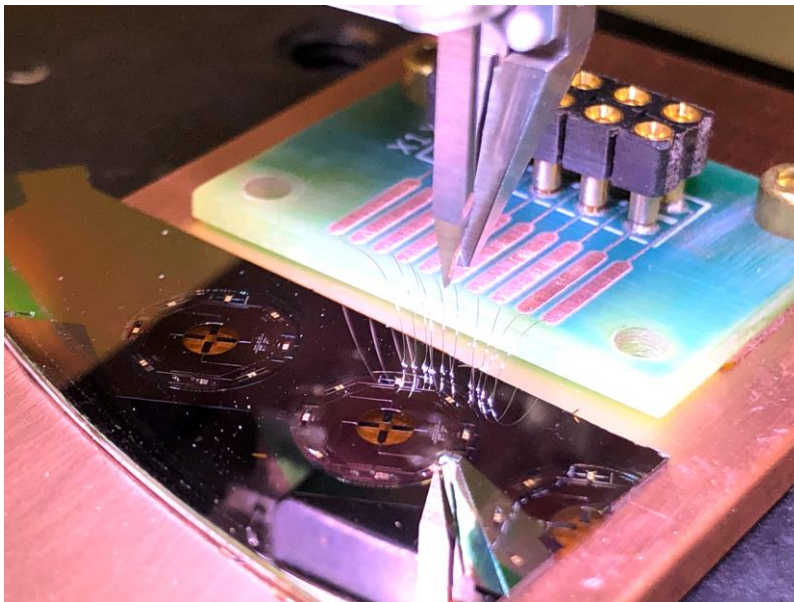
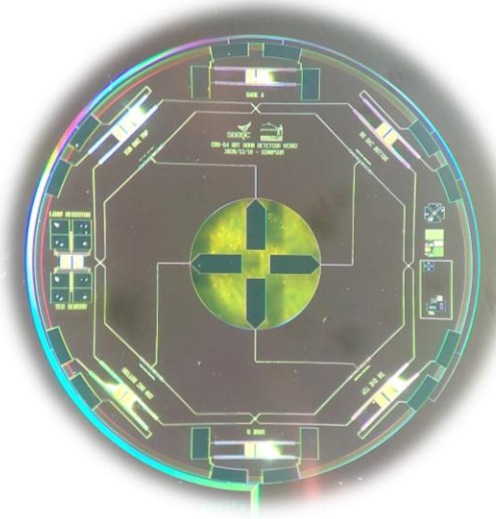
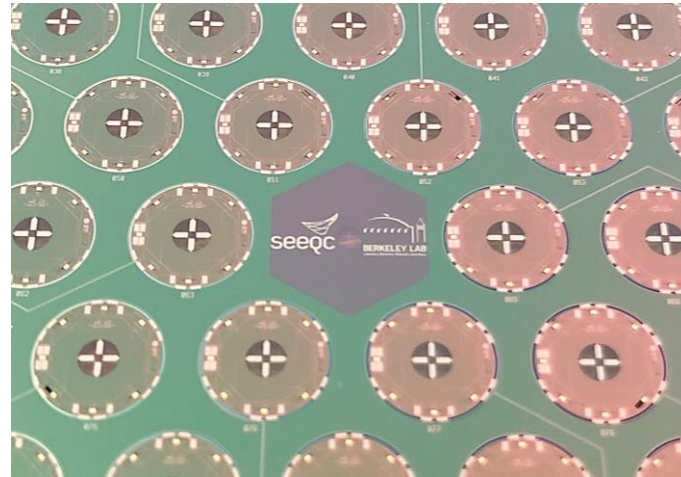
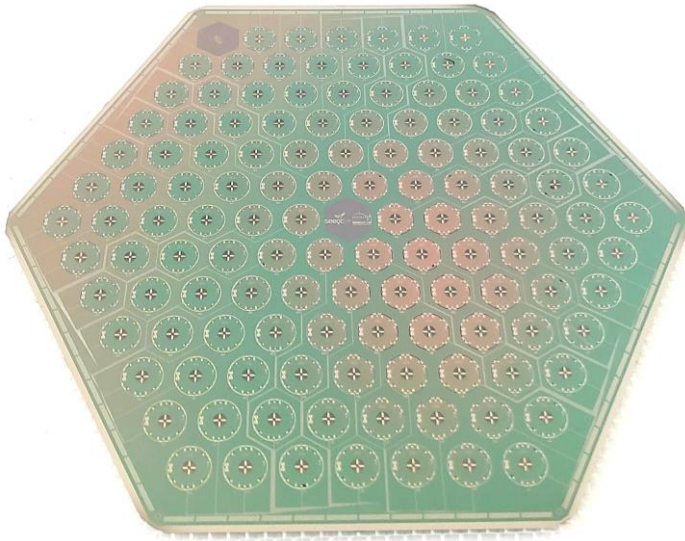


LBNL CDFG Wafer Update

Aritoki Suzuki
Lawrence Berkeley National Laboratory
March 31 2021

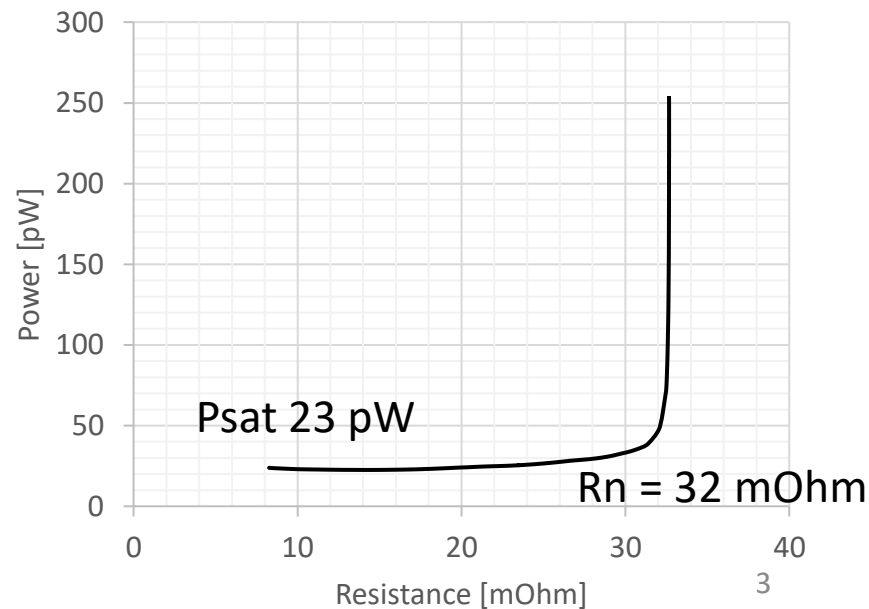
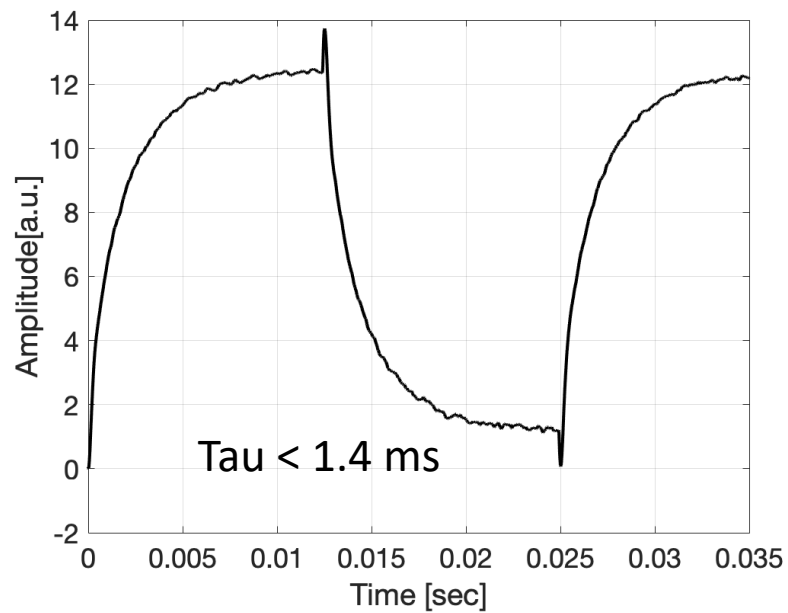
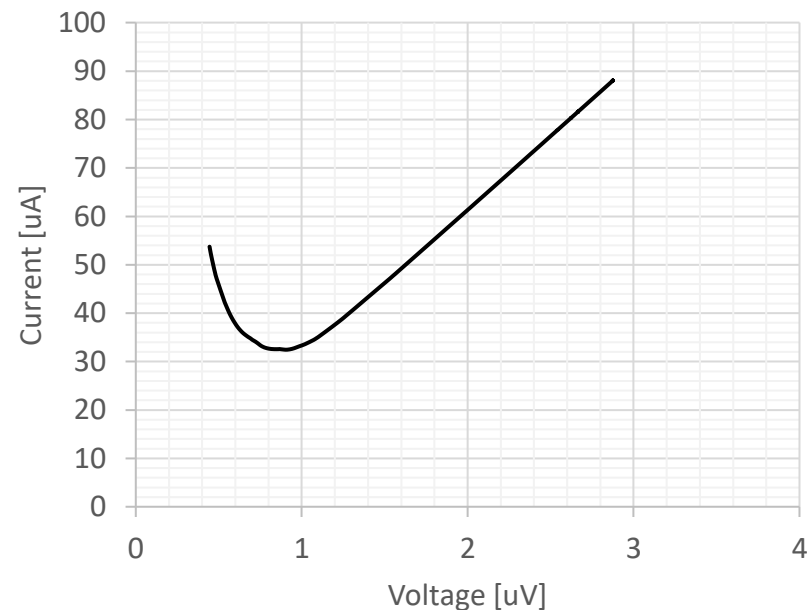
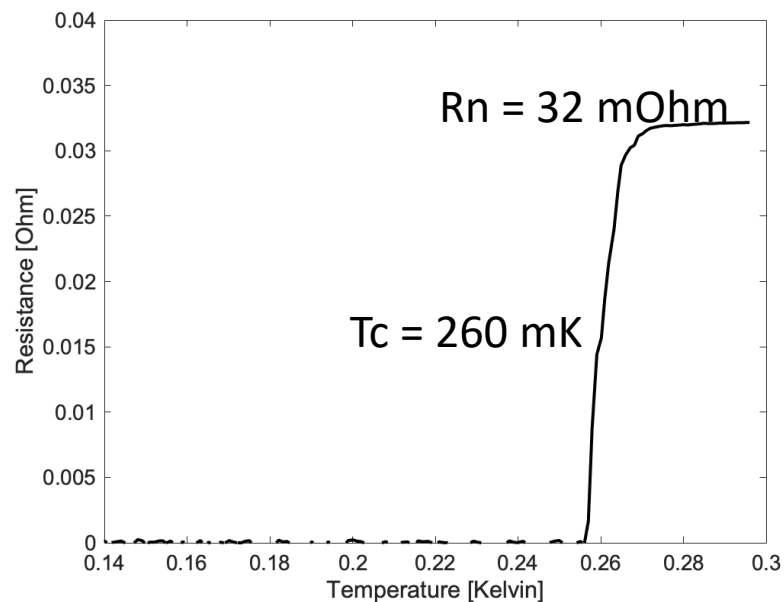
CDFG Wafer



LBLN-Seeqc status

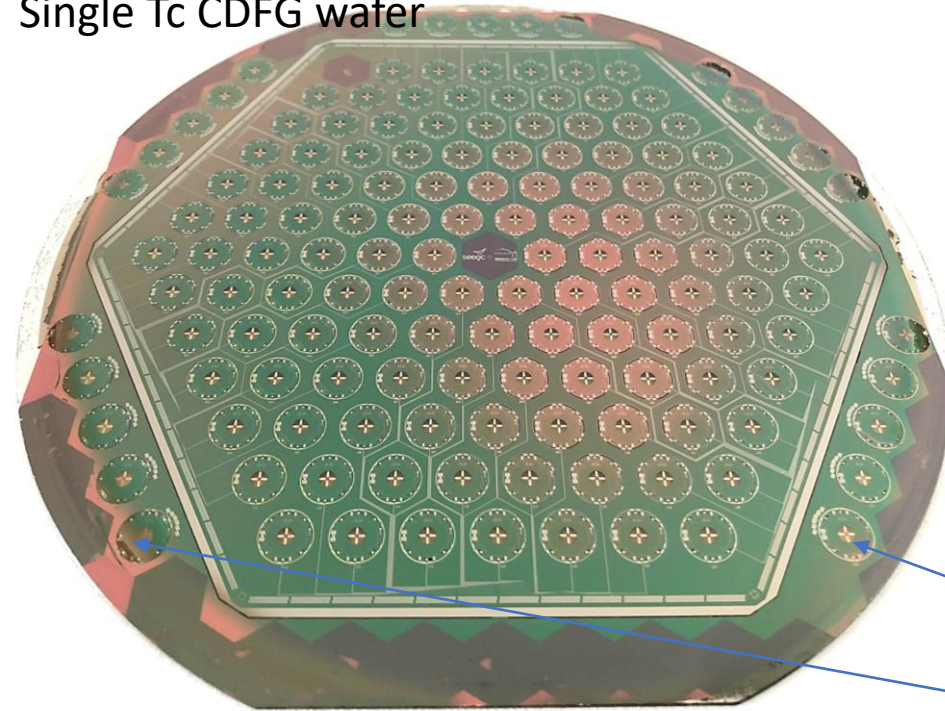
- Fabrication of 1 single Tc CDFG wafer completed
- Fabrication of 2 dual Tc CDFG wafer completed
- Tested witness pixel from single Tc CDFG wafer at LBNL DR with DC SQUID readout
- Going to test more single Tc CDFG wafer and dual Tc CDFG wafer pixels (week of April 5th)

Witness Pixels from Single Tc CDFG Wafer

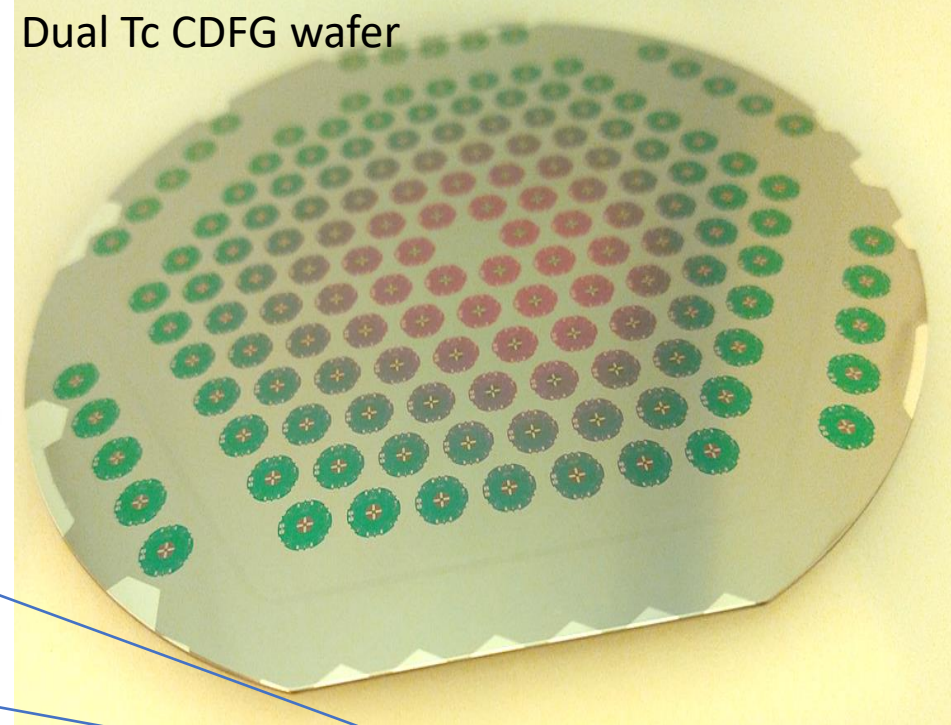


Hypothesis

Single Tc CDFG wafer

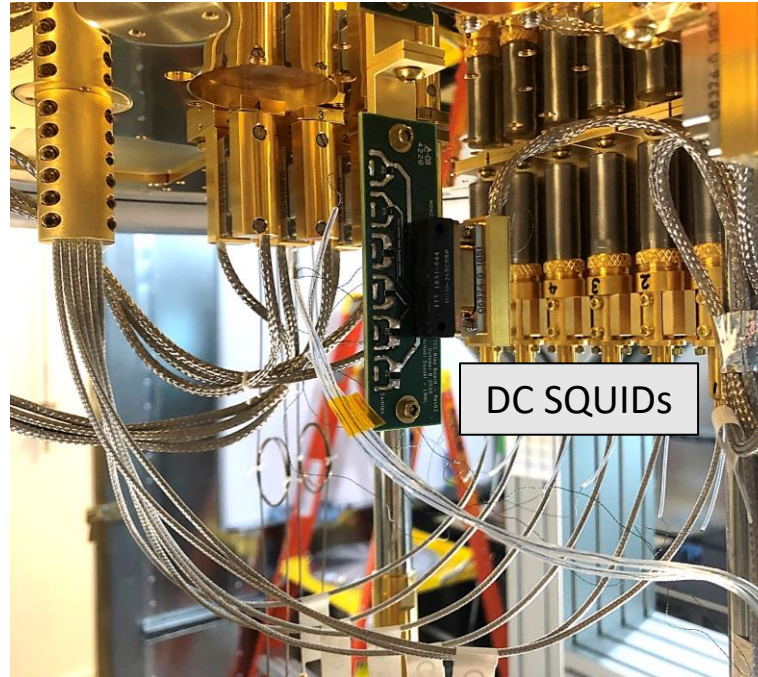
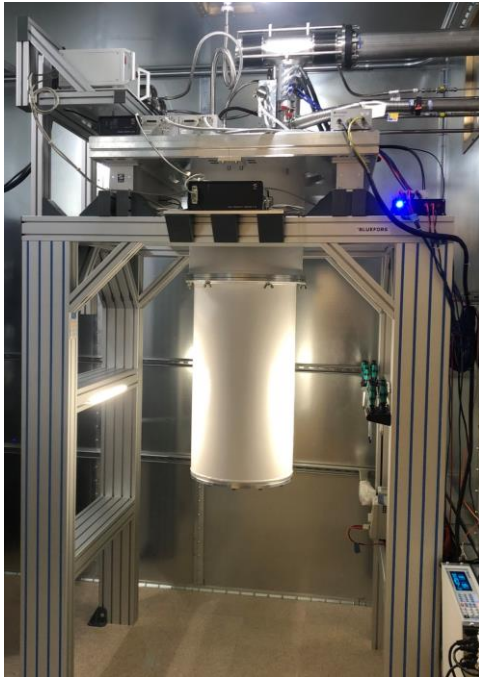


Dual Tc CDFG wafer



- For the single Tc CDFG wafer that we tested, AlMn in witness pixel area had “haze” due to a ring holder we used during ion-mill etching process
 - AlMn was rougher/thinner in witness pixel than the device area → High R, High Tc
 - **We will test CDFG detectors from center of wafers**
- **AlMn haze problem is fixed for Dual Tc CDFG wafer. Film is uniformly etched all the way out to edge of the wafer**

LBL DR Setup



- **LBL DR is in EM shield room**
- **DC SQUID readout system is working well**
 - 6 channels
 - 1.5 mOhm parasitic impedance
 - Dark tests demonstrated (T_c , R_n , P_{sat} , Time constant, noise)
- **Optical setup is coming together**
 - Window & filter parts machined
 - Beam mapper, polarization rotator in hand, FTS from UCSD