Last Time:

- Going through Module 3 on Film Deposition
- Continue with this now and finish the module

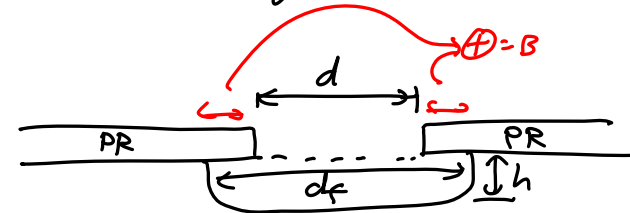
Etching

Two important metrics:

- ① Anisotropy
- ② Selectivity

① Anisotropy -

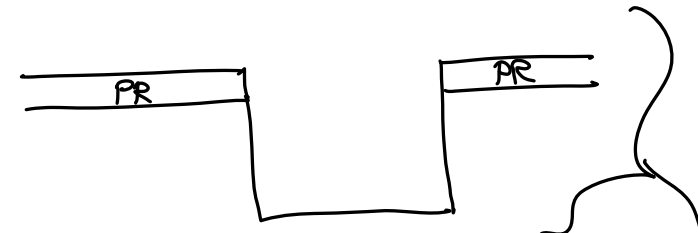
(a) Isotropic Etching: (most wet etches)



If 100% isotropic: $d_f = d + 2h$

Define: $B = d_f - d$ (total undercut)

If $B = 2h \Rightarrow$ 100% isotropic



Degree of Anisotropy: (definition)

$$A_f = 1 - \frac{B}{2h} \rightarrow = 0 \text{ if } 100\% \text{ isotropic}$$

in general $0 \leq A_f \leq 1$

↑
100% anisotropic