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## Keeping a 20-year-old XPS equipment providing good data

The XPS equipment at the Laboratorio de Procesamiento y Caracterización de Nanopelículas (LPCN) at Cinvestav-Querétaro, is one of the oldest XPS pieces of equipment that still provides high-quality data. Besides basic issues such as keeping it clean and employing a low base pressure (in the 10<sup>-10</sup> Torr range), two of the reasons that have kept this equipment competitive are the following:

- 1) Alignment. The equipment is carefully aligned to coincide the waist of the (monochromatized) X-ray beam with the waist of the spectrometer analysis volume [1]. The method for the alignment is discussed in this paper.
- 2) Spectrometer mode. Instead of the ARXPS mode of the spectrometer, which has a small angular acceptance, we employ a wide angular acceptance mode even for angle-resolved studies. The reason why this does not affect the angular resolution is discussed in this paper. The wide angular acceptance mode results in two orders of magnitude more counts, providing enough statistics.

### Keywords

Vacuum, XPS, X-ray

### Reference

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### Author approval

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