

## E-beam deposition checklist:

- Inspect system
  - Verify vacuum main chamber ( $10^{-6} - 10^{-8}$  mbar)
  - Verify pump speed main chamber ( $525 \pm 5$  Hz)
  - Verify vacuum load lock chamber ( $10^{-6} - 10^{-7}$  mbar)
  - Verify pump speed load lock chamber ( $1500 \pm 5$  Hz)
- Vent load lock
  - Turn off pump
  - Vent until 1 mbar
  - Wait for 400 Hz
  - Vent until 80 mbar
  - Wait for 100 Hz, vent completely
  - Close vent valve
- Insert sample
  - Remove sample holder
  - Place sample on underside of holder (non-shiny side)
  - Replace sample holder
    - Check backside fit by feeling with hand
- Pump down load lock
  - Press door shut while turning on pump
  - Wait until 1500 Hz reached
  - Wait until  $10^{-5} - 10^{-6}$  mbar pressure reached (2-3 min)
- Gently insert sample into main chamber
  - Open gate valve
  - Push sample all the way in
  - Raise bar and retract
  - Check for successful placement
  - Close gate valve
- Start up system
  - Connect manual controller
  - Press HV ON
  - Check voltage 8 kV
  - Check display: "Automatic operation"
  - Turn on deposition controller, press any key on side, press Reset
- Program deposition
  - Select premade program OR
    - Select empty spot in program list, go right
    - Select material
    - Specify thickness
    - Name program
    - Start wanted program with Start
- Remove sample
  - Wait 1-2 min after deposit before opening gate valve
  - Open gate valve
  - Raise handler, and insert gently
  - Lower handler, and retract slowly
  - Close gate valve
  - Vent load lock:
    - Turn off pump
    - Vent until 1 mbar
    - Wait for 400 Hz
    - Vent until 80 mbar
    - Wait for 100 Hz, vent completely
    - Close vent valve
  - Remove sample holder, remove sample
- Final steps
  - Replace sample holder
    - Check backside fit by feeling with hand
  - Pump down load lock
    - Press door shut while turning on pump
    - Wait until 1500 Hz reached
    - Wait until  $10^{-5} - 10^{-6}$  mbar pressure reached (2-3 min)
  - Disconnect manual controller
  - Turn off deposition controller
  - Commit log book entry