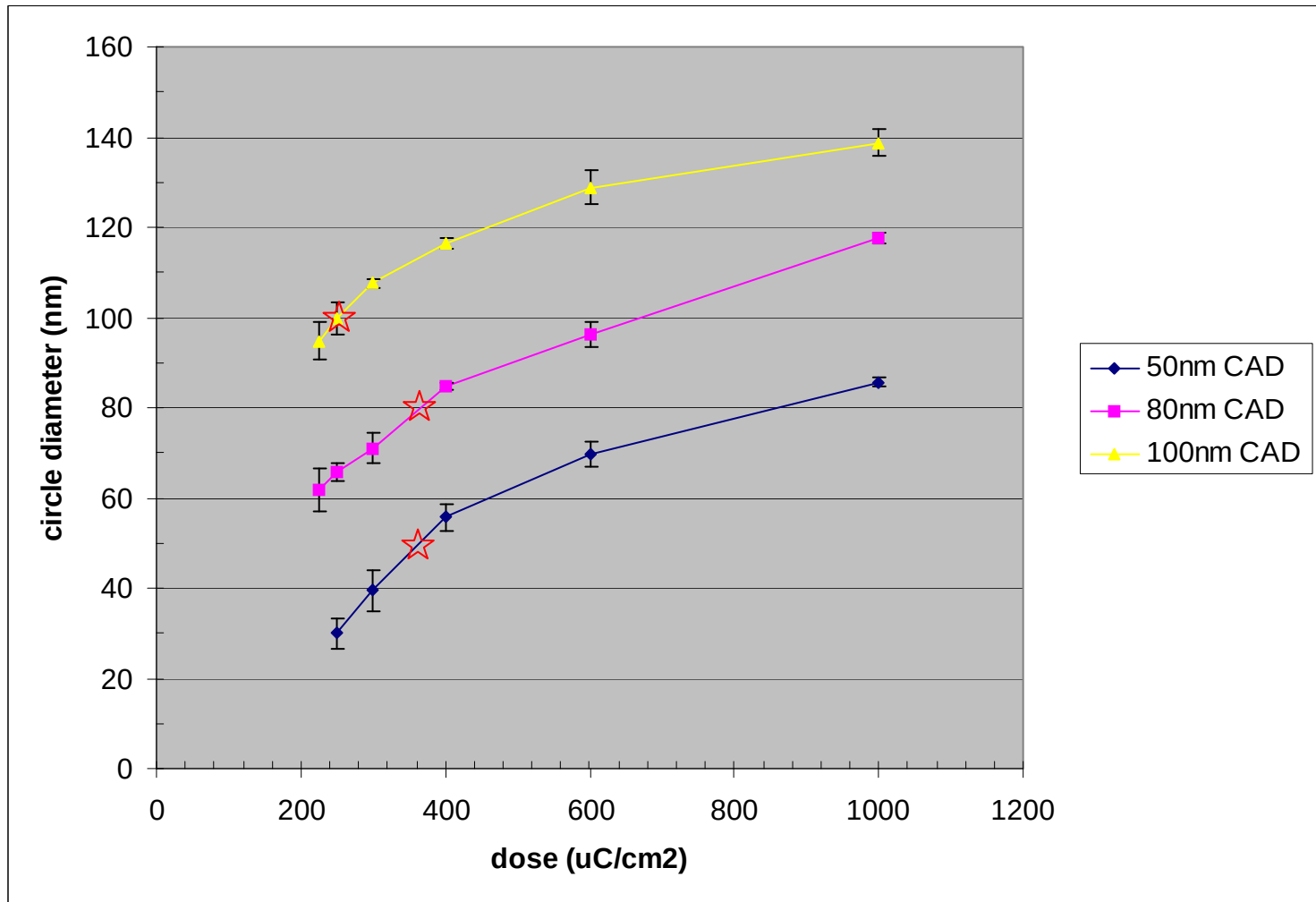


2um pitch circle diameter by dose and drawn dimension

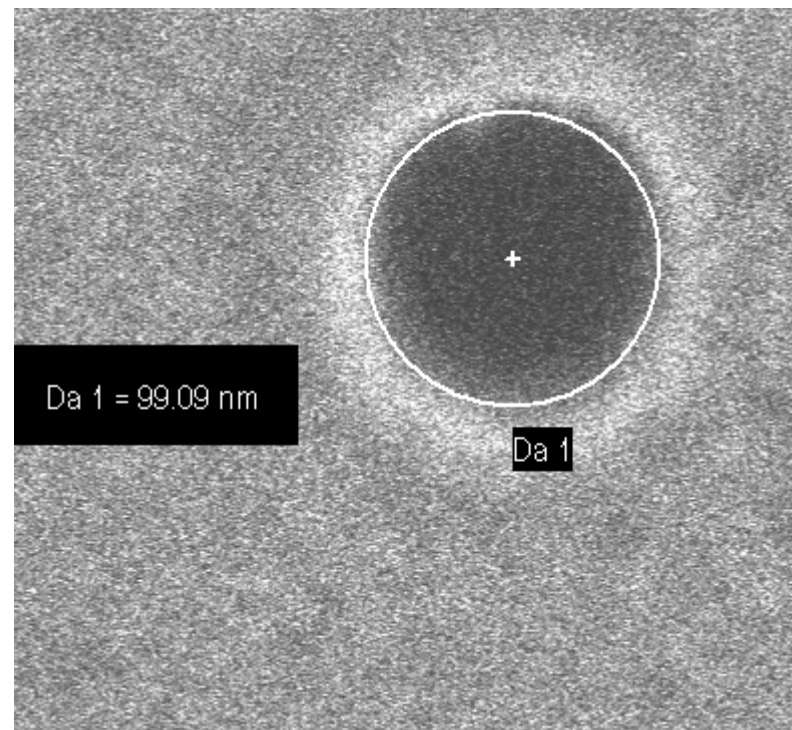
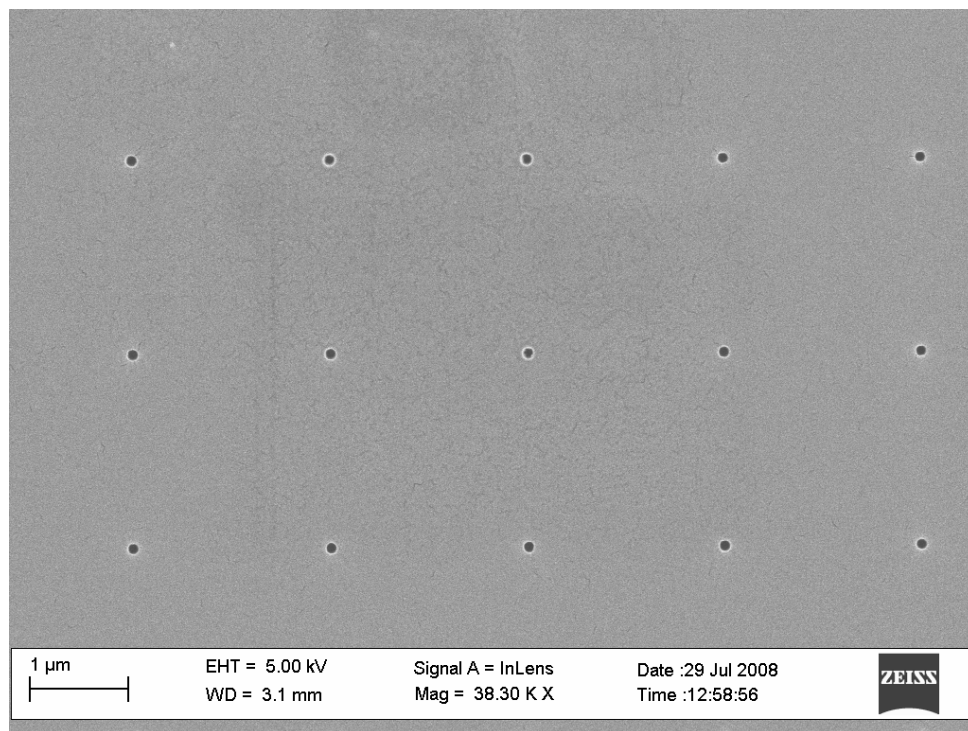


drawn 50nm diameter = actual 50nm diameter at 360uC/cm²

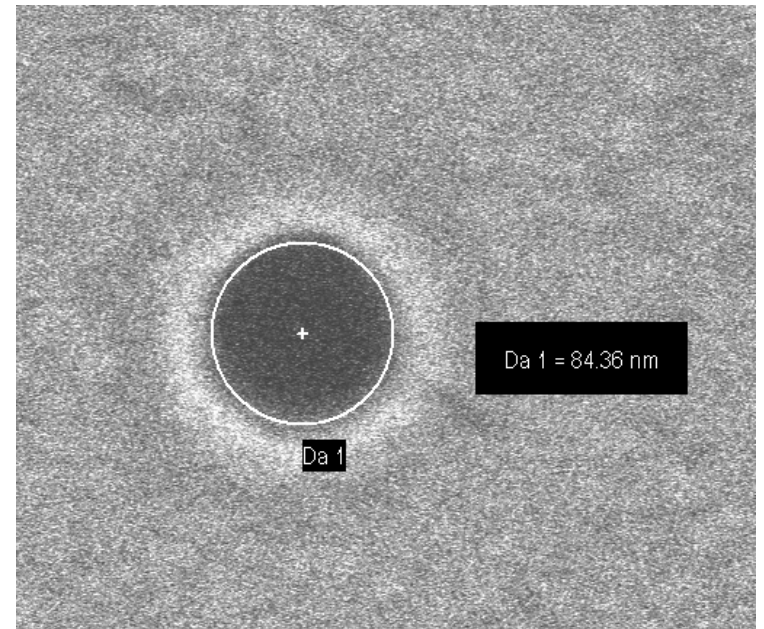
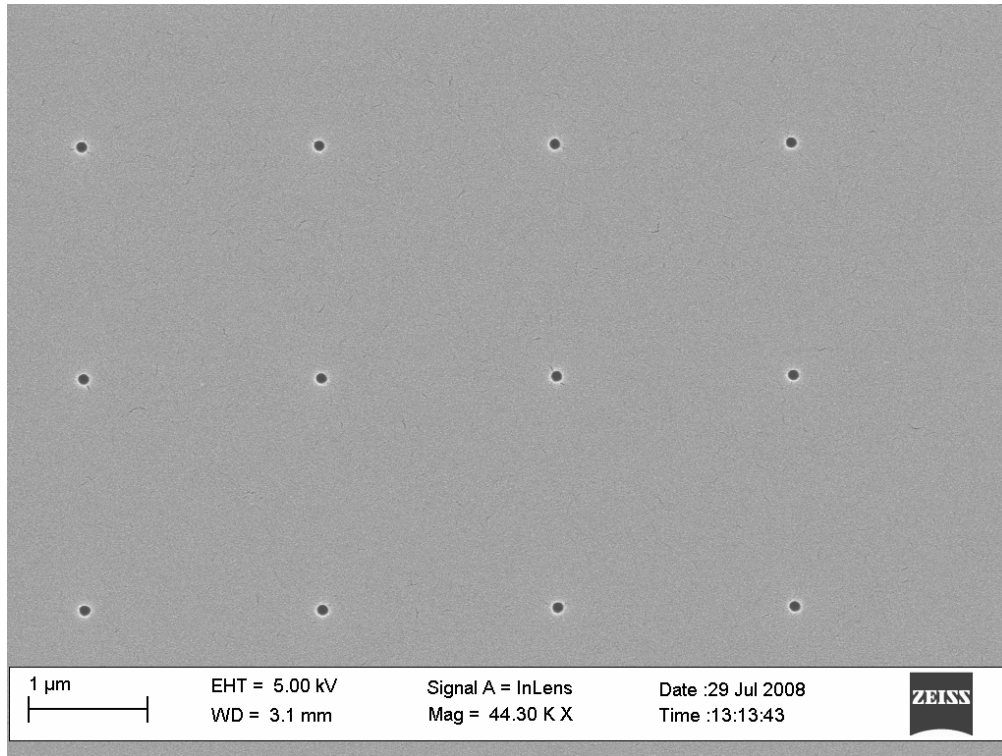
drawn 80nm diameter = actual 80nm diameter at 360uC/cm²

drawn 100nm diameter = actual 100nm diameter at 250uC/cm²

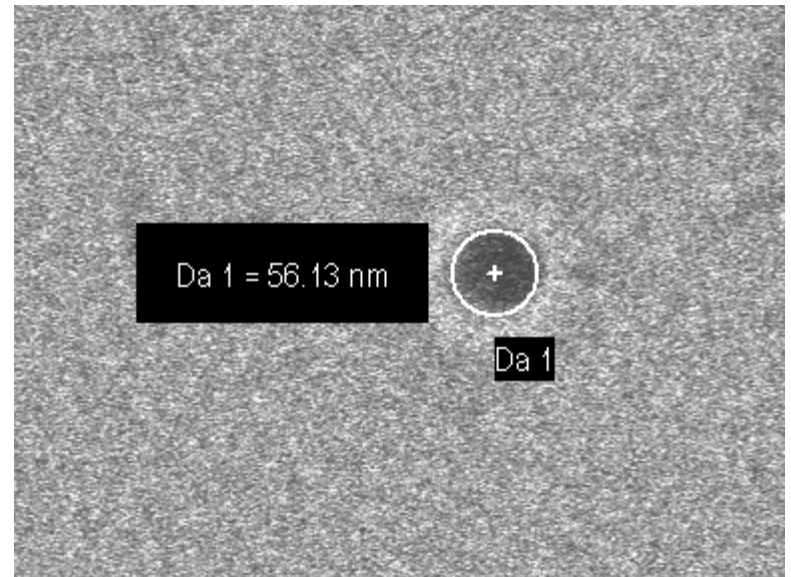
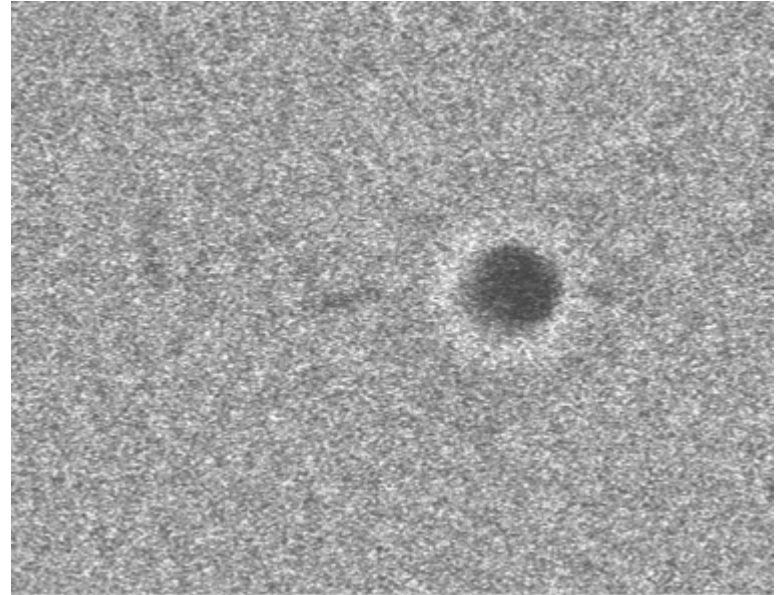
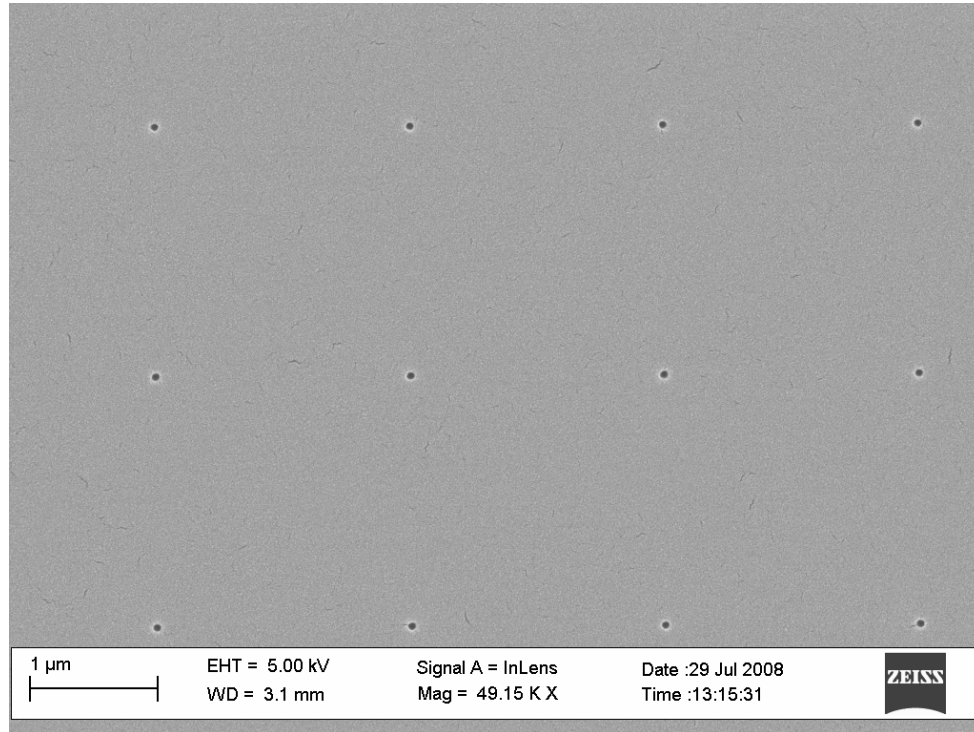
100nm CAD drawn diameter, dose = 250uC/cm2



80nm CAD drawn diameter, dose = 400uC/cm²



50nm CAD drawn diameter, dose = 400uC/cm²



Process Conditions

Substrate: Silicon

Resist: ZEP520A (positive tone)

spincoat: puddle dispense, 4000RPM, 2000RPM/s, 60sec

post apply hot bake: 180C, 2min

resist thickness: 348nm

EBL:

acc voltage: 100kV

beam current: 2nA

shot pitch: 5nm

height setting: SFOCUS only, sample in 3D, probably -20um out of focus

pattern: 50, 80, 100nm diameter circles on 2um pitch, covering a 200x200um area

fracture: JBXFILER, 1nm grid

Develop: 2min n-Amyl Acetate, IPA rinse

develop temperature: 21C