

The XtaLAB mini II: A benchtop diffractometer to enrich undergraduate education

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First introduced at the 2008 IUCr meeting in Osaka, the XtaLAB mini was a fully-functional, research grade benchtop diffractometer that has been successfully integrated into both service facilities and research labs around the globe. At the 2016 ACA meeting in Denver, the second iteration of the XtaLAB mini, the XtaLAB mini II, was introduced and featured upgrades that included a modern Hybrid Photon Counting (HPC) detector, the HyPix Bantam, under the control of the CrysAlis^{Pro} software package. The HyPix Bantam is an air cooled HPC detector designed specifically for the XtaLAB mini II featuring high frame rates and wide dynamic range that is capable of performing shutterless data collections. CrysAlis^{Pro} is the widely popular data collection and data reduction program from Rigaku Oxford Diffraction. This presentation explores the range of diffraction experiments possible with a benchtop diffractometer and focuses on the feasibility of introducing single crystal X-ray diffraction facilities to undergraduate institutions as an avenue to enrich both pedagogical and research efforts.