

Latest development of multilayer optics for analyzers and probe beam solutions at Rigaku Innovative Technologies

Nick Grupido, Boris Verman, Yuriy Platonov, Licai Jiang

Recent advances in multilayer coating technology used for producing Analyzers for WD XRF Spectroscopy and Optics for Microfocus X-ray Generators have achieved performance which is near theoretical limits. These developments have benefited many applications. For Microfocus X-ray Generators, three essential elements of a laboratory beam solution are the source, the optic and the design. These determine the performance of the probe beam. Today, with more than 15 years advancement, especially with the performance of multilayers approaching theoretical limits, the pure performance of the beam solutions for XRD applications largely depends on the choice of sources. On the other hand, monochromatic excitation based micro-XRF applications impose serious engineering challenges, which in theory, still have great potential for improvement and development. On the WDXRF analyzer side, enhanced small d-spacing multilayer analyzers promise faster analysis for Si through Na. In this presentation, we will present the latest development at RIT, which includes enhanced multilayers and beam solutions for high energy, multiple energies, micro-spot and superior focal spot stability.