

Polymer Laboratory Weekly Meeting Summary – 16.05.2024

➤ **General information:**

- New budget codes (BC): lab infrastructure upgrade (99206), lab test equipment special devices (98122), ITER activities (98123). BC to be used before the end of 2024.
- 1-2-3 presentation of Jacob about mechanical testing and fibre reinforced wax and epoxy resins. 1-2-3 presentation of Julia about irradiation damage on 3D printed high performance polymer materials. 1-2-3 presentation of Vincent about the study of chemistry, ageing and adhesion properties of polymers.
- Visit during the conference ICMC scheduled in July is cancelled.
- Open days the 20-21 of June, this time can also be used to do a tour of other labs, however, 2 to 3 persons at the polymer lab required for the visits. The plan for the visits of the polymer lab is as follow: general presentation of the lab (history, activities, posters and pictures), demonstration of impregnation (Cédric and Ahmed), 3D printing (set up one FDM machine on the ground floor in the lab (Sébastien and Jean Seb)) and Telstar (Cédric), demonstration of R&D activities (viscosity (Cédric), DMA (David), surface analysis (Vincent)), gadgets e.g. keyrings (Olivier). Install stand panels for displaying posters (Sébastien). 1 visit group is comprised of 12 persons, for 30 minutes.
- Presentation of David about DMA characterization of “overheated” CTD101K. CTD101K cured in opened mould might react with the oxygen, slightly preventing the curing (sub T_g peak on DMA measurement).

➤ **Operation & Services:**

- Impregnation of Freska cable with MSUT.
- Silicone rods (RTV-4250S) for LMF section being produced (160 in total).
- Electric tests on BORIS tube will be performed the 17th of May.
- Nickel deposition onto clamp shell (in accura 25) for helium leak detection. Nickel is used to increase the mechanical resistance of the shell.
- Parts produced in PEEK with DLP (by Nexa 3D).
- First part received for SPS, to cast under vacuum with Araldite F and HY905 charged with microdol (400 %).

➤ **Projects (R&D):**

- Mechanical testing (Compression/Impact/short beam test) of waxes, epoxies and thermoplastics.
- Chemical ageing tests on thermoplastic polyimide-insulated wires.
- PU accelerated ageing study in progress.
- DMA study of 3D Printed polymers and epoxies with different manufacturing parameters.
- Electrical tests on polyimide films for study on quench heater materials.
- Thermogravimetric analysis of fibre samples for desizing study.