Microfocus X-ray Sealed Tube Sources with Diamond Hybrid Anode Technology for Cu, Mo and Ag Radiation

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One year after the introduction of the newest type of microfocus sealed tube sources, the IμS Diamond series is now established as a new class of High Brilliance Solutions for X-ray crystallography. It is now available not only for Cu radiation, but also for Mo and Ag radiation.

The IμS DIAMOND is using a unique anode technology, the diamond hybrid anode. The balanced heat management in the source assures that the intensity loss over time is only a few percent over 10,000 h of full power operation, which is significantly lower than the intensity degradation observed for microfocus rotating anode sources. As a consequence, the intensity of the IμS DIAMOND is about 20% higher than the average intensity output of a modern low power microfocus rotating anode.

In this contribution, we will be discussing the main features of the IμS DIAMOND and presenting selected results to demonstrate the impact of this new class of microfocus sealed tube X-ray sources on the data quality for applications, such as protein and small molecule crystallography. We will be ending with an outlook for newer applications like the use at synchrotrons for sample evaluation or as a backup method during downtime periods.