MS15-1-15 The new PHOTON III HE detector – unbeatable sensitivity for short-wavelength crystallography #MS15-1-15

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Abstract
Recent years have seen strong growth in several areas of crystallography that require data collection using shorter wavelength X-rays emitted such as the development of new functional materials containing heavy elements, charge-density studies in quantum crystallography and studies on the effects of high-pressure on various types of crystals from the geosciences to improving pharmaceutical formulations. All typically require high precision data from advanced diffraction experiments.
The major technical drawback to crystallography using higher energy X-rays is that the quantum efficiency of many photon-counting direct detectors is very low at such high energies, and so it becomes increasingly difficult to obtain sufficiently precise data.
The new PHOTON III HE detector takes advantage of the advanced indirect detection employed in the PHOTON III series [1] to achieve very high quantum efficiency for the higher X-ray energies emitted from sources such as Mo, Ag and In.
Using a number of selected examples, we will demonstrate the improvements in data quality achieved by combining a hard radiation source with the new PHOTON III HE. We also will provide insights into modern indirect detector technology.

References
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Photon-counting PHOTON III HE detectors