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Typical resist process

- Step 1: Surface cleaning and or dehydration bake
Prepares the surface for application of resist – resist adhesion
- Step 2: HMDS (hexamethyldisilazane - $[(CH_3)_3Si]_2NH$) application
Spin coated or vapor coated – improves resist adhesion
- Step 3: Resist application
Spin coated – spin speeds in the range of 3000 – 6000 rpm
- Step 4: Pre-bake resist: 90 – 100 C for 10 – 30 min
Removal of organic solvents in the resist
- Step 5: Align wafer and expose the resist
- Step 6: Post exposure bake (PEB)
Reduces roughness due to standing wave patterns by diffusion of remaining PAC. Typically 100 C for 10 min

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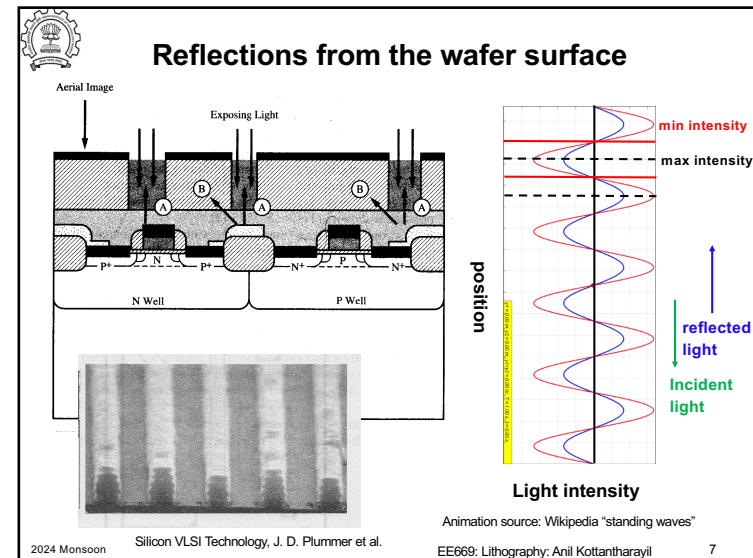
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Typical resist process (2)

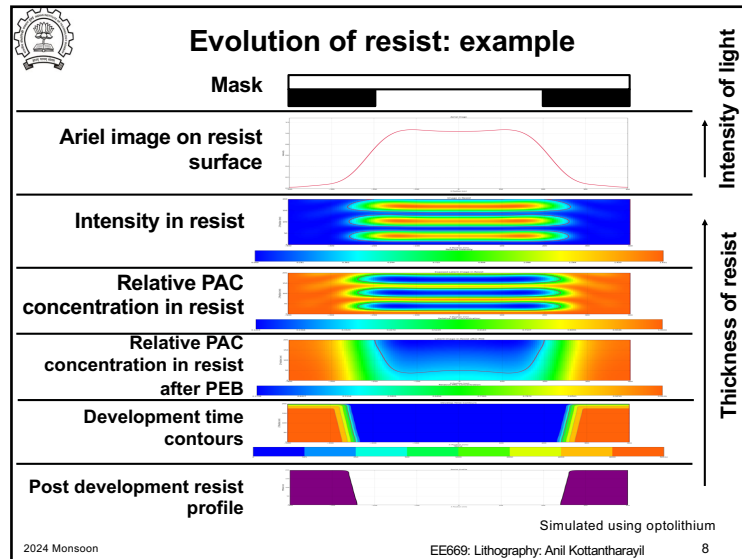
- Step 7: Resist development
Typically 30 – 60 sec @ room temperature using recommended developer
- Step 8: Post develop bake
Remove solvents from the developer: 10 – 30 min @ 100 to 140 C
- Step 9: Masking process (wet etch, dry etch, ion implantation)
- Step 10: Removal of resist
Isopropyl alcohol (C_3H_8O)
Acetone ($(CH_3)_2CO$)
Resist removers
Dry etching (O_2 plasma)
 H_2SO_4/H_2O_2 , 1:1 to 1:4 at 120 C to 150 C
 $NH_4OH/H_2O_2/H_2O$, 1:1:5 to 0.05:1:5, 80 C – 90 C } aggressive
- Step 11: Inspections to make sure that resist is removed & metrology

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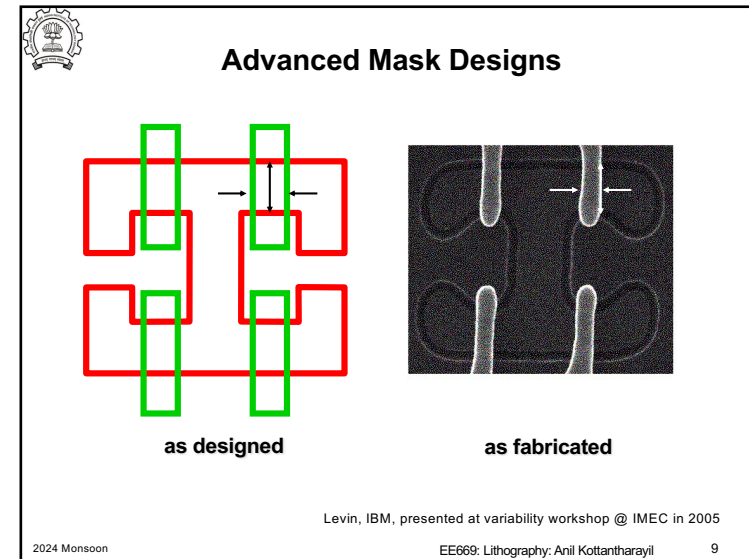
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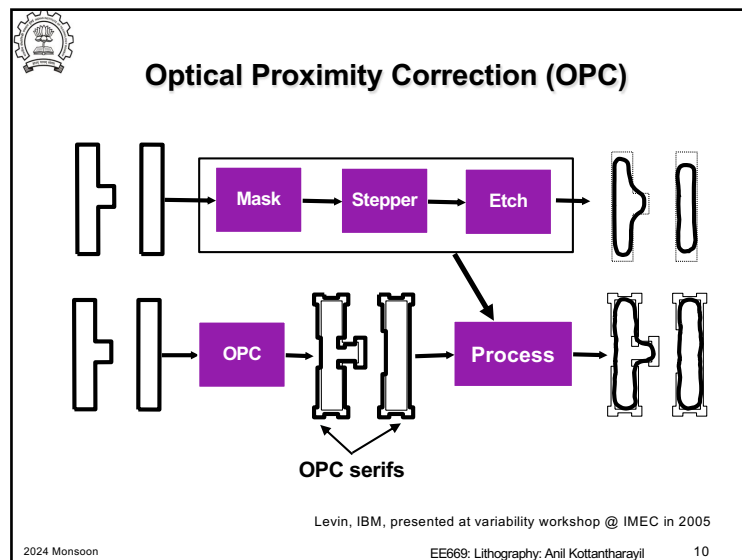
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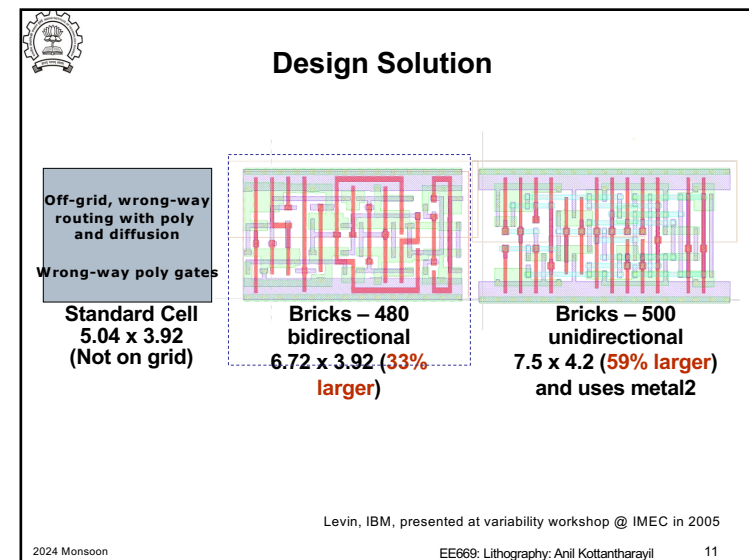
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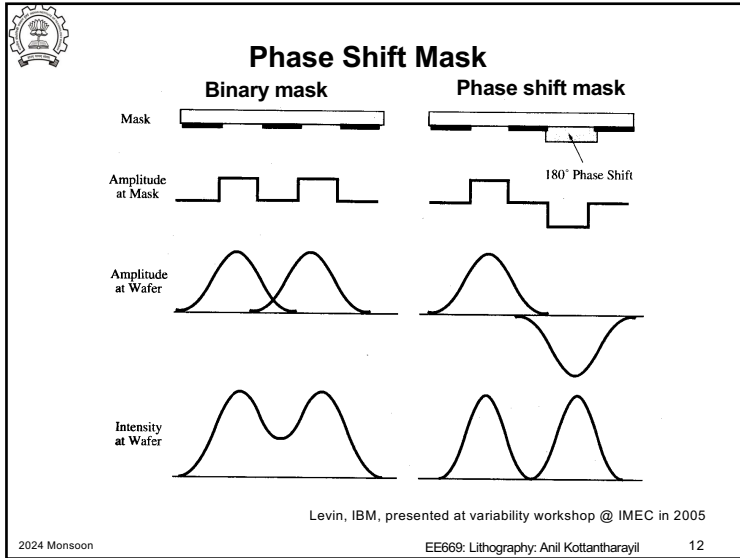
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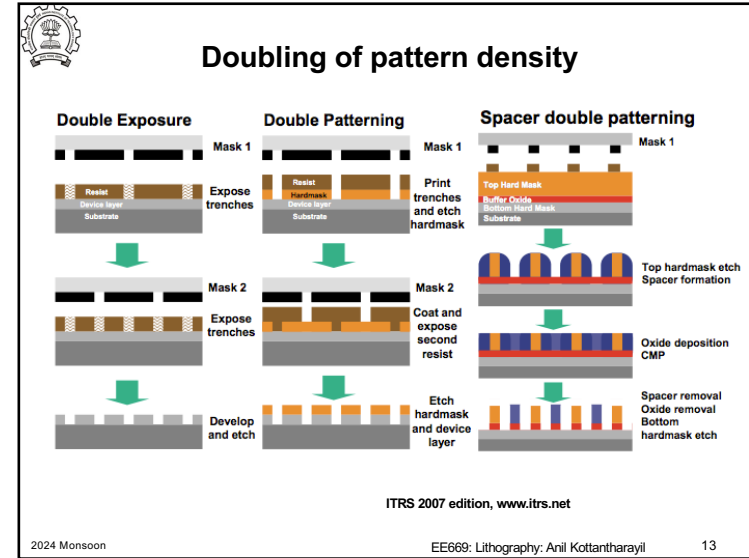
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