

## Facilities for Macromolecular Crystallography at the HZB

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The Macromolecular Crystallography (MX) group at the Helmholtz-Zentrum Berlin (HZB) has been in operation since 2003. Since then, three state-of-the-art synchrotron beam lines (BL14.1-3) for MX have been built up on a 7T-wavelength shifter X-ray source [1-3]. Currently, the three beam lines represent the most productive MX-stations in Germany, with more than 3800 PDB depositions (Status 11/2021). BLs14.1 and 14.2 are energy tunable in the range 5.5-15.5 keV, while beam line 14.3 is a fixed-energy side station operated at 13.8 keV. All three beam lines are equipped with state-of-the-art detectors: BL14.1 with a PILATUS3S 6M detector, BL14.2 with a PILATUS3S 2M and BL14.3 with a PILATUS 6M detector. BL14.1 and BL14.2 are in regular user operation providing close to 200 beam days per year and about 600 user shifts to approximately 100 research groups across Europe. Recently remote beamline operation has been established successfully at BL14.1 and BL14.2. BL14.3 is equipped with a MD2 micro-diffractometer, a HC1 crystal dehydration device and a REX nozzle changer making it suitable for room temperature experiments. Additional user facilities include office space adjacent to the beam lines, a sample preparation laboratory, a biology laboratory (safety level 1) and high-end computing resources. Within this presentation/poster a summary on the experimental possibilities of the beam lines and the ancillary equipment provided to the user community will be given.

[1] U. Heinemann, K. Büssow, U. Mueller & P. Umbach (2003). *Acc. Chem. Res.* 36, 157-163.

[2] U. Mueller, N. Darowski, M. R. Fuchs, R. Förster, M. Hellmig, K. S. Paithankar, S. Pühringer, M. Steffien, G. Zocher & M. S. Weiss (2012). *J. Synchr. Rad.* 19, 442-449.

[3] U. Mueller, R. Förster, M. Hellmig, F. U. Huschmann, A. Kastner, P. Malecki, S. Pühringer, M. Röwer, K. Sparta, M. Steffien, M. Ühlein & M. S. Weiss (2015). *Eur. Phys. J. Plus* 130, 141-150.