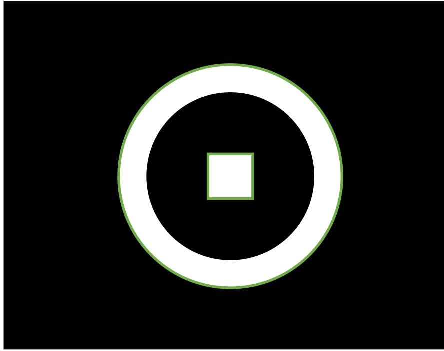
ChE 384T/323 Quiz 1 Answers

1. Ji Yeon
2. Jack Kilby
3. ~22 nm
4. 

Quiz 2 Answers

1. Jack Kilby

2.

- No need replacement masks
- 4x reduction
- Can be protected with a pellicle – prevents mask from introducing defects
- Non-contact

3. < 20 μm

Quiz 3 Answers

1. Nope
2. $(100000)^{1/2}$ nm
3. A) 50000 Angstroms; B) 45000 nm

Quiz 4 Answers

1. Developing low defect density masks; high power EUV source; developing system for defect-free handling of unprotected reticles;

developing EUV resist (trade-off between LWR, Resolution, Sensitivity)

2.

3. SRAFS; optical proximity correction; phase shift mask etc..

Quiz 5 Answers

1. SADP self aligned double patterning
2. STM scanning tunneling microscope
3. LFLE

Quiz 6 Answers

1. High temperature and pressure; alignment issue; thermal expansion issue;
2. Refractive index of the material changes at different polarization of light
3. Pellicle that does not absorb at 157 nm wavelength; requires a new infrastructure (glass, purge gas, mask that don't absorb); require vacuum system since air also absorbs; design of lenses since CaF_2 is birefringent