The Rigaku Oxford Diffraction *XtaLAB Synergy-S*, a versatile microfocus sealed tube diffractometer for weakly diffracting samples.

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In the course of the past three years, activities at Rigaku Oxford Diffraction have given birth to a new single crystal X-ray diffractometer, the ***XtaLAB Synergy-S***. As its name indicates, the ***XtaLAB Synergy-S*** combines the best of Rigaku and Oxford Diffraction in terms of hardware components, software programs, years of experience and *savoir faire* in X-Ray crystallography on small molecule and protein compounds in the home lab.

Combining a high X-Ray flux with multiple radiation wavelength options, a fast κ goniometer, a high-sensitivity area detector and the user inspired, proven control and reduction program CrysAlis^{Pro}, the ***XtaLAB Synergy-S*** is highly versatile and can collect data on a wide variety of samples, from very fast data sets (minutes) on well-diffracting crystals to data collection times of several hours on weak samples such as Metal-Organic Framework (MOF) compounds and protein crystals. The main features of the ***XtaLAB Synergy-S*** are:

- A powerful PhotonJet-S microfocus sealed tube X-ray source available in Cu, Mo and Ag wavelengths that, combined to new optics, provide a significant increase of X-ray photons at the sample over previous generations of sealed tube microfocus sources.
- A completely redesigned kappa goniometer that allows for very fast data collection speed (10°/second), symmetrical 2θ positioning and omega collection scans in either direction.
- New hybrid photon counting detector from ROD, the HyPix-6000HE, featuring 100 µm pixel size and a high frame rate of 100 Hz for very fast data collection.
- For protein work, the ability to decrease the beam divergence via a computer-controlled slit, allowing for better reflection resolution for longer unit cell axes.

In this work, we focus on the usage of the ***XtaLAB Synergy-S*** for work on MOF species and show results obtained on different samples of varying sizes and diffracting abilities.