

Polymer Laboratory Weekly Meeting Summary – 11.04.2024

➤ General information:

- David presentations on the “Visit at the 19th international conference on Deformation, Yield and Fracture of Polymers in Kerkrade, Netherlands” and “Low temperature DMA with liquid N2: installation and initial results”.
- MSC Open Days: 20 & 21 of June. There will be visits by MSC members to the laboratory during these two days. The program of the visit will look like this:
 - For all the visitors: 10 minutes for a general presentation of the laboratory, the services and materials we provide, vacuum impregnation, especially magnet impregnation.
 - Then, we'll split the group in two: 10 minutes for presenting the 3D printing activities and 10 minutes for presenting the R&D activities.
 - Then, we exchange groups.

➤ Operation & Services:

- BORIS Tube (ISOLDE): The goal is to make a glued assembly of three tubes into each other. To do this, a vacuum impregnation is performed. Fiberglass was placed between the tubes to provide mechanical reinforcement. The resin used is the MSUT-Twente for its radiation resistance. Impregnation took place today and the curing has already started. *See pictures in today's meeting Indico page.*
- FRESCA: a new cable has been impregnated with CTD-101K resin; this follows the impregnation series already in progress.
- 3D Printing :
 - ✚ Printing tests of small fixtures (ERNI).
 - ✚ Printing of a maquette in two colors of the CMS detector.
 - ✚ Sebastien has ordered and already received some parts made with Accura Phoenix and PEEK (SLA).
 - ✚ Printing test of parts for the TREFLE project. Further tests need to be done.

➤ Projects (R&D):

- PU accelerated ageing study in progress.
- Sample preparation for study on hardener effects on high-voltage wires with heat-shrink.
- Sample preparation for resin-encapsulated high-voltage wire mechanical tests.
- Fusillo outer former bonding completed.
- Investigation of FTIR for studying resin-encapsulated Thermoplastic Polyimide (TPI) wires.
- Impact testing of irradiated samples at 77K.
- Stress relaxation measurements of fibre-reinforced epoxy samples.
- DC Breakdown testing of 3D Printed materials.
- Preparation of desized fibres for electrical testing
- Characterization of STYCAST EE4215+HD3561 to be investigated.