

Polymer Laboratory Weekly Meeting Summary – 09.01.2025

➤ **General information:**

- POLAB meeting will occur weekly on Thursday at 2:00 pm, in French. The High Voltage laboratory will be added to the POLAB meeting. Proposed plan: general information, HV lab activities, POLAB activities and R&D activities. The meeting shall last 1 hour + 30 minutes for discussion.
- Section meeting the 21st of January, aim to give an overview of the 2024 activities and a preview on 2025 activities (including HFM program, main R&D topic on magnets). Here is a non-exhaustive list of activities for 2025: HFM program, irradiation study of materials (with a focus at cryogenic temperatures), wax impregnation of 10-stack and R&D magnet (e.g. SMC, MCBRD...).

➤ **Operation & Services:**

- Repair ongoing of MCBRD former, with an inner Teflon part then injection of stycast 2850FT cat 24LV, followed by the removal of the Teflon part.
- Vacuum casting on the extremities of BORIS tube to slightly modify the geometry, with MSUT.
- High voltage connections to insulate with Stycast 2850FT cat 24LV, will work at cryogenics.
- Ultra polymers 3D printer: new heating head ordered and will be installed in the coming weeks.
- 50 support parts to print for IRADMAT in PEEK.
- Mould received to cast silicone sealants.
- Request for casting parts in elastomer (80 shore A) with resistance to irradiation (50 Gy). Polyurethane or silicone?
- Office works (1st floor of polymer lab) and storage area in progress.
- Telstar upgrade in progress.
- Viscosity and DMA tests for NCM to optimize the formulation of an araldite F type impregnation system in accordance with specs, for impregnation of SPS coils (6m long).

➤ **Projects (R&D):**

- Cold irradiation set-up is under construction: installation of cryocooler cold head, 40 m long flex lines for connecting the compressor and the cold head in the IRRAD facility are being tested in collaboration with TE/MPE, design of sample holder (with 3D printed prototype for design optimisation).
- Ageing of polyurethane pads still ongoing for PU jacks task force. New tensile samples received (99 samples), and the ageing will start next week for 6 months (with samples tested once a month).
- Complementary micro-FTIR analyses carried out on HV wires for ITER, on the cross-section and on the surface.
- 10-stack samples cut from the 1st impregnation with the impregnator mould (transparent polycarbonate lid), will be analyzed in optical microscopy and SEM.