

MR

Ahmed Mahdy



مدرس خصوصي

حضورى

اونلاين

لجصل الطالب علي

مقاطع فيديو هات لشرح المقرر بشكل وافي

ملخص للمادة Pdf للمذكرة واطراجة

محاضرات مباشرة علي برنامج زووم

مناقشة الأجزاء الغير مفهومة

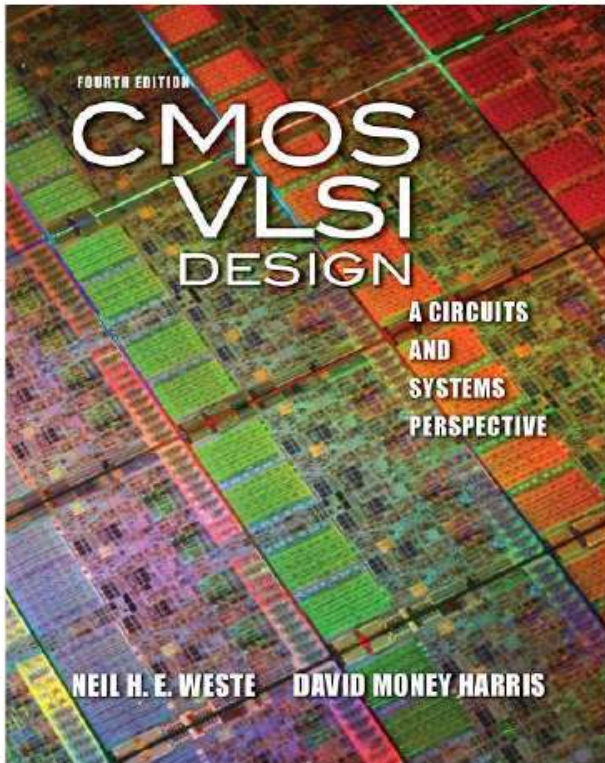
تواصل مستمر مع معلم المادة

للتواصل

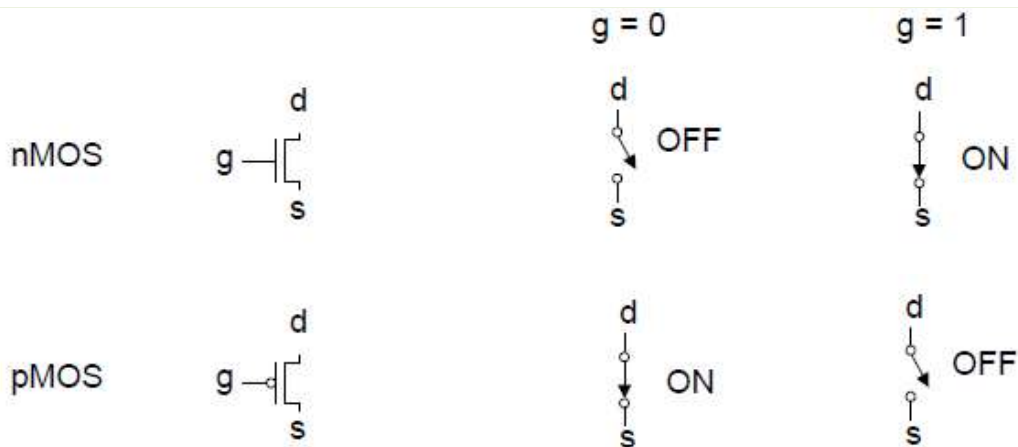
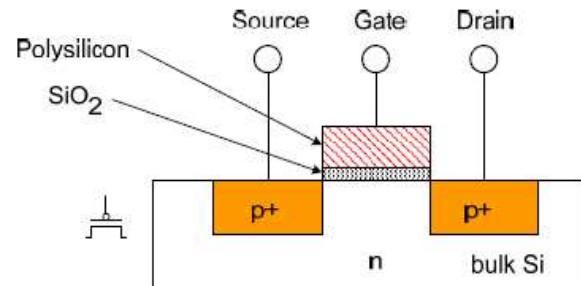
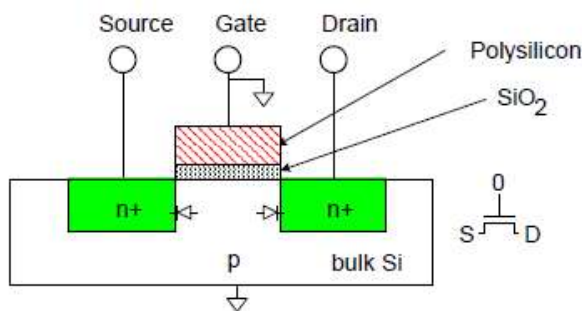
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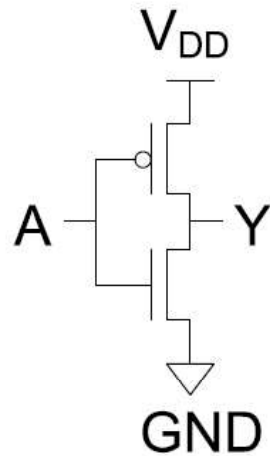
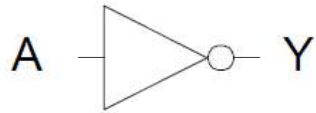




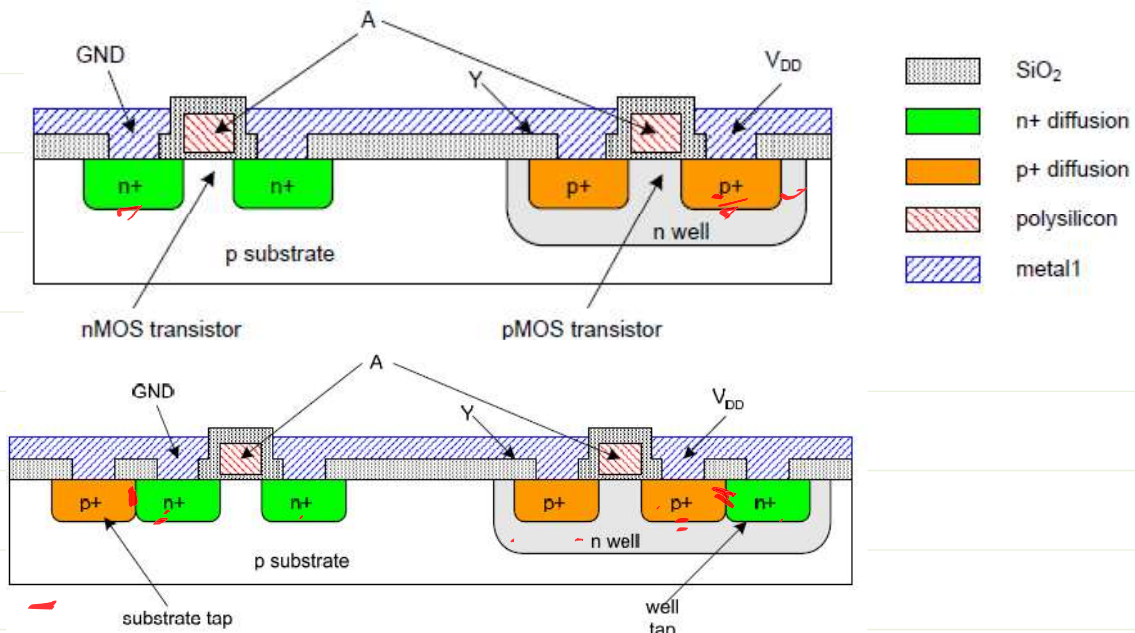
Lecture 2: Introduction (CMOS Fabrication)



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fabrication



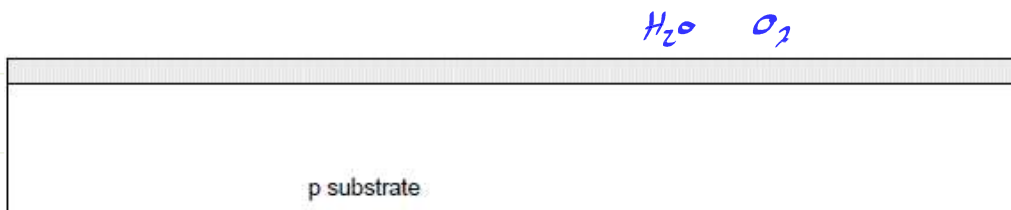
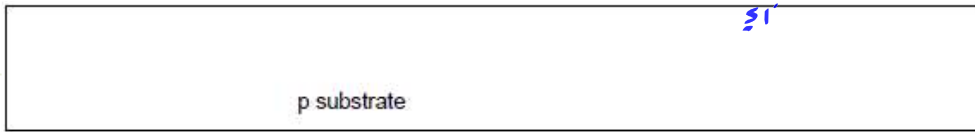
Fabrication

- ☐ Chips are built in huge factories called fabs
- ☐ Contain clean rooms as large as football fields

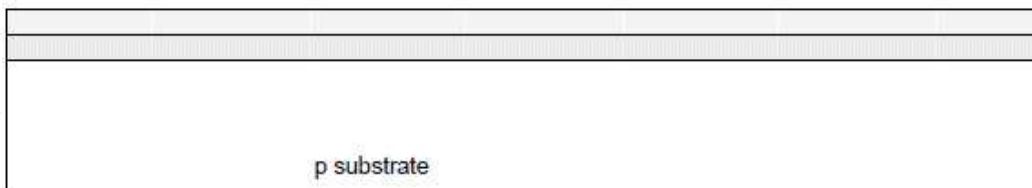


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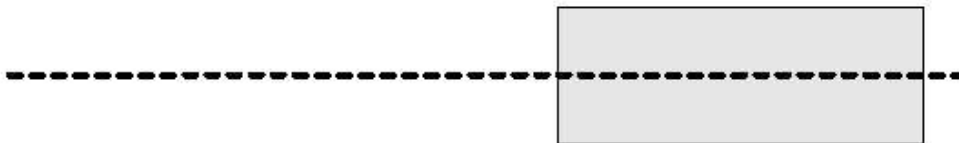
Fabrication Steps



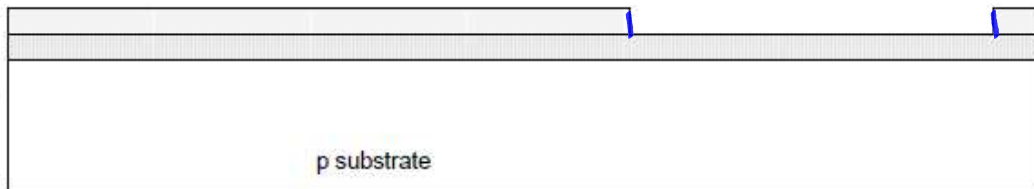
SiO₂ oxidation



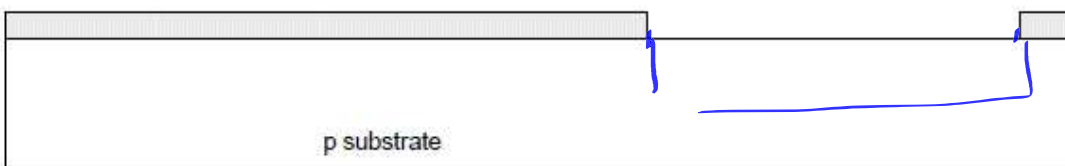
Photoresist
SiO₂



Lithography



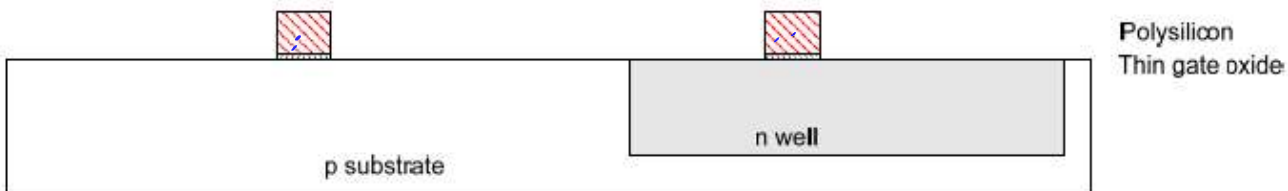
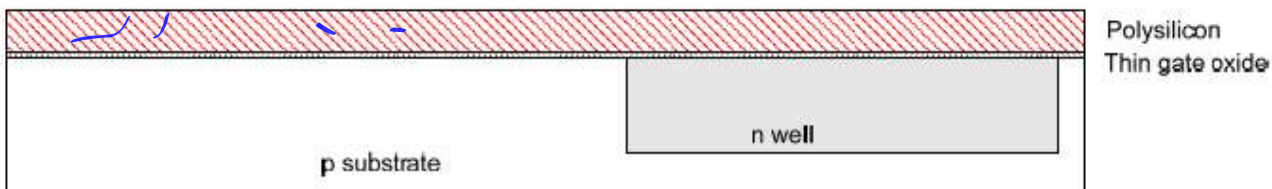
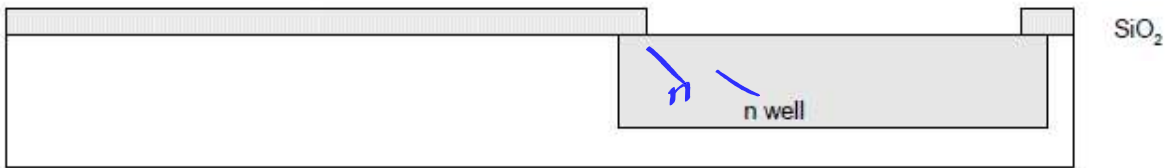
Photoresist
SiO₂

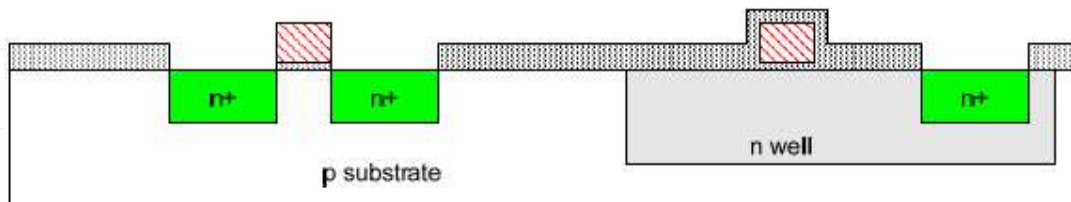
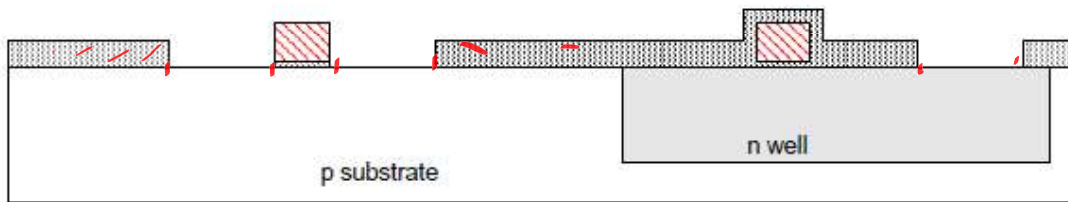
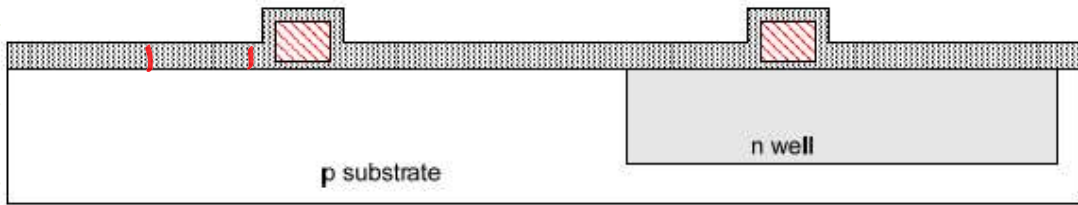


SiO₂ etch

n-well

- ☐ n-well is formed with diffusion or ion implantation
- ☐ Diffusion
 - Place wafer in furnace with arsenic gas
 - Heat until As atoms diffuse into exposed Si
- ☐ Ion Implantation
 - Blast wafer with beam of As ions
 - Ions blocked by SiO_2 , only enter exposed Si





n diffusion

