

## **Automatic Correction of Oil or Water-Based Matrix by Analyzing Scattering Peaks**

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X-ray fluorescence (XRF) techniques have been widely used to quantify the concentration of trace elements in water and oil samples. Because oil and water samples could be mistaken with each other due to their similarity in physical properties, there could be significant errors of the measurements caused by wrong selection of matrix. In this study, we will present a new method that enables our devices to automatically distinguish water-based samples from oil-based ones by analyzing the profile of Compton and Rayleigh peaks in XRF spectrum.