

Lecture 13: Film Deposition III

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

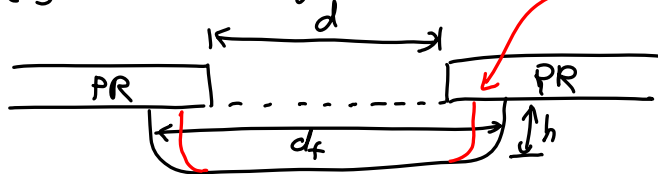
Etching

Two important metrics:

- ① Anisotropy
- ② Selectivity

① Anisotropy -

(a) Isotropic Etching: (most wet etcher)



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

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

If $B = 2h \Rightarrow$ isotropic

(b) Partially Isotropic: (most dry etcher, e.g., plasma etching)
 $B < 2h$



Degree of Anisotropy: (definition)

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

$$0 < A_f \leq 1 \leftarrow \text{anisotropic}$$

or \rightarrow

