

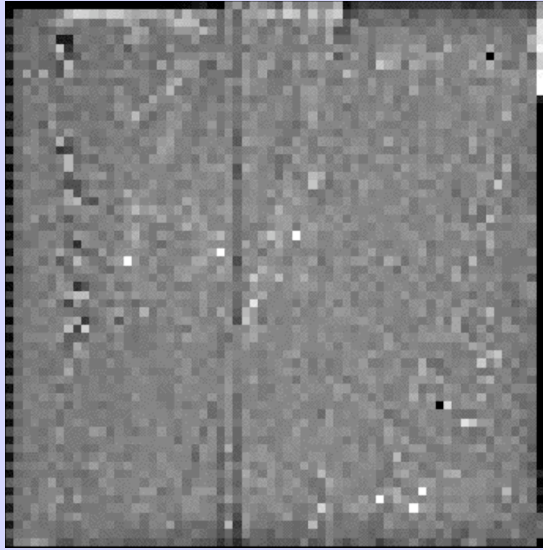
RESULTS OF CEASAR TESTS:

Total of 27 recent hybrids produced in the pipeline, all from CdZnTe wafers that passed selection criteria.

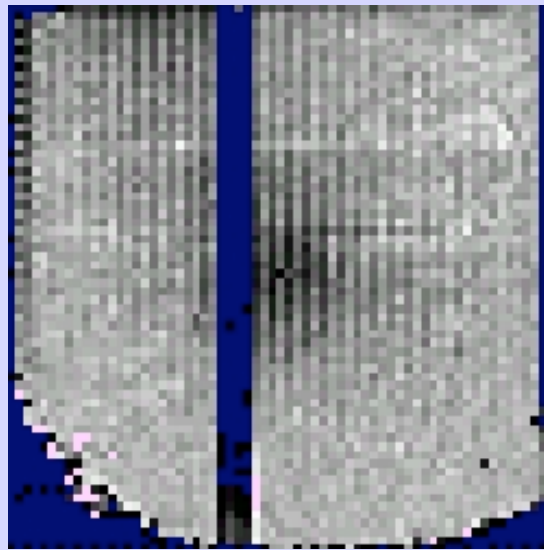
<u>GRADE</u>	<u>NUMBER</u>
A	11
B	4
C	5
D	3
F	4

63 % of grades B – F had hybridization failures

A

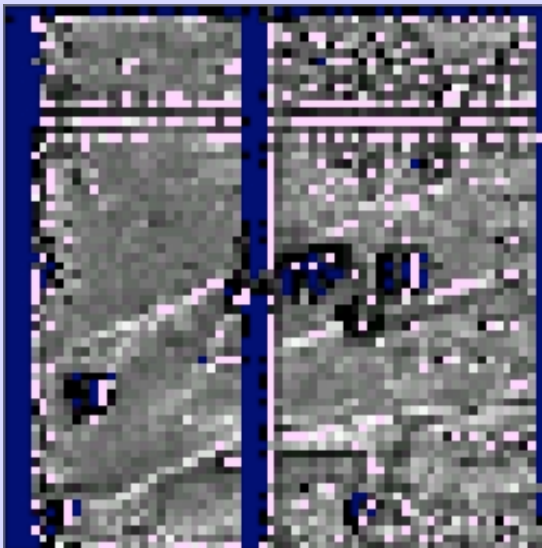


B

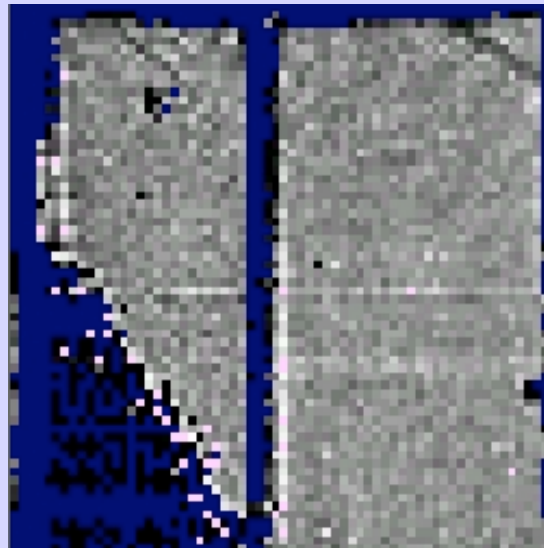


**EXAMPLES
OF HYBRIDS
OF DIFFERENT
GRADES FROM
CEASAR TESTS**

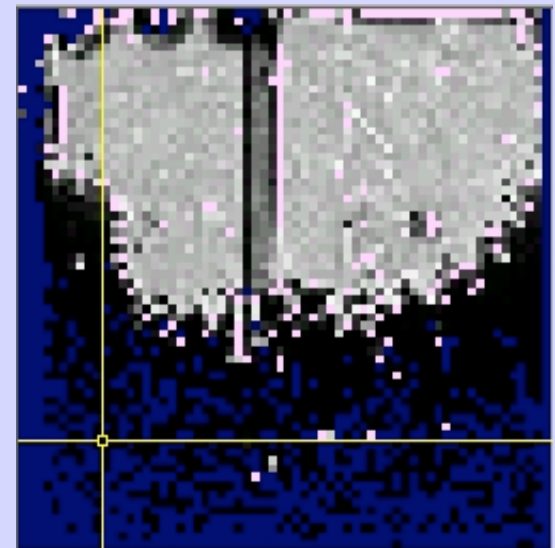
C

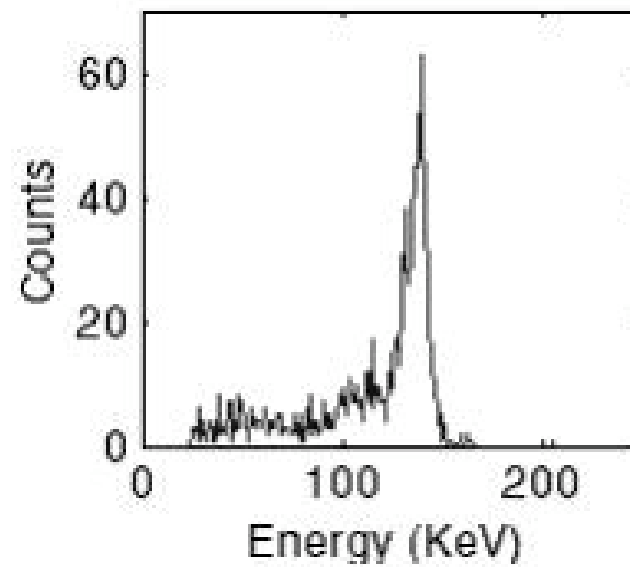
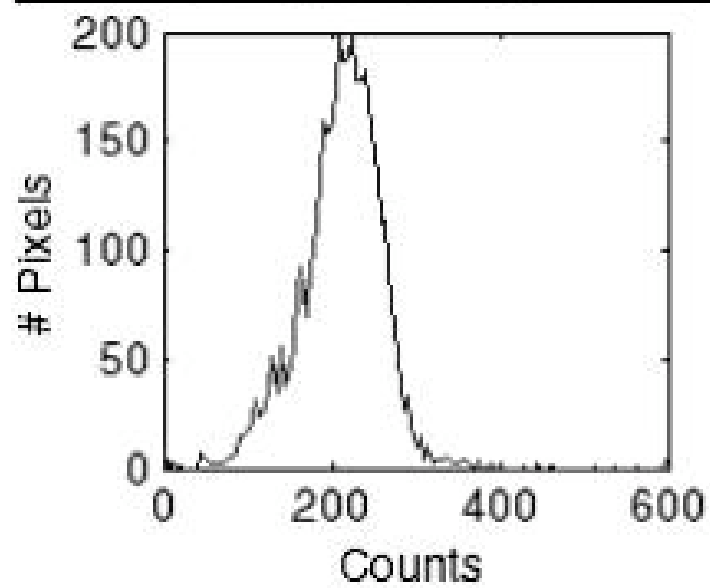
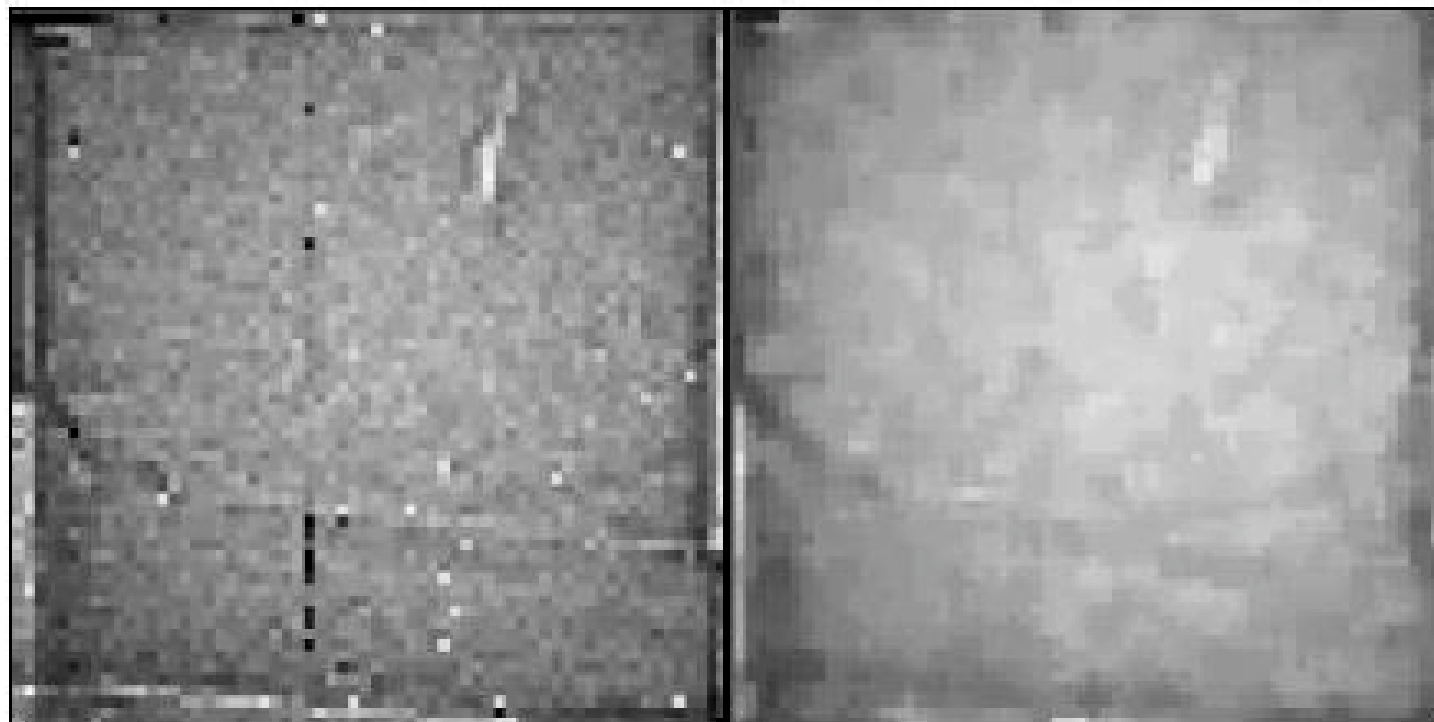


D



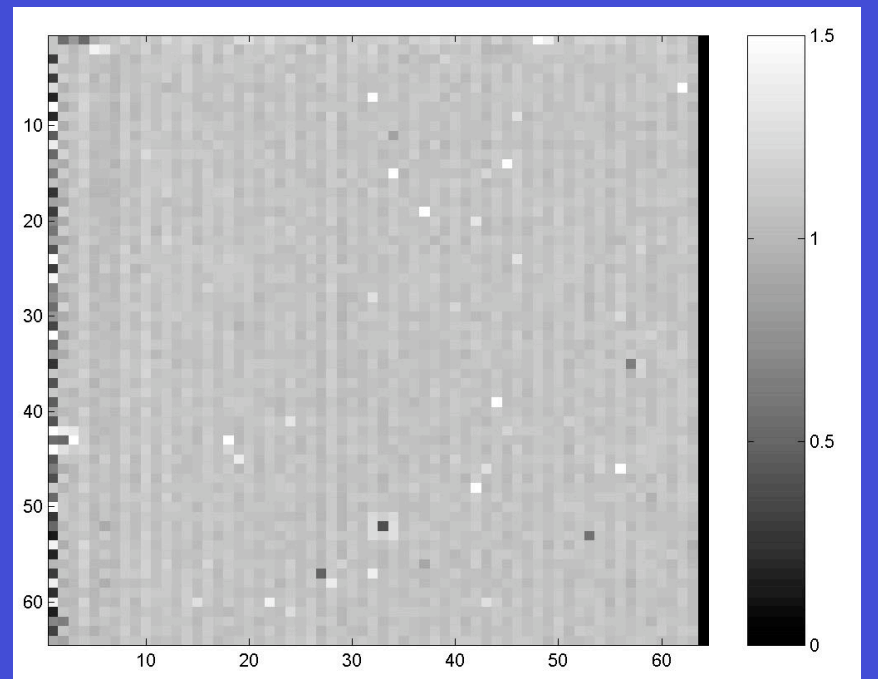
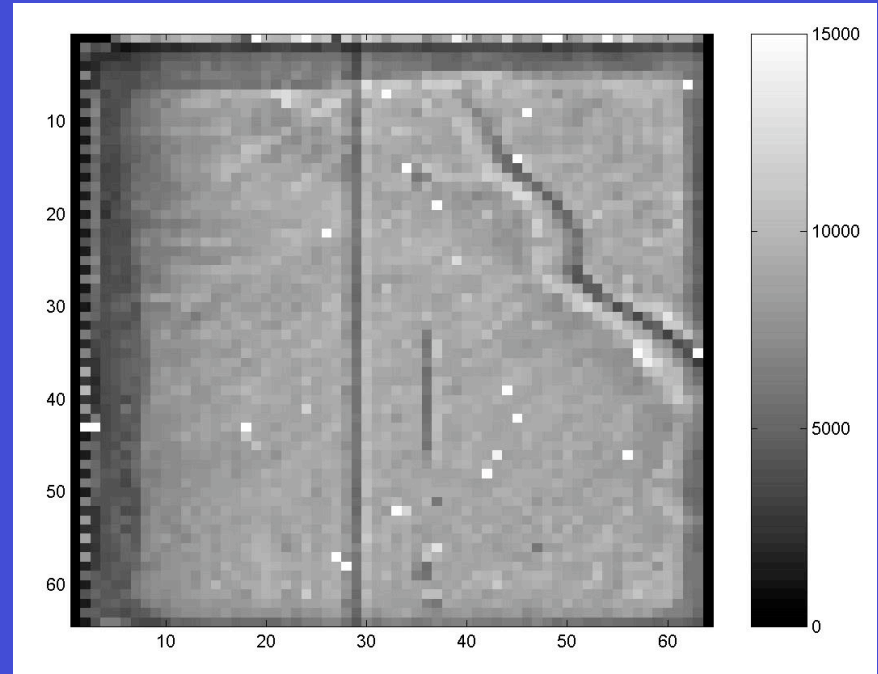
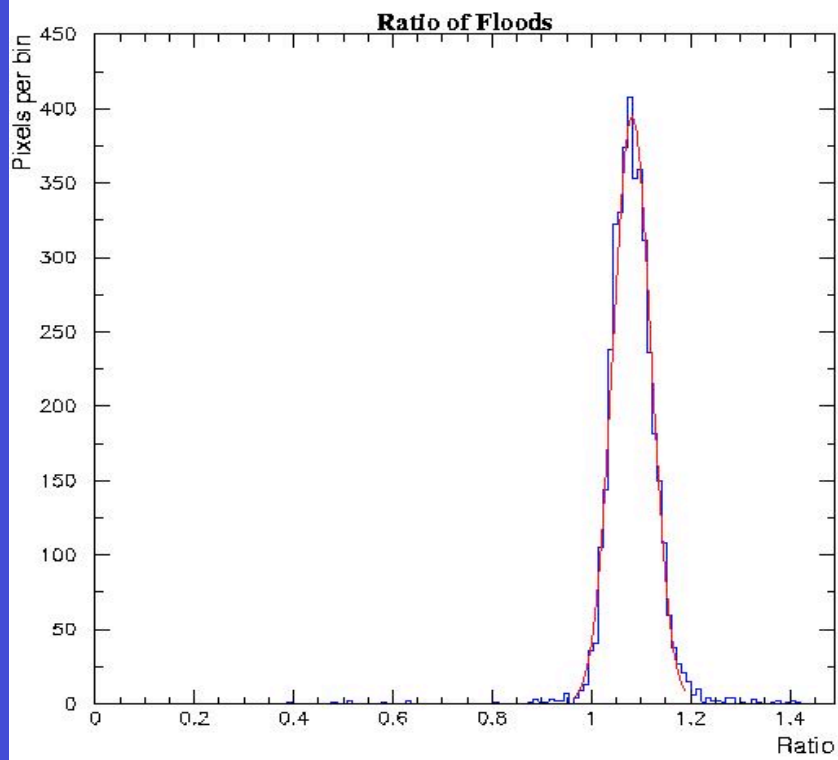
F





Stability

**RATIO OF TWO FLOOD IMAGES
TAKEN 24 HOURS APART**

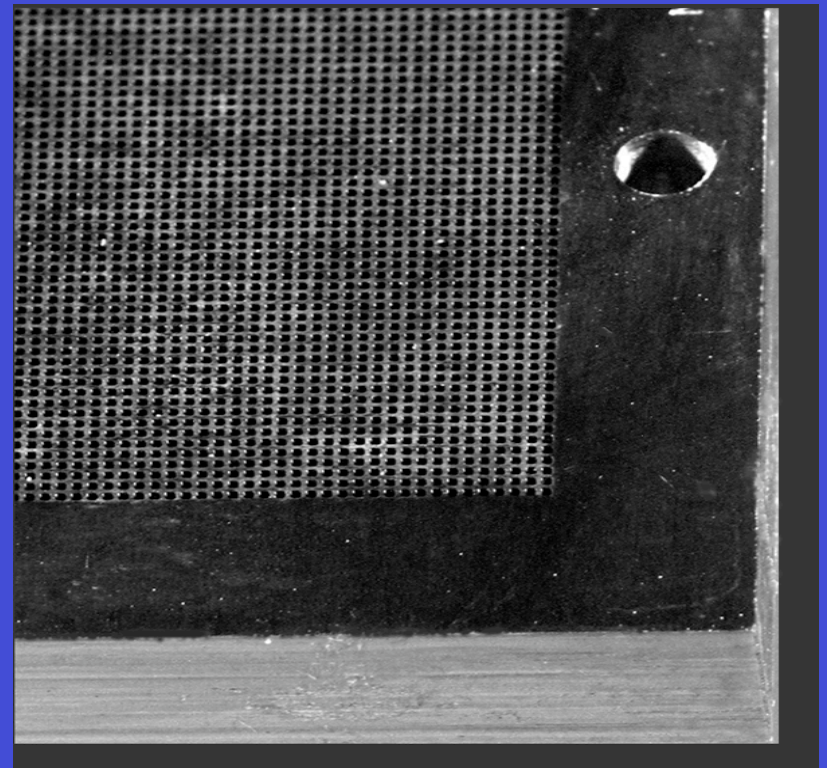


SPOT IMAGER

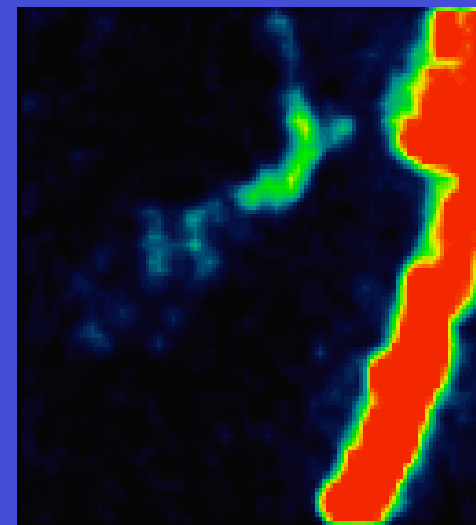
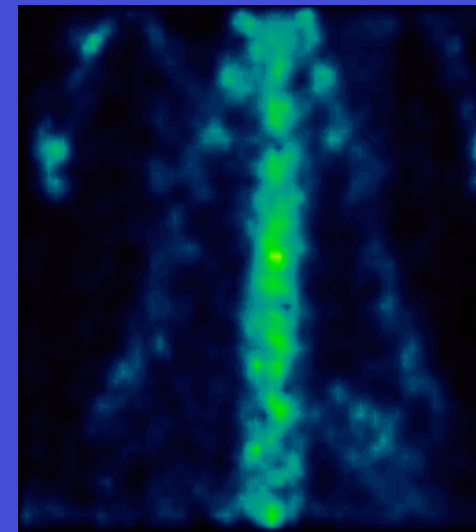
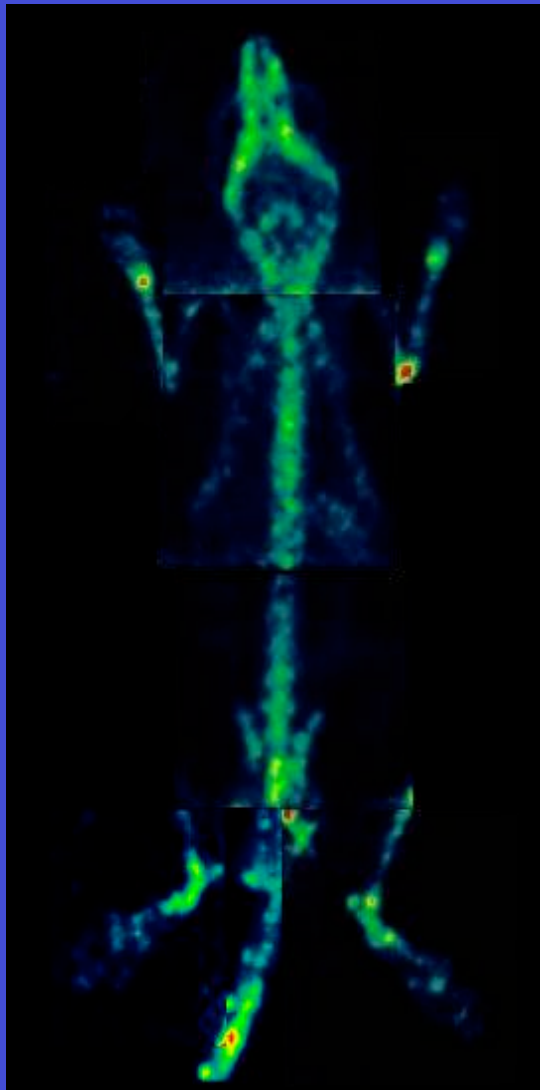


HIGH-RESOLUTION PARALLEL-HOLE COLLIMATOR (TECOMET)

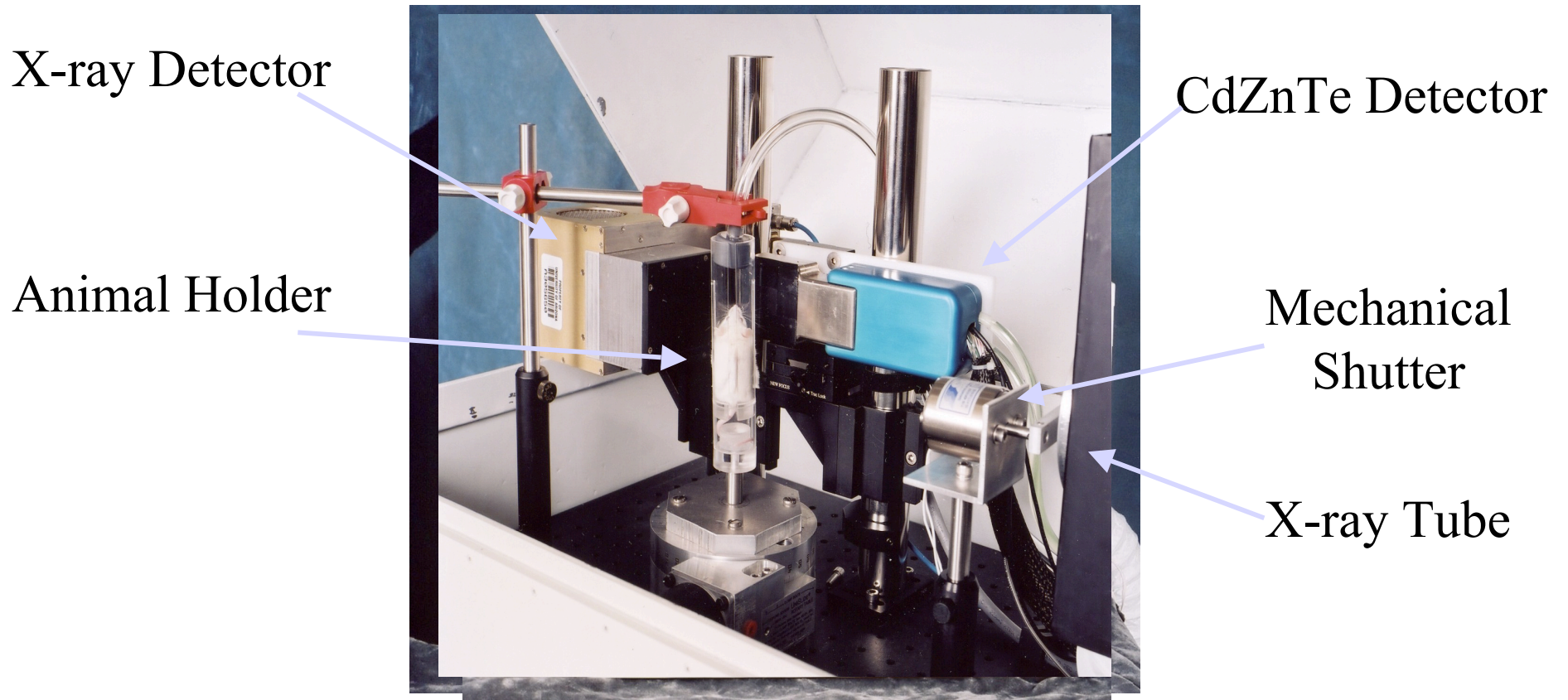
- FABRICATED BY PHOTLITHOGRAPHY
- MATERIAL : TUNGSTEN
- COLLIMATOR BORE LENGTH = 7 mm
- BORE SIZE = 260 μm (SQUARE)
- COLLIMATOR PITCH = 380 μm
- COLLIMATOR EFFICIENCY = 5×10^{-5}



Mouse Bone Scan Imaging

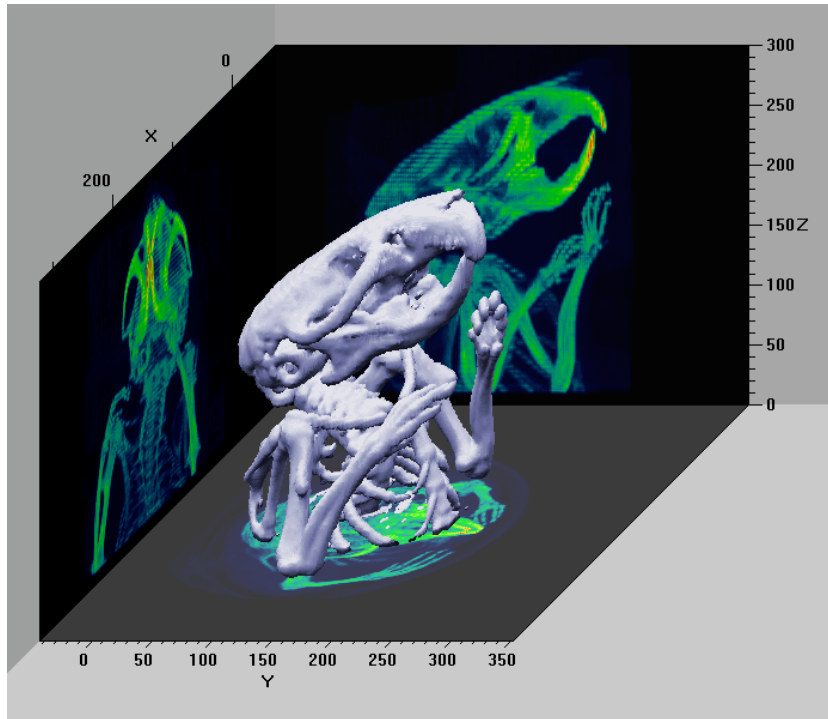


Dual Modality System: Housing

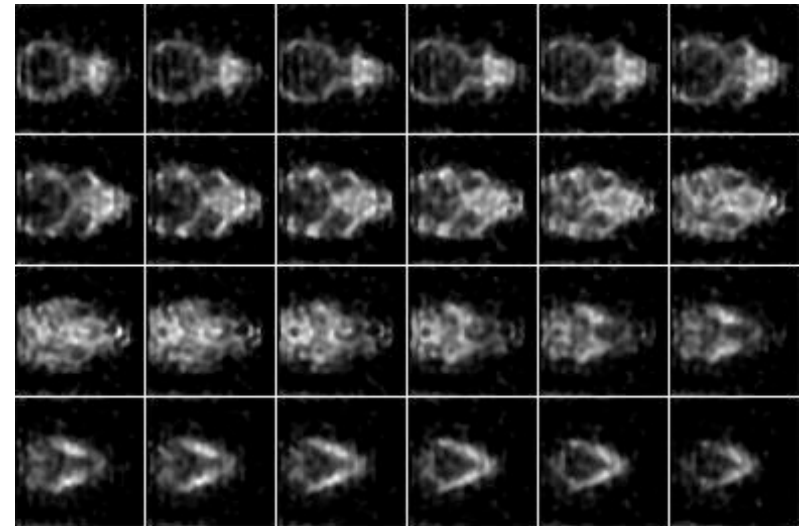


Kastis et al., "Compact CT/SPECT Small-Animal Imaging System," IEEE NSS-MIC, Norfolk, VA, Nov. 2002.

Animal Imaging



CT Reconstructions



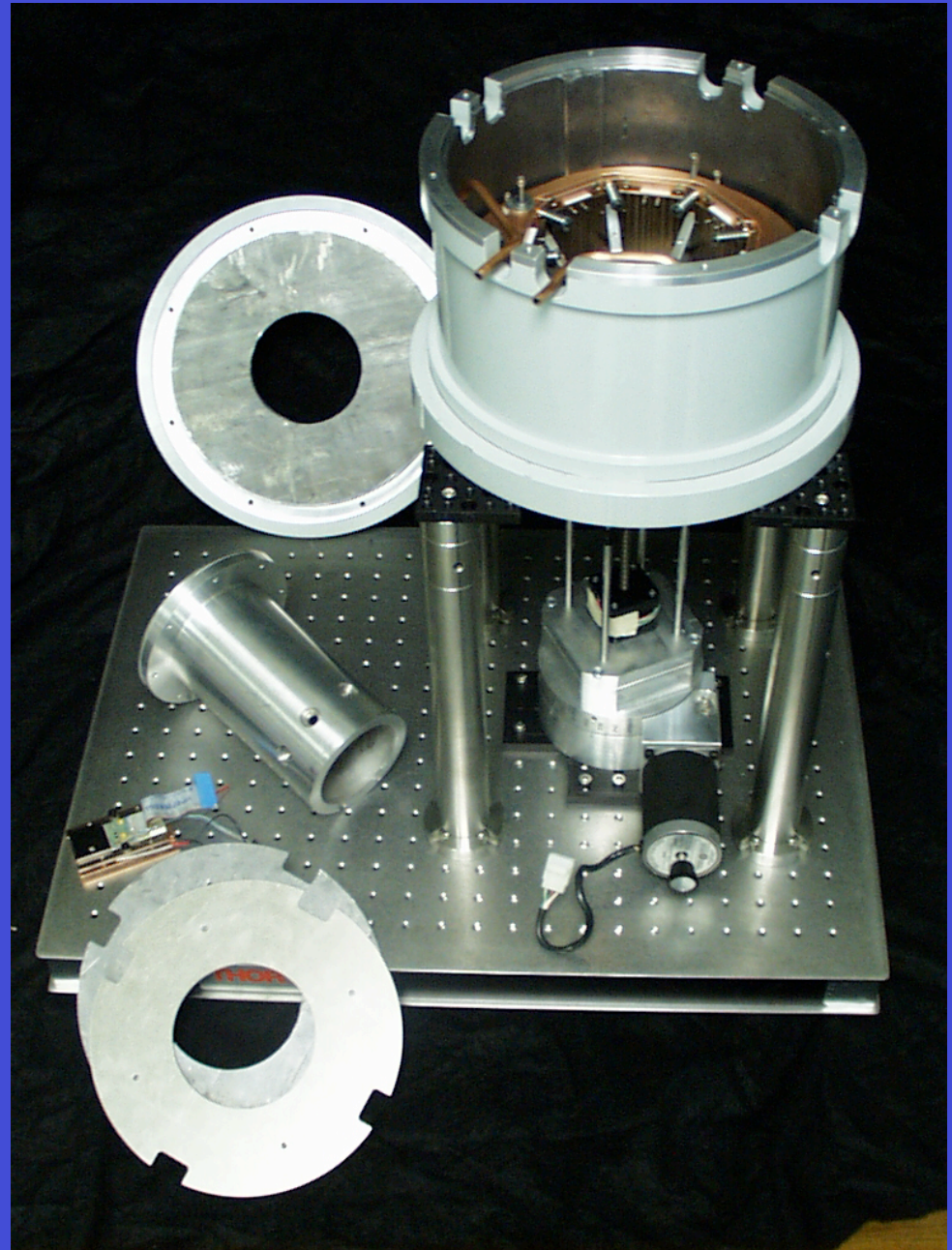
SPECT Reconstructions

Kastis et al., "Compact CT/SPECT Small-Animal Imaging System," IEEE NSS-MIC, Norfolk, VA, Nov. 2002.

SemiSPECT:

- 8 Hybrid Detectors
- Multiple Pinholes
- 23 Degree Rotation
- Vertical vs Horizontal
- New Electronics (FPGAs)
- Dynamic SPECT
- List Mode Readout

(Peterson, et al. to be presented at
IEEE NSS/MIC Norfolk, VA 2002)



SemiSPECT



CONCLUSIONS:

- **Demonstrated high-resolution small-animal imaging (planar and SPECT).**
- **Demonstrated hybrid detectors with > 99 % functional pixels.**
- **Further effort needed on spectroscopy performance and stability.**
- **Cost and hybrid detector yield are still a problem.**