Construction of a spectrometer for the tracking and measurement of the energy of light charged particles. The spectrometer is formed by:

- Hexagon Timepix3
- Multi-Wire Proportional Chamber
- Time Projection Chamber

Setup in construction @ IEAP’s Van de Graaff facility.

### Hexagon Timepix3

- Event driven pixelated detector (fast response);
- 256x256 55 µm pixels (high granularity);
- 1.6 ns time resolution;
- 14x14 mm² (fits inside the vacuum tube);
- Designed in collaboration with FEE-UWB.

### Time Projection Chamber

- 3D tracking (event topology)
- Particle ID
- Background rejection

- Gas
- Incident particle track
- Ionization track

- GEM
- Readout plane

- Cathode

### 8Be decay

- Hadronic (≈ 100%)
- Electromagnetic (≈ 1.5 x 10⁻⁵)
- Internal Pair Creation (≈ 5.5 x 10⁻⁸)

15th Pisa Meeting on Advanced Detectors, 22nd to 28th May 2022, La Biodola (Italy)

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