

## Poster Presentation

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#### *ESRF/DBT/EMBL:BM14-2: MX station for in situ, dehydration and MAD experiments*

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BM14 was the first dedicated macromolecular crystallography (MX) beamline to come into operation at the ESRF during 1995. This experimental station has been designed specifically to produce MX diffraction data using Single/Multiple-wavelength Anomalous Diffraction (SAD/MAD) methods ([www.bm14.eu](http://www.bm14.eu)). Currently, beamline is operated by a consortium between the ESRF, the EMBL-Grenoble and the Department of Biotechnology (DBT), India. Recently, the beamline optics was fully upgraded (hence the new denomination BM14-2). A four-time increase in beam brilliance is achieved with the concomitant reduction in average exposure time (~5s today versus 20s before), leading to a substantial gain in the screening capacity. Upgrade includes a new channel-cut crystal equipped with a second crystal pusher to reject high-energy harmonics. The latter device turned to be crucial for Sulphur-SAD experiment success rate. The special goniometer head is installed on microdiffractometer (MD2) goniometer which is capable of handling the CrystalDirect (CD) nanocrystallisation plates [1] so that any crystallisation hit can be exposed to the beam. The plate characteristics are optimal for in situ data collection and they produce diffraction patterns with significantly reduced background. A newly designed dehydration-to-cryogenic nozzle-changer device is also installed in order to avoid the down time between the experiments (such as, In situ screening, humidity control device (HC1), standard cryogenic data collection). European users may apply for access via the Biostruct-X program ([www.biostruct-x.eu](http://www.biostruct-x.eu)) both for CD plate nanocrystallisation trials and for beamtime. Users from India are encouraged to apply from DBT-Portal (<http://process.mbu.iisc.ernet.in/BM14/index.jsp>) for beamtime. The optics hutch refurbishment and implementation of the novel devices in the experimental hutch opens promising perspectives for collecting data at room temperature and that are of importance to the MX users.

[1] Florent Cipriani, Franck Felissaz, Jose-Antonio Márquez, et al., *Acta Cryst. D*, 2012, 68, 1393-1399., [2] Silvia Russi, Babu A. Manjasetty, Hassan Belrhali et al., *Acta Cryst. A*, 2011, 67, C811.

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