I. EXPERIMENTAL APPARATUS

The experimental apparatus employed for the experience composed of:

- a vacuum system, including a vacuum chamber, a turbomolecular pump to reach the vacuum condition and two vacuumeters to keep track of the internal pressure of the chamber;
- a mechanical system, including a step motor through which the support of the source is rotated. This is connected to an Arduino shield and to a computer, through which the step position can be regulated;
- a radioactive source of Am-241, with active material inside an aluminium cylinder;
- a partially depleted silicon surface barrier detector, connected to a NIM module electronic chain and then to a Picoscope digitizer to sample the waveform of the candidate α signals;
- an ALPIDE detector.

1. Vacuum system

The core component of the vacuum system, in which the scattering process takes place, is the vacuum chamber. It has a cylindrical form and its internal diameter is of about 22 cm. It is connected to the double phase turbomolecular pump Pfeiffer Vacuum.

2. Mechanical system

A. Step motor

B. Source support

3. α particles source

4. Silicon detector

5. ALPIDE detector