

SI-2025

Analog IC Design



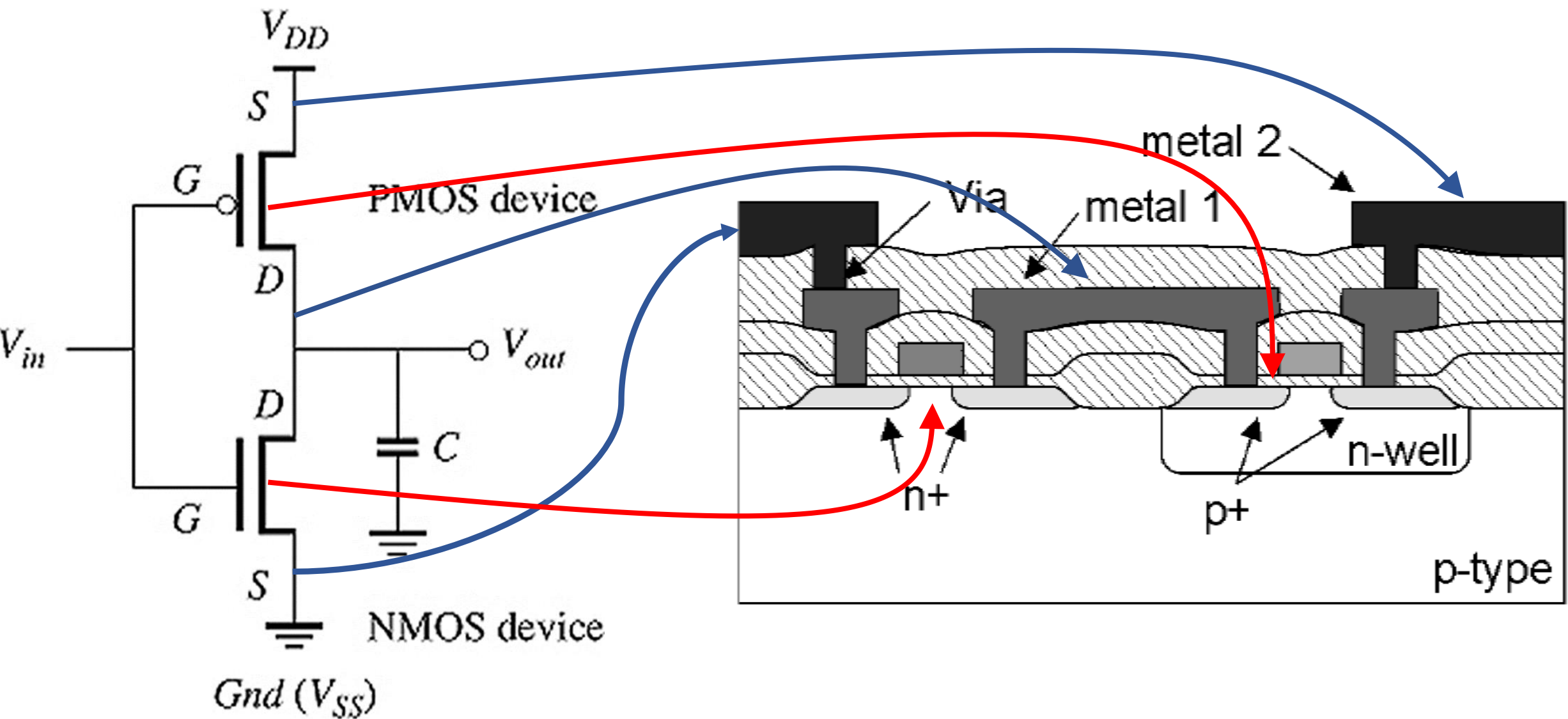
Introduction to IC Fabrication

Saroj Rout

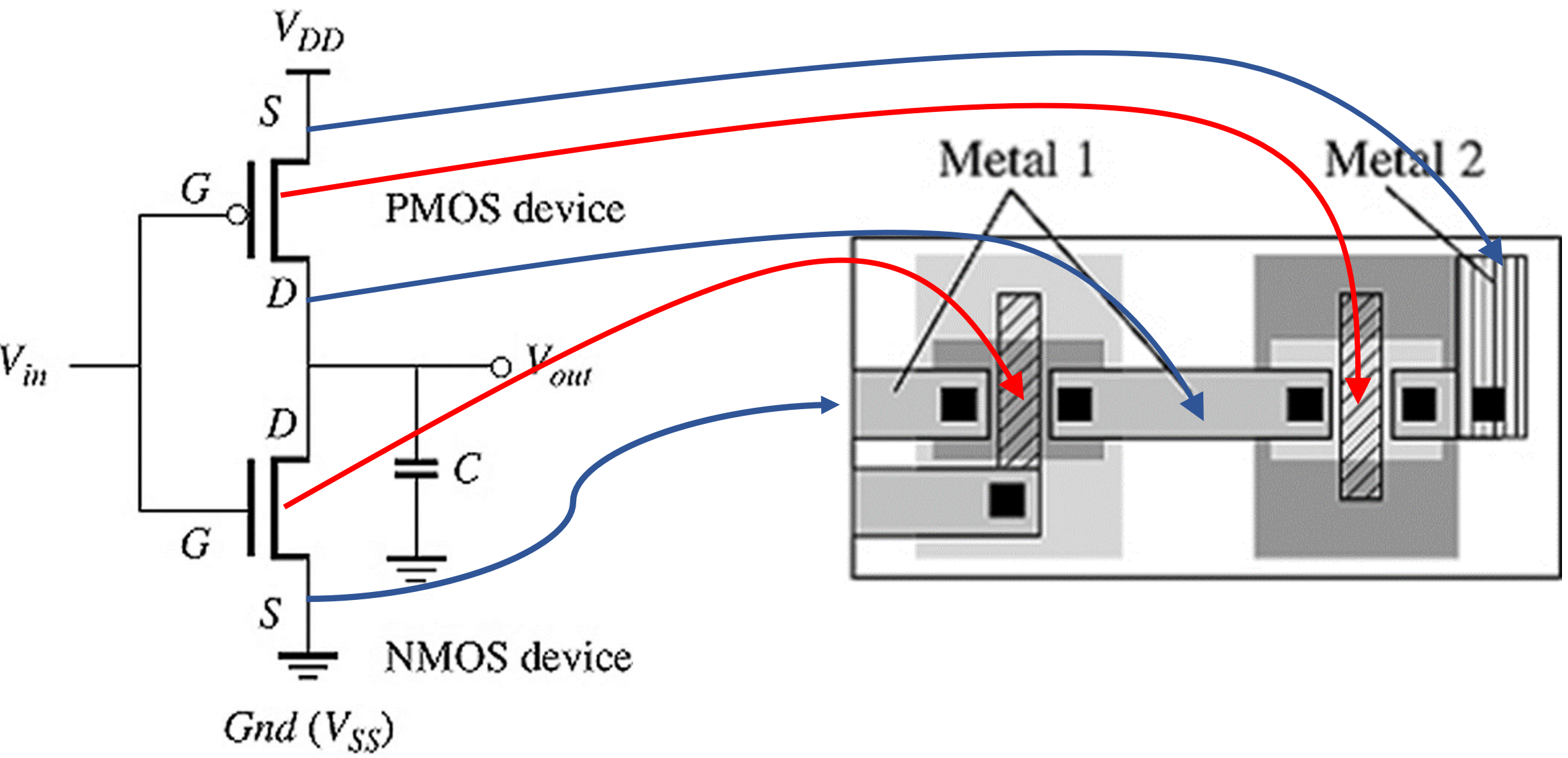
Summer Internship

10 June 2025

► Schematic to Physical Devices

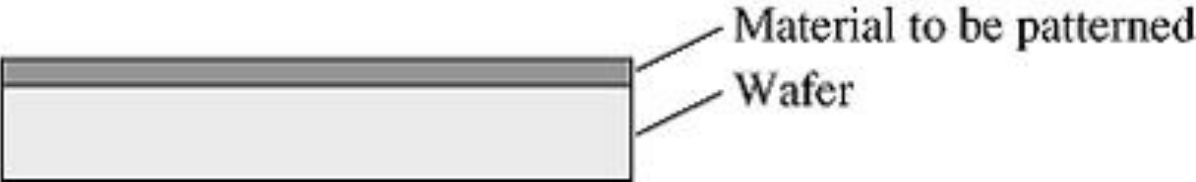


► **Circuit to Foundry Masks (Layout)**

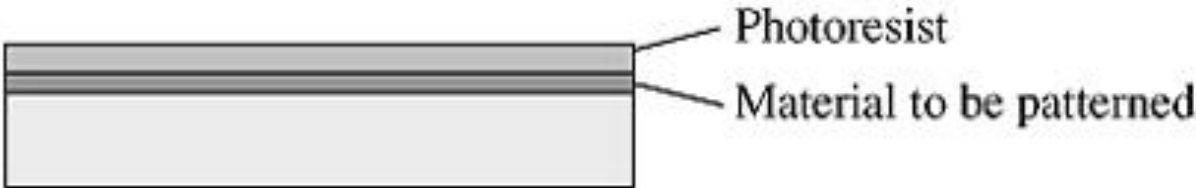


► **Material Patterning Steps (1)**

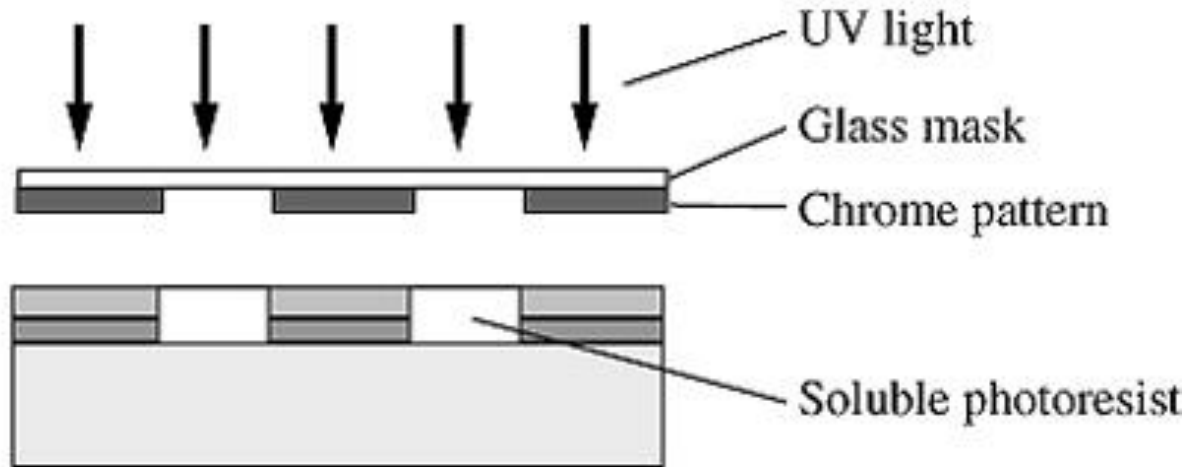
Step 1: Apply material to wafer



Step 2: Spin on a photoresistive material



Step 3: Pattern photoresist with UV light through glass mask

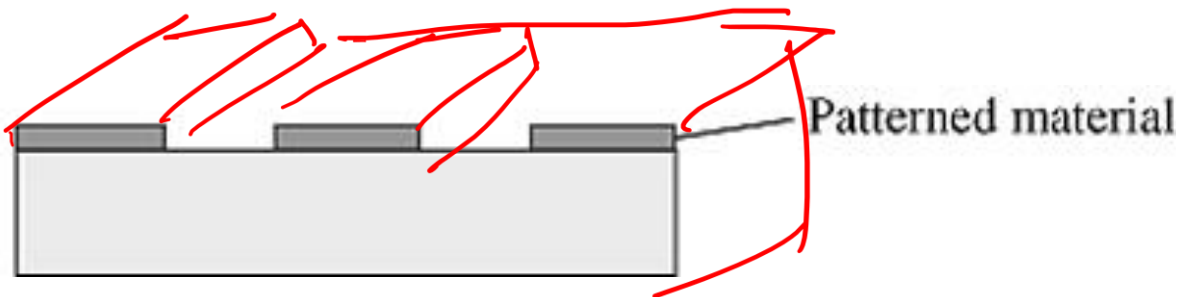


► Material Patterning Steps (2)

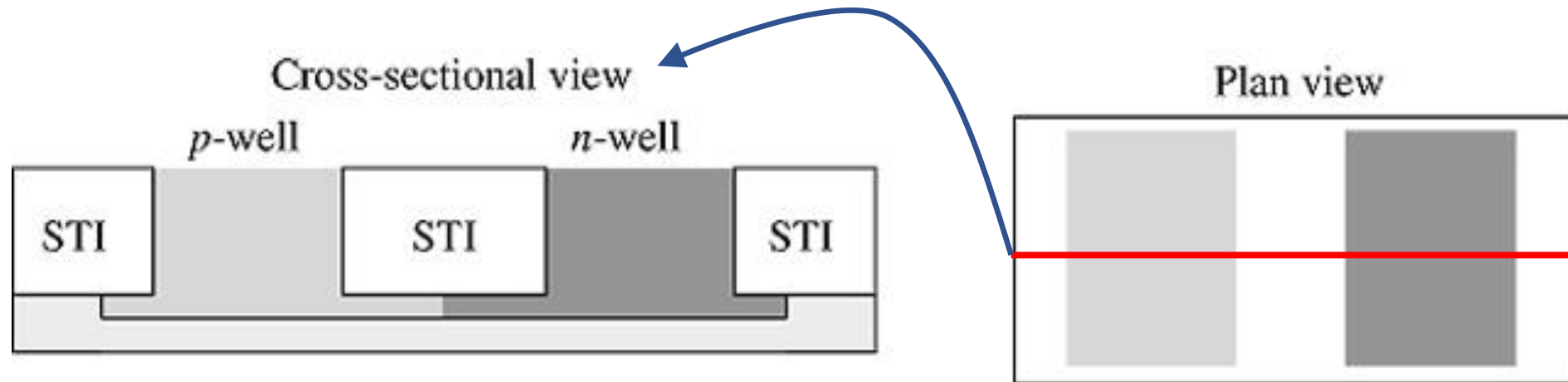
Step 4: Apply specific processing step such as etch, implant, oxidation, after removing soluble photoresist



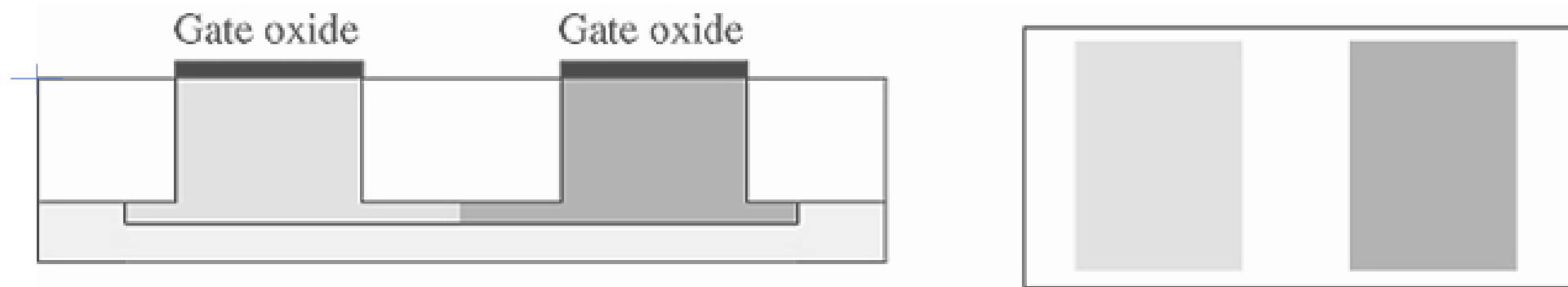
Step 5: Wash off resist



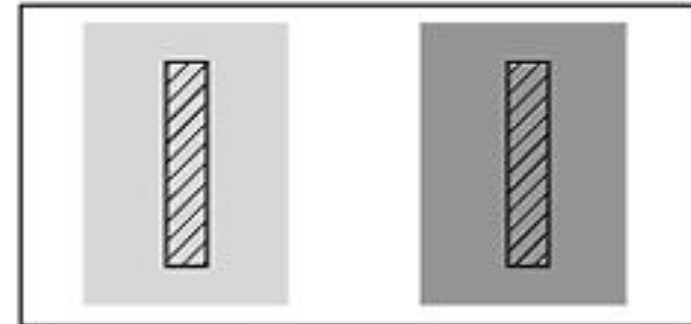
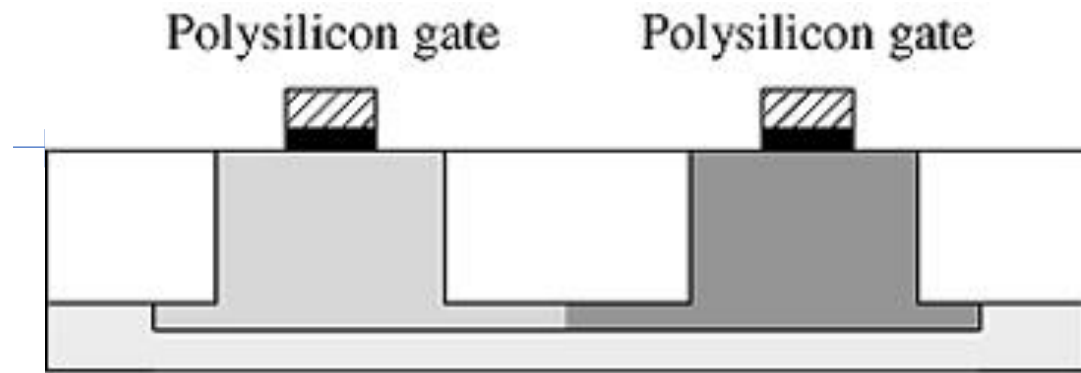
► Foundry Masks (Layout) to Physical Devices



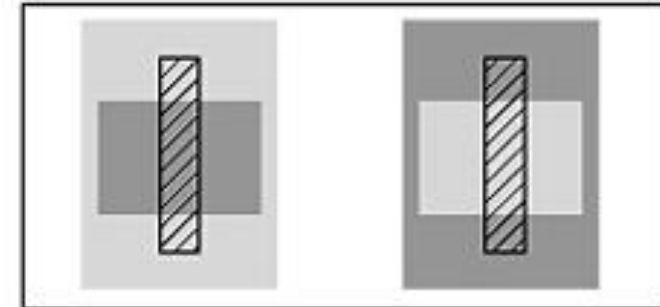
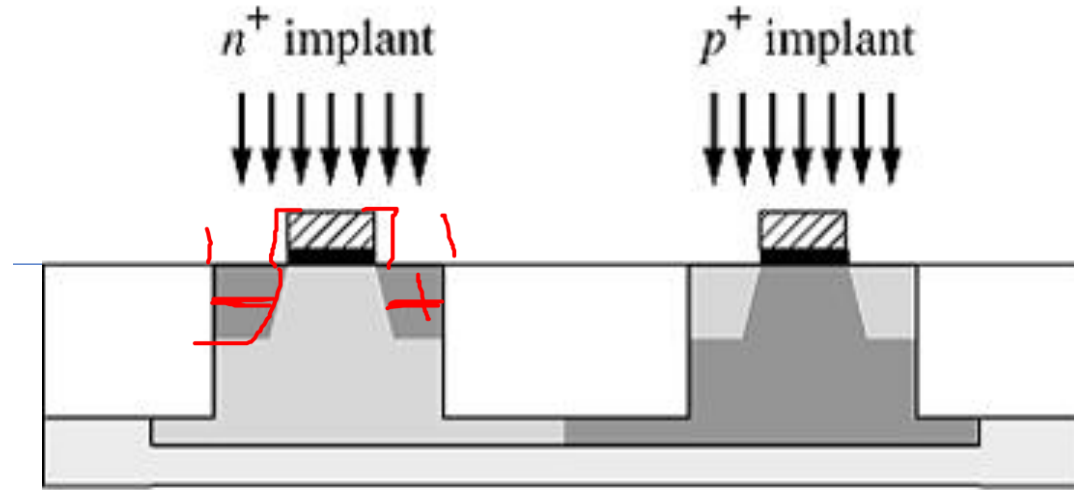
► Foundry Masks (Layout) to Physical Devices (2)



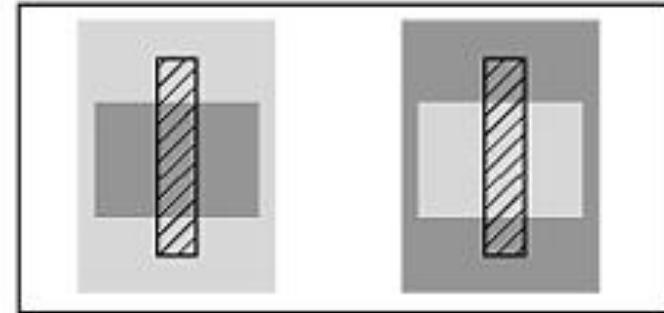
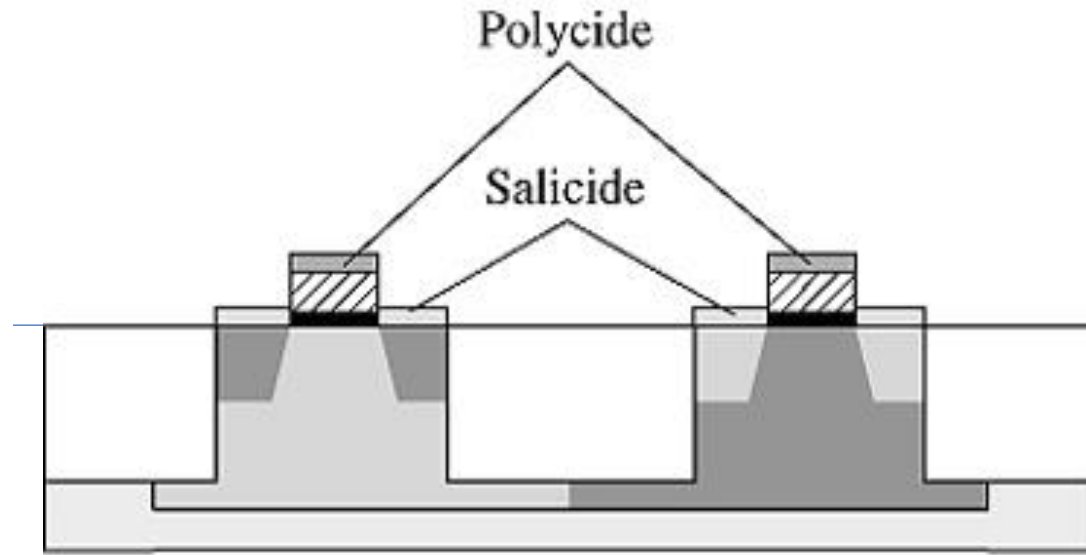
► Foundry Masks (Layout) to Physical Devices (3)



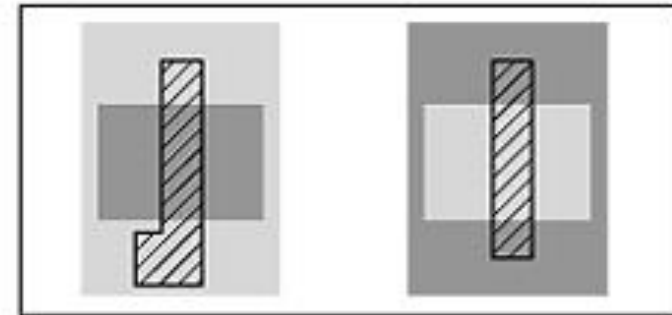
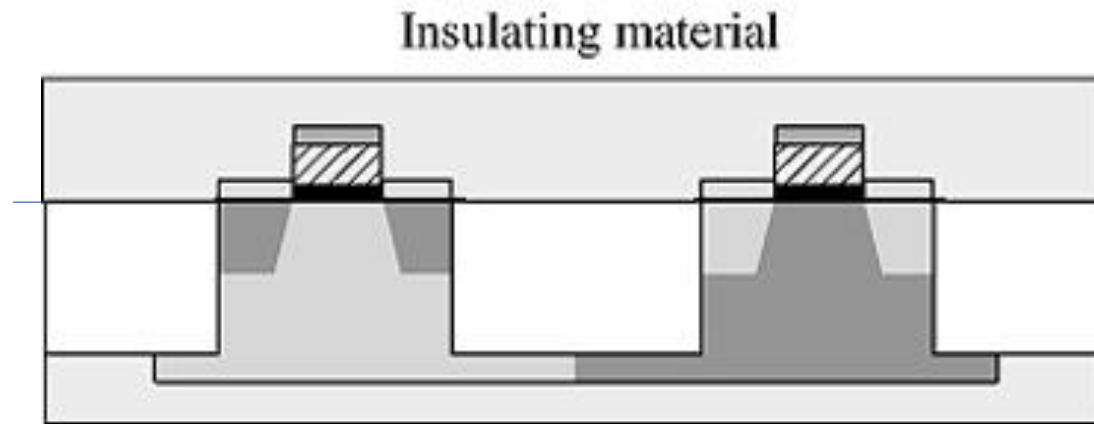
► Foundry Masks (Layout) to Physical Devices (4)



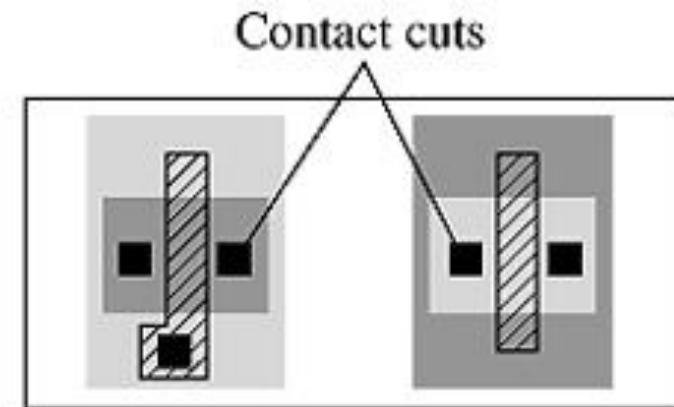
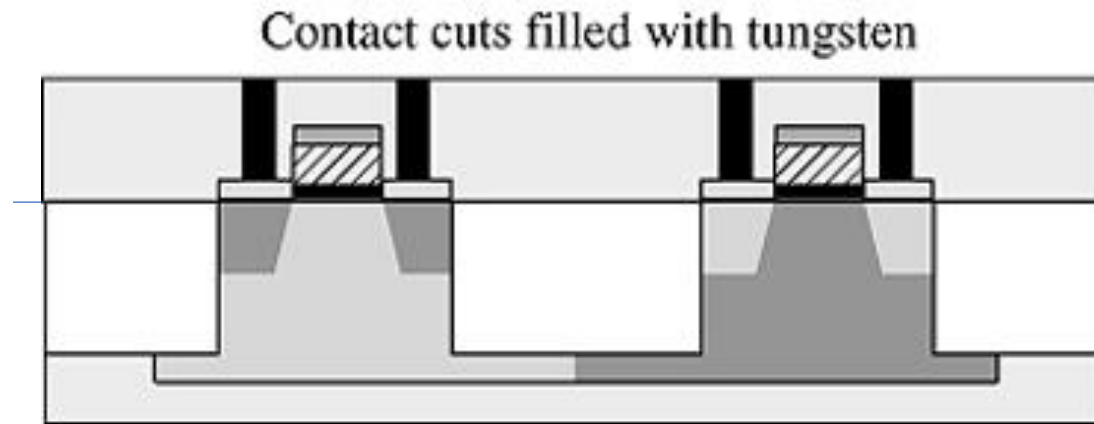
► Foundry Masks (Layout) to Physical Devices (5)



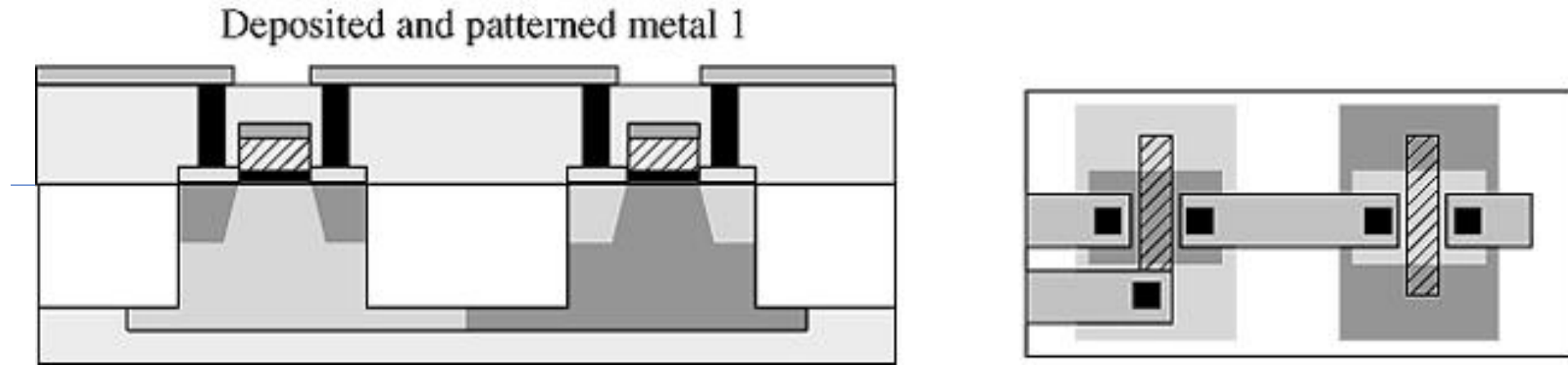
► Foundry Masks (Layout) to Physical Devices (6)



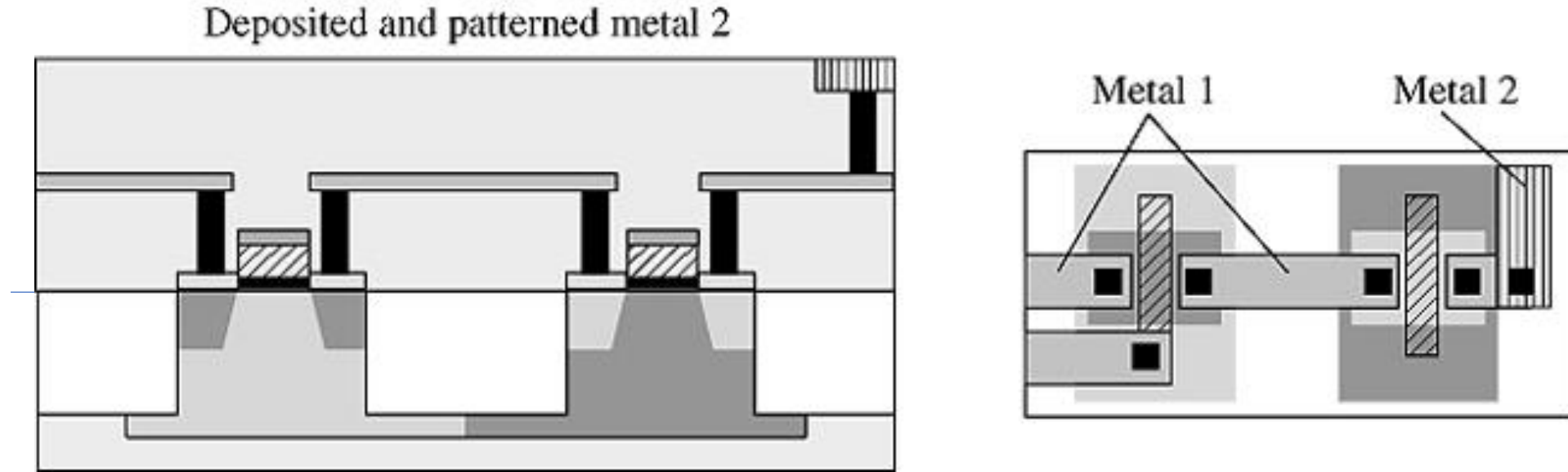
► Foundry Masks (Layout) to Physical Devices (7)



► Foundry Masks (Layout) to Physical Devices (8)



► Foundry Masks (Layout) to Physical Devices (9)



► **An Older Fabrication Technique: LOCOS**

