UF Herbert Wertheim College of Engineering
UNIVERSITY of FLORIDA

Research Service Centers

Quick Start: Nano-CT - GE v|tome|x m 240

1. Prepare the sample so it is stable during scanning and will not leak into the instrument. Giving the sample time to settle improves stability and scan quality.
2. Check the circulator for flow and temperature. Log onto the TUMI computer.
3. Change tubes if necessary. Run "Warmup", "Filament Adjustment" and "Centering".
4. Upon a change of X-ray tube, restart datos|x acquisition software.
5. Make sure you have sufficient storage space to scan. **Create** a New *.pca file.
6. Add or remove filters. Attach the sample holder to the chuck. Drive chuck to XS = 0 mm.
7. Switch X-ray **ON** and **Press** Live-Image. *Avoiding collisions*, adjust Y and Z-axis.
8. Iterative process:

Scanning parameters

- Select X-ray parameters (voltage, current, detector timing, sensitivity, # of images and skip) to optimize image quality and scanning time.
- Remember, a lower kV yields better contrast, whereas a higher kV penetrates better and generates more (sometimes considerably more) photons.
- Adjust detector area X and Y to minimize file size and number of projections.
- Keep Power ≤ Voxel Size.
- **Check** the histogram: lower value > 200. max. value < 10,000.
- If the background grey value is low enough (<< 10,000) **switch** sensitivity to S = 2 or even S = 4 to spread out the greyscale values for better 3D segmentation.

Detector Calibration

- **Activate** OFFSET, GAIN, PIXELMASK by checking boxes. If boxes do not check, **go** to sensitivity 1, **re-save** the *.pca file, then back to appropriate sensitivity and check boxes.
- **Move** sample completely out of the X-ray cone (no sign of sample at 2014x2014).
- Turn X-ray **OFF**. Wait for at least 30 seconds or for a single sided histogram.
- **Perform** multipoint calibration. If scanning conditions don't match multipoint calibration set up, right click → default parameters

9. Enter # of projections: 1.2 to 1.5 times the sample sweep width in pixels.
10. Save the *.pca file. **Repeat** above for all *.pca files prior to starting a batch scan.
11. **Start** CT.
12. *Filament adjust* should be performed multiple times per day depending upon settings.
13. After scanning and initial reconstruction, please **move** your data from the RAID drive to free space for other users to scan. No user data older than 21 days (with the exception of sample *.pca files) should be on any reconstruction drive.
14. Before leaving **make** sure that the lab area remains clean and available for other users to prepare, mount and scan samples.
15. If you have any issues during CT operation, please notify staff **ASAP**.

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