

# Serial crystallography at the ESRF Extremely Brilliant Source: The ID29 upgrade project

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The next generation of storage rings, such as the ESRF Extremely Brilliant Source will be able to produce an electron beam with a greatly reduced horizontal emittance. This will result in a small source size and a low divergent X-ray beam that will increase the brilliance by an order of magnitude and will permit to focalise the full beam on a submicron spot on the sample. The delivered photon flux density will open new opportunities for serial crystallography experiments at room temperature and will permit to define new paradigms for data collection methods. Room temperature data collections and very short exposure time will be used to exploit time-dependant conformational changes that are relevant for biological mechanisms. The EBSL8 project consists in the upgrade of the MAD beamline ID29, to become a new facility entirely dedicated to Serial Synchrotron Crystallography. The end-station will be equipped with a dedicated sample preparation laboratory and a data processing area. The beamline is designed to deliver an X-ray beam of unequalled characteristics on different sample delivery systems and to collect still diffraction images from microcrystals. We will present the design of the new beamline and the current status of the EBSL8 project and discuss future plans and new scientific opportunities.

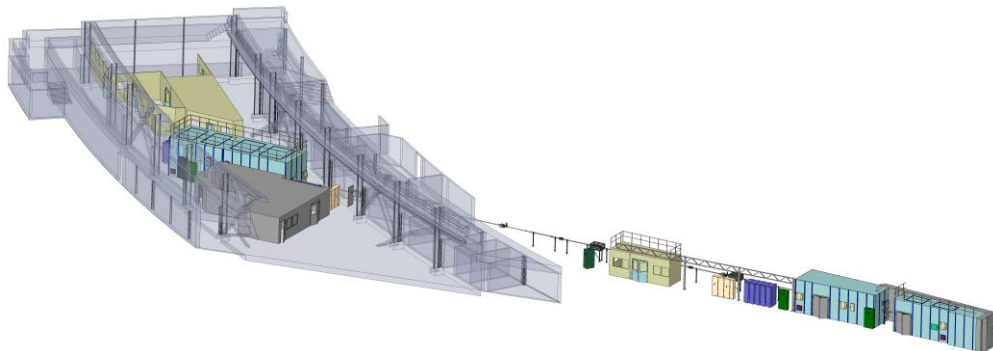


Figure 1: The current layout of the new ID29.