The Minutes from the Positron Source Group Meeting

(People Attended: F. Alharthi, I. Chaikovska, S. Ogur, S. Wallon)

The main topic of the meeting was the experiment to be carried at MAMI on 17-25 October 2021. For this reason, we have prepared a slide with questions and discussed with MAMI + Laura’s group. We expect some drawings from MAMI concerning the target holder/assembly. Here are some highlights of the questions and answers from the MAMI meeting:

* **Energy range:** 195 + n x 15 MeV where n is integer, the energy can be change with a step size of 15 MeV up to 855 MeV maximum. However, the energy change requires some time of half an hour up to an hour concerning the changes in the machine. Maybe 3-4 times of change should not be exceeded during our beam time.
* **Beam Charge and Repetition:** variable up to CW. We can mimic the FCC-ee primary electrons such that we can achieve 10 μs bunch length and cycle with 100 Hz. The pulse charge can be down to 1 nC effectively.
* **Beam Size:** The typical beam size at MAMI is 1 mm FWHM. The beam size of 0.5 mm rms can be achieved regarding the charge. Beam size can be measured with the equipment available there just before the experiment.
* **Experiment Position:** Position A is considered to be the best to manipulate beam. Position B possible yet not able to manipulate the beam. Position C (before the dump) is OK for a day beam time. After Position C, there is a gap of ~15-20 cm between the Aluminum exit window and the beam dump. Our DAQ system may better located 5-7 meters away from the experiment area.
* **Beam Divergence:** Due to the exit window, the beam is diverged inevitably.

Iryna suggested that we may have 2 amorphous, 1 granular, 1-2 crystals to be tested.

Assignments from the meetings:

1. We can ask Hyke to install *RF-track* on IJCLab server.
2. Fahad is asked to start working on the difference in the positron yield when the target is simulated on Geant3 or Geant4, which is around 20% (Salim to work on this as well).
3. Sandry was asked for the Budget Calculation regarding 5-7 meters cabling for each thermo-couple. Sandry also put forward that there are still tungsten balls from earlier granular target manufacture in our laboratory.
4. Salim was asked to get in touch with the target manufacturers and prepare a time table for the group, including a calendar where group members add their foreseen holidays.