

---

## ANALYSIS OF FRESH & WASTE WATER USING TOTAL REFLECTION X-RAY FLUORESCENCE (TXRF)

**Armin GROSS, Hagen STOSNACH**

*Bruker AXS Microanalysis GmbH, Schwarzschildstr. 12, 12489 Berlin (Germany)*

Total reflection X-ray fluorescence (TXRF) spectroscopy is a well-established and versatile method for the trace element analysis of liquid samples [1].

Applied to fresh and waste water analysis TXRF reveals its unique capabilities. Due to the thin film sample preparation, matrix effects are irrelevant and quantification is performed by means of internal standardization. Additionally, corrosive matrix components like acids or bases, common in industrial waste waters, can be analyzed without any risk to the analytical instrument. Due to the compact design of the spectrometer even mobile use for measurements on-site or in the field are possible.

The capabilities and limitations of TXRF spectroscopy for the trace element analysis of fresh and waste water samples are evaluated in this paper.

### **References:**

- [1] Klockenkämper, R., Total-Reflection X-Ray Fluorescence Analysis, Wiley & Sons (1997)