

**MICRO X-RAY FLUORESCENCE SPECTROSCOPY  
FOR QUALITY CONTROL OF LAYERED MATERIAL**

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Energy dispersive X-Ray fluorescence is a very well established method for the quality control of layer thickness and composition in a manufacturing process. Applications in microelectronics and microsensor industries require very small measurement areas on the sample which cannot be achieved with conventional collimators at a reasonable measurement time. Recent developments in capillary optics provide an efficient method of focussing the wide angle beam of the x-ray tube to a spot size down to 25 $\mu$ m, without the disadvantage of intensity loss. Due to the high primary intensity the measurable range of thickness can be extended down to the 10nm range. The paper will describe on several applications the benefit which results from the use of capillary optics. Results of several multilayer/multielement applications from the microelectronics, data storage, and microsensor industries are discussed.