

We provide 10x10mm, 15x15mm and 20x20mm cutouts in 6" bare Si wafers (0.67mm thick) at the AJA for general use. Samples should be smaller than these cutouts.

This approach works for samples less than 50mm diameter, otherwise the large hole cut in a Si wafer will cause it to crack during laser cutting. Please talk with Neil if you need a larger opening.

Some users may wish to cut their own wafer due to size constraints. Neil Dilley and Nick Glassmaker have used the LasX fiber laser in the BNC 1100A lab successfully on Si wafers. Please inquire with Nick (nklassma@purdue.edu) if you are interested in having a wafer cut.

- **artwork:** files saved in folder *Users/ion_mill_Siwafer_mask* ; e.g., 10x10mm square with radiused corners, "X" and several crosshatches cut in middle to allow material to break out easier. Artwork can be scaled in the LightGuide software at Las-X.
- **material:** 6" (actually 150mm) diameter x 0.67mm thick bare Si wafer from BNC store room
- cut on the BACK (unpolished) side of the wafer
- **Laser Parameters** (stored in template file *0.5mm SiWafer near cut backside*)
- **laser power** = 100 %
- **depth control** = off
- **Repeat** = 200
- **speed** = 200 mm/s
- **note on aligning wafer in the laser:** an alignment target (available [here](#)) is taped down below the wafer; the flat on the wafer is along a crystal axis, so put this at ~10-20 deg away from one of the principle axes of the laser because we do NOT want to cut along crystal planes due to risk of fracturing.

After cutting (it just takes a few minutes), put the sample face down on a hollow cylinder support and gently press on the cracks until the pieces fall out. Careful, the wafer can break if pressed too hard!