

Preliminary Design Review for Cryogenic Transmission Electron Microscope Image Acquisition and Analysis Toolkit (CTEMIAAT)

Lewis Collier
URI CSC 592
01 March 2005

Outline

- Project Overview
- Design Status
- Project Status

Project Overview

- CTEM images of HDL cholesterol
- Cryogenic places requirements on image acquisition and analysis
- Design and prototype a toolkit to assist in the image acquisition and analysis of CTEM images for macro-biologics
- Collect and analyze some images

Design Status

- Initial system-level requirements have been documented (see 20050301T1-0...pdf)
 - SW conceptual design
- Some research into algorithms
 - Calibration and acquisition tools
 - Hough Transform for looking for specific shapes of biological items.

Project Status

- Design for requirements on track
 - PDR version of SPS
 - Algorithms getting there
- Major issue with TEM access
 - No training allowed for me
 - May be able to get “some” images
 - May not be able to get any access to the TEM which will severely limit prototyping