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XRF Determination of Trace Elements in Single Crystals of K-micas for Biotite as Example

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A calculation method of XRF determination of trace elements in K-micas single crystals is presented. The method is based on the use of known values of the major elements content and the measured ratio of the major and trace elements fluorescence flows. The calculation is carried out for monochromatic exciting radiation in two possible measurement geometries. Standard samples as well as control for the measurement regimes or crystal area and thickness aren’t used in the method. Results uncertainty due to possible variations of the major elements content is evaluated. The method is tested on the real sample of biotite monofraction from granite. The method application frames and possibilities of their expansion when electron probe X-ray microanalysis is combined are discussed.

Keywords: XRF, single crystal of mineral, trace elements, quantification