

APPLICATIONS OF POLARIZED EDXRF SYSTEM FOR LIGHT MATRIX SAMPLES

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The polarized source configuration in EDXRF reduces system background, improving precision and light element detection limit compared to direct excitation configuration. We have developed a new polarized EDXRF (EDXL 300) which can hold large samples up to 380mm in diameter to expand the applications such toys. Elements from Na to U can be measured simultaneously, without the need for specialized sample preparation.

One of the effective applications for polarized EDXRF system is oil analysis. Fuel oil consists of the light matrix (C and H) and then the large background is observed in the direct EDXRF system because of the scattered radiation of the continuous X-rays from X-ray tube. The polarized EDXRF system reduces the background drastically by the polarized optical configuration and then a low content of sulfur and phosphorus in biodiesel can be analyzed with ultra low detection limit.

The advantage of the polarized EDXRF appears especially in the applications for light matrix samples because of efficient background reduction for the analysis for both heavy and light elements.

Further results and more effective applications by the EDXRF system will be presented.