

SPECTIX

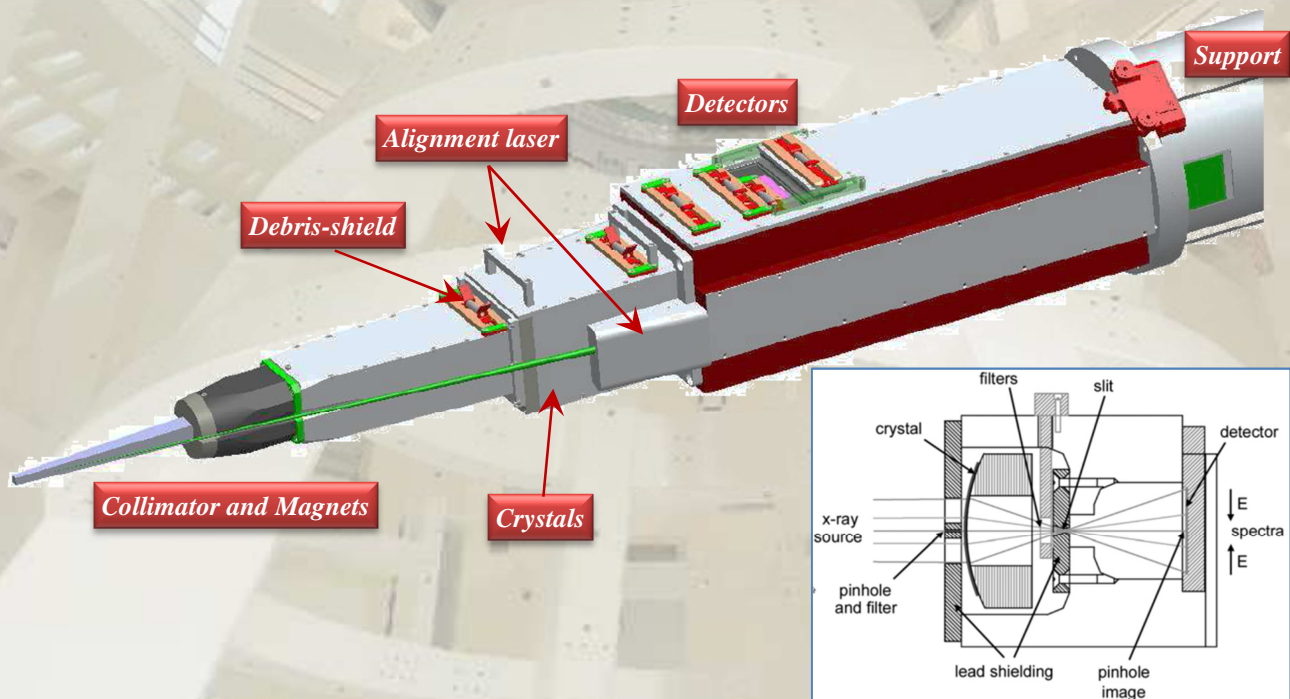
Hard X-ray Spectrometer

SPECTIX is a hard X-ray spectrometer dedicated to K-shell spectroscopy of a large number of materials. This diagnostic is developed in the framework of the PETAL+ project.

The concept of SPECTIX is based on the combination of a spherical crystal used in transmission / refraction (transmission Cauchois-type optics) and a mechanical collimator. The refraction properties of the crystal are combined geometrically with the collimator in order to correlate the positions of the photons with their energies. In this scheme, the dispersion of the spectrometer convoluted with the size of the collimator provides the resolving power of the device.

Identification of contributors to the background noise in such type of hard X-ray spectrometers, and shielding optimization were performed with the help of Monte-Carlo simulations.

SPECTIX is set up in the target chamber by a SID (System for Insertion of Diagnostics).



Characteristics	Spectral range (resol. $E/\Delta E$)	Spatial resol. (μm) / Field of view (mm)	Time resolution (ps) / Dynamic (ns)	Setting/ Operational
1 time-integrated channel Transmission / refraction crystals	6 – 100 keV (>100)	without	without	SID 2016