

Polymer Laboratory Weekly Meeting Summary – 04.07.2024

➤ **General information:**

- ITER Progress meeting took place on Monday and Tuesday. The Polymer Lab will continue its collaborations.
- Safety visit for the installation of new office spaces in the top floor.
- Windows should be changed into sliding windows. Difficult to say if there will be enough budget, considering the possible purchase of PEEK 3D Printer.
- Upcoming visit next week to 3D Printer suppliers by Christian and (Jean-Sébastien).
- **Try to use HFM BUDGET CODE (36433) for ordering materials such as epoxies.**

➤ **Operation & Services:**

- Boris tube electrical test has been performed in the high-voltage lab.
 - o 120kV test on continuous DC, showed stable leakage current. The bonding appears intact.
 - o Partial Discharge tests to be performed, as they are a good indicator of defects, such as voids and impurities.
- A second Boris tube is to be produced, possibly after PD testing has been done, so that bonding technique might be improved.
- Silicone Joint Ropes being produced.
- Clamp shell joints in progress.
- Dolomite-Reinforced bars made for NCM – machinable material that withstands irradiations.
 - o May be interesting for electrical or mechanical characterization.
- Received new samples of SC Link Cables for making 70-Year anniversary souvenirs (15mm slices).
 - o 1m sample received for impregnation.
- Many SLA jobs
 - o EP – Grids for Polar-2 experiment.
 - o Thermal Diffusers for BE.
 - o Clamp Shells for VSC group leak tests.
- Fused Deposition Modeling (FDM) experiment for studies on mechanical fastening mechanism.
- 3D Printing very thin, transparent sample for Université de Genève.
- Series of FDM 3D printed parts for EP ongoing.
- 3D Printed Mockup of 12T – SLA Machine ready for printing.
- Impregnation of 3 10-Stacks:
 - o 2 ‘simple’ ones for Elena - MQXF
 - o 1 HV 10-stack
- Series of SPS tubes bonded to Stainless Steel ongoing.
- Results for Protodune – Leak still appears to be present, unknown why it’s the case.
- Impregnated tubes for Boris Tube.
- 6000 3D Printer has been bugging since a few days.
- Waiting for arrival of Prusa printers – issue with taxes, hopefully resolved soon.
- Jean-Seb giving Solidworks and Bambulab courses.

- Prusa: Tungsten-filled PET-G for radiation resistance.
- Two companies are offering to print RG35 samples for us, in Saint-Genis and Plan-les-Ouates.
- Sorting of expired products has been done. Deciding which of them will be evacuated.
- Testing of irradiated samples: Should not be destructive.

➤ **Projects (R&D):**

- Puncture tests on polyimide and PEEK foils.
- DMA Tests on polyimide and PEEK foils.
- Dielectric Spectroscopy analysis of CTD101K with various fibre reinforcements.
- DC Breakdown tests in liquid nitrogen for characterization of composites.