MS08 Serial crystallography, obtaining structures from many crystals

**MS08-1-4 ID29, a versatile beamline for time-resolved serial crystallography at the EBS-ESRF**

**#MS08-1-4**

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**Abstract**

With its recent upgrade to the fourth-generation synchrotron called “Extremely Brilliant Source” (EBS), the ESRF is developing a new sub-microfocus beamline for the time-resolved study of serial synchrotron crystallography (TR-SSX) at room temperature with extremely high photon flux (up to $10^{16}$ ph/sec). The combination of two choppers generates a pulsed beam allowing the data collection from tens of microsecond to millisecond time delays; the double multilayer mirror monochromator (DMM) allows tuning ID29 beam on a wide energy range (from 10 to 20 keV) with variable bandwidth. A new developed diffractometer for fixed-target experiments is adapted to accommodate different other sample delivery devices such as high viscosity injector microfluidic, and tape-drive. This high versatility will make possible to perform mixing experiments but also pump-probe experiments with the support of a high repetition rate nanosecond laser, which runs synchronously with the pulsed beam. In addition to the beamline, users have access to a laboratory in order to prepare their sample and characterise them offline before their beamtime.

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**References**

ID29 Experimental Hutch