

Polymer Laboratory Weekly Meeting Summary – 16.01.2025

➤ **General information:**

- Visit to ITER by R. Piccin for workshop on grounding and electric arc protection.
- Next week general section meeting on Tuesday.
- Braiding machine procurement in progress, multiple offers received.

➤ **Operation & Services:**

- MCBRD former repair project:
 - Initial casting tests using Stycast 2850FT cat24LV.
 - Liquid nitrogen thermal cycle tests planed next week.
 - Report with pictures in progress.
- Boris Tube preparation
 - End caps prepared for bonding, will be vacuum cast tomorrow using MSUT resin.
- SEPTA:
 - 3 coils left to impregnate out of 16, impregnation planned for start of next week.
- Insulation of 24 high-voltage, low-temperature electrical connections at SM18. There will likely be another 24 to do.
- Impregnation planned tomorrow for mechanical 10-stack, MQXF cable.
- Saving pins prepared for MQXFB coils.
- 3D printed parts requested with FFF printers. Bores will be made using metal inserts.
- Other SLA parts requested on the ProJet 6000 printer.
- Silicone part molding for clamp-shells.
- Bonding of Hydraulic connections for NCM section.
- DC Breakdown tests on Al₂O₃ coated samples, properties to be compared with other coatings.
- PSB magnet coil project for testing discharge behaviour:
 - destructive and partial discharge tests performed. Setup being optimised to minimize discharges at terminations.

➤ **Projects (R&D):**

- FCC-hh MQ demonstrator magnet:
 - TGA tests started with mica Shield T for understanding behaviour during reaction cycle.
 - Viscosity tests planned on resin mix of MY740 + HY906 + DY073.
 - Cable conductor to be received in April.
- Samples of fibres and 10-stack being prepared for third trial of modified Nb₃Sn reaction cycle.
- Pumping station to be borrowed for use in the polymer lab cryostat assembly.
- Complementary FTIR analyses on ITER HV wire cross-sections and surfaces, hardener immersion tests planned for next week. To be followed by cable repair studies.
- Polyurethane ageing studies – tensile tests planned for next week.
- Low-temperature (LN₂) DSC planned next week for butyl rubber joint ageing studies.