

## **THE LATEST DEVELOPOMENT OF MICROFOCUSING SOURCE BASED BEAM MODULES AND THEIR APPLICATIONS**

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Microfocusing sources coupled to multilayer optics as probe beam solutions have gained broad recognition since Rigaku developed and introduced the first beam module for protein crystallography and small angle scattering more than ten years ago. Rigaku's technology offers the highest resolution and intensity while lowering cost and making operation easier for users. The technology and capability of microfocusing sources are still evolving, and the application scope continues to grow. In this presentation, we will review several major issues in the development of this technology. These issues include fundamental principles, major engineering issues, past achievements and current status. Particularly, we will discuss the development of x-ray sources, x-ray optics and the close integration of these two key technologies. A new level of optics technology, called Arc)Sec™ will be introduced and discussed. These discussions will offer some essential methodologies in evaluating the performance and avoiding confusion. Various applications will also be discussed, which include SAXS, single crystal crystallography, monochromatic micro-XRF and critical dimension metrology in the semiconductor industry.