

**MS44-1-7 Powder diffraction on beamline CRISTAL: faster measurements and automation  
#MS44-1-7**

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**Abstract**

In 2017, a "fast" curved detector consisting of 9 linear modules (Mythen, Dectris) was mounted on the 2-Circles diffractometer at the CRISTAL beamline, thus completing the multi-analyzer intended for high angular resolution measurements. With this detector, the time required to record a diagram has been greatly reduced from about 1 hour to less than 5 minutes in most cases.

To improve the efficiency of experiments, samples mounting was automated: for standard measurements at room temperature, mounting and then centring the capillaries are time-consuming repetitive tasks that required the permanent presence of a user during the experiments. To make better use of the available beam time, a robotic sample changer(capillaries) has been installed on the Cristal beamline. Equipped with a 36 samples magazine, this new device makes it possible to carry out automatic experiments adapted to mail-in or remote access. This poster describes the powder diffraction instrument and the automatic samples centring procedure. Characteristics of the diffractometer with its 2 detectors systems and some results are also presented.