

SEPAGE

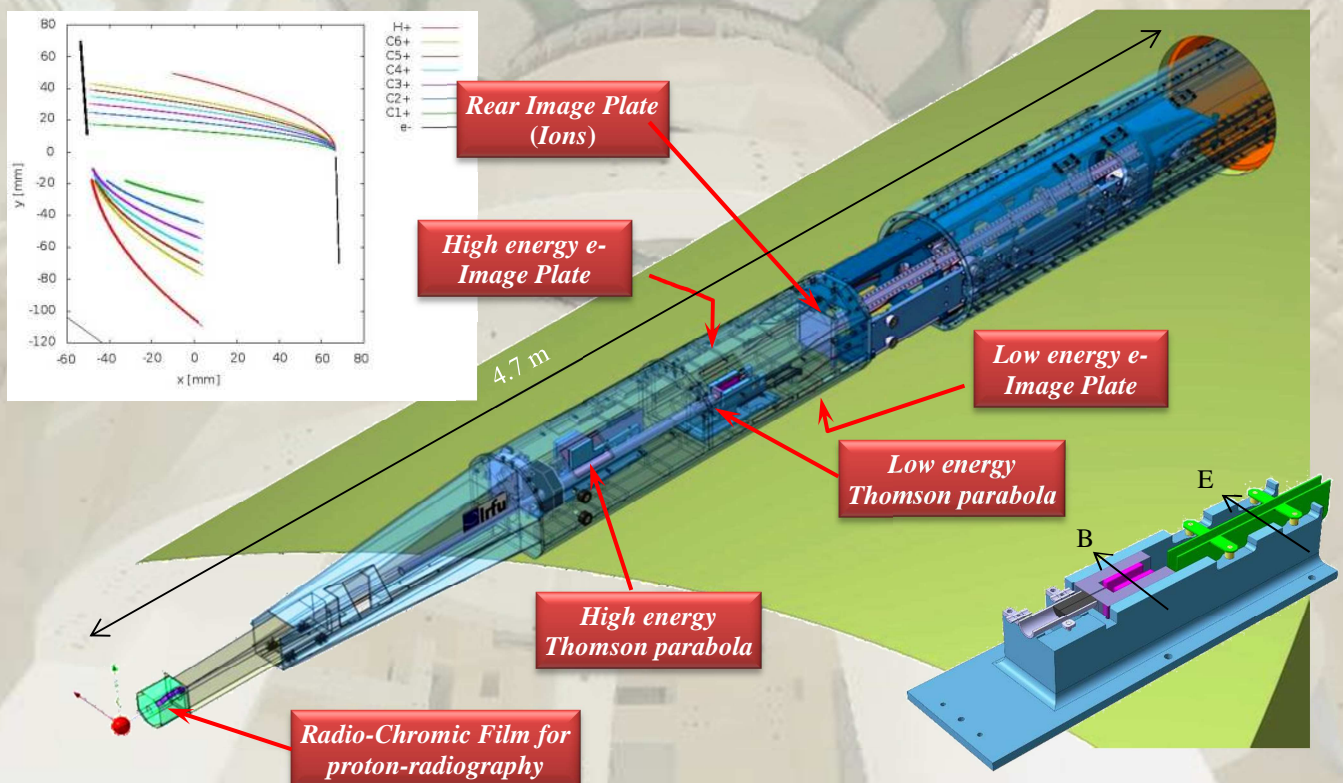
Electron and proton spectrometer

The SEPAGE diagnostic records electron and ion / proton spectra on image plates, and proton radiographies on radiochromic films. It is dedicated to high energy particles beams generated by PETAL. SEPAGE was developed by CEA in the framework of the PETAL+ project.

It is composed of three parts:

- an ion spectrometer for energy from 100 keV to 200 MeV,
- an electron spectrometer for energy from 100 keV to 150 MeV,
- and an imaging module for proton-radiography.

The spectrometer modules are made of two Thomson Parabolas for low (0.1 – 20 MeV) and high (8 – 200 MeV) energy particles. The imaging module is made of a set of radiochromic film for particle energy from 1 to 200 MeV. The preferred working location of SEPAGE is in SID position S26, opposite to the PETAL beam with an angle of 13.5°.



Characteristics	Spectral range (MeV) ($\Delta E/E$)		Spatial resol. (μm) / Field of view (mm)	Time resol.	Setting/ Operational
	electron	proton			
Low energy Thomson parabola	0.1 – 20 ($< 0.5\%$)	0.1 – 20 ($< 6.5\%$)	- / 9	without	SID
High energy Thomson parabola	8 – 150 ($< 1\%$)	10 – 200 ($< 6\%$)	- / 2,3		2017
Imaging module (proton Radiography) Radiochromic film	1 - 200 MeV		-		