INVESTIGATION OF TWO SLAG SAMPLES USING k_0 NEUTRON ACTIVATION ANALYSIS THROUGH DIFFERENT STANDARDIZATION METHODS

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Instrumental neutron activation analysis was used to determine concentrations of several major and trace elements in two slag samples. One slag supplied by one of Steel factory and the other one by an Aluminum factory of Egypt. The aim of the present work is to study the accuracy and precision of Internal Comparator k_0 and external comparator k_0 methods in industrial application. The two slag samples together with an international reference material Soil-7 and two thin gold foils samples (one bare and the other covered with cadmium) were irradiated at the core of the Second Research Egyptian Reactor ET-RR-2 of about $13 \cdot 10^{13} \mathrm{n/(cm^2 \cdot s)}$. The elemental concentration of ^{46}Sc, ^{51}Cr, ^{60}Co, ^{65}Zn, ^{74}As, ^{82}Br, ^{85}Sr, ^{86}Zr, ^{110m}Ag, ^{122}Sb, ^{134}Cs, ^{131}Ba, ^{140}La, ^{141}Ce, ^{147}Nd, ^{153}Sm, ^{152}Eu, ^{153}Gd, ^{166}Ho, ^{169}Yb, ^{175}Hf, ^{182}Ta, ^{198}Au and ^{233}Pa (^{232}Th-series) were calculated.

Keywords: iron slag, aluminum slag, neutron activation, environmental pollutions, external comparator, internal comparator.