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# Oil samples analysis using X-ray fluorescence

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In this work, several oil samples from different Brazilian basins were investigated using Energy Dispersive X-Ray Fluorescence spectroscopy technique (ED-XRF) aiming to obtain qualitative information about their chemical composition [1,2]. The budget of analyzed samples was composed of twelve oil samples from five distinct oil fields belonging to the Campos Basin of the Esp´ırito Santo and to the Santos Basin, Brazil. The samples were trickled on a thick Kym foil (99.9%) with 2 cm of diameter. The ED-XRF measurements were carried out using a portable device (Amptek XR-100SDD model) [3,4] and the spectra analysis were performed using the WinQxas software. Besides, to enhance the detection of some elements at lower concentrations, Tungsten and Aluminum filters were placed at the exit of the X-ray tube. The preliminary results indicate the presence of S, Cl, K chemical elements and with the use of Al and W filters, identification of Br and Sr at lower concentrations in four oil samples from the Marlim, Pampo and Jubarte fields of the Campos Basin could be also achieved. In addition, the obtained data so far raise the question how these different chemical elements are correlated with the different oil basis especially for those elements present at low concentrations.

References

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