

Today's Agenda

1. Analysis meeting July 19 is postponed (Matt's initiative)
We should discuss when we have it in a better prepared format.
2. Leak test of second magnet vessel at UT (Shaun)
3. We finished prototype magnet testing at ORNL.
With Z360 paint temperature increase 23-30 °C at 20 W power.
Should the tube be sent back to UKY for magnetic tests?
4. Next steps to discuss
 - magnets assembly at UKY (what is needed)
 - tests to be made at UTK after delivery from UKY
 - equipment needed for vacuum tests of ready magnets at ORNL
 - what need to be prepared for nTMM experiment at GP-SANS

Magnets assembly at UKY (what is needed)

Materials for UKY:

- | | |
|--|-------------------|
| 1. Thermoconductive Kapton roll 0.0005" x 28" x 160 ft | - ordered by ORNL |
| 2. Two spools of 18 AWG wires from Remington | - ordered at UT |
| 3. Adhesive Kapton tape for high vacuum | - received at UT |
| 4. Black clamps 10-inch | - ordered at UT |
| 5. Power and degaussing circuit connectors | - ordered at UT |

Drawings for Al + mu-metal disks: (John)

- 4 Disks 1 mm Al + 0.3 mm μ -metal matching magnet vessel flange holes
- Diameter 9" (?) with 4 slits for power wire exits (on both ends?)
 - 1 st disk central square hole 45 x 45 mm²
 - 2 nd disks with central square hole 80 x 80 mm²
 - 3-rd Disk with central square hole 90 x 90 mm²
 - 4 th disk with central square holes 120 x 120 mm²

We need design of degaussing system (Shaun + Yuri + Chris)

To see whether ten 18 AWG wire in the coil will be sufficient for degaussing procedure.

Are the vessel holders for winding are ready at UKY? (Chris)

When winding / assembly can start at UKY? (Chris)

Tests to be made at UTK after delivery from UKY

1. Painting with Z360 outer layers of μ – metal
2. Leak test of installation/travel survival
3. Mounting the thermocouples
4. Fill with CO₂ 1.3 atm
5. Test in air with nominal voltage/current/power
6. Test degaussing system

Test of ready magnets in vacuum chamber at ORNL

1. Gadgets for heavy magnet insertion into vacuum chamber
2. Test thermocouple connections and feedthrough
3. Test degaussing in vacuum

What need to be prepared for nTMM experiment at GP-SANS

1. Revision of connection to kinematic mounts
2. Loading device to GP-SANS guide
3. Magnet alignment procedure
4. Installation of Cd beam catcher (in Guide 7) and Cd-background screen (Lawrence)
5. Extension of vacuum tube between guide 8 and Si-window
6. Vacuum feedthrough port design for thermocouples, degaussing, and power
7. AC power filter design (resonance damping. $L_{\text{coil}} = 3.8 \text{ H}$)
8. 2-channel power supply with CC mode (100 V, 1 A, 100 W) with computer control
9. Magnet current control in DAQ (will it need any soft design?)