

Determination of the minimum sample mass of U_3Si_2 to be used as candidate reference material for chemical analyses of total Uranium and total Silicide

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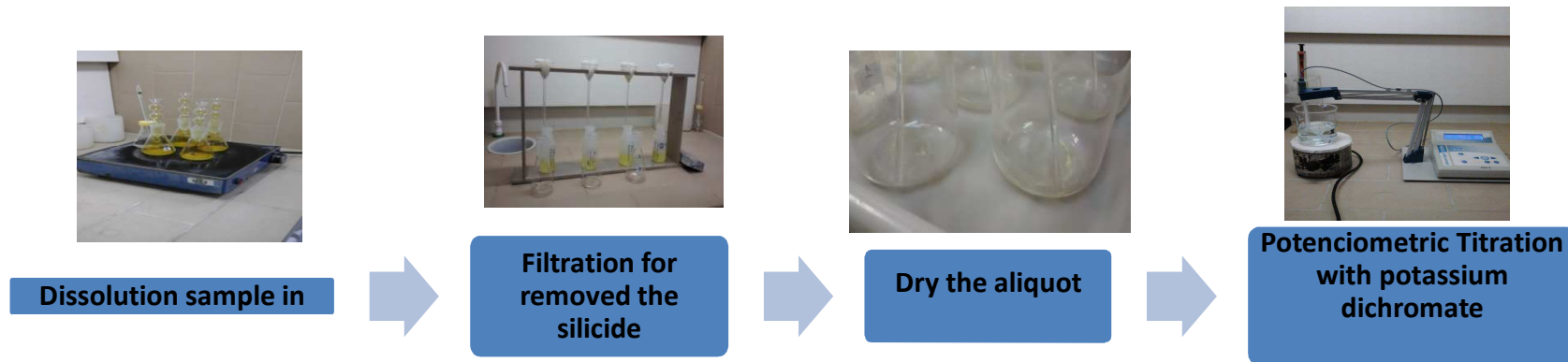
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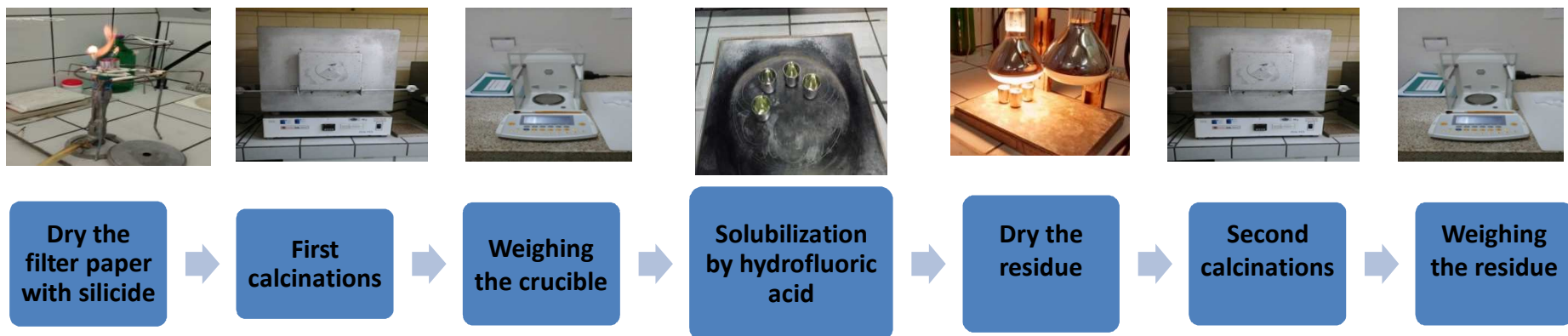
Objectives and Methodology

The objective is perform a preliminary test with three mass sub samples with 0.5, 0.8 and 1.2g of U_3Si_2 to elucidate minimum sample size to be used for repeatable candidate reference material here prepared.

Determination of the total U by Potentiometric Titration method Davies & Gray



Determination of the total Si for method Gravimetric



Summary of Results

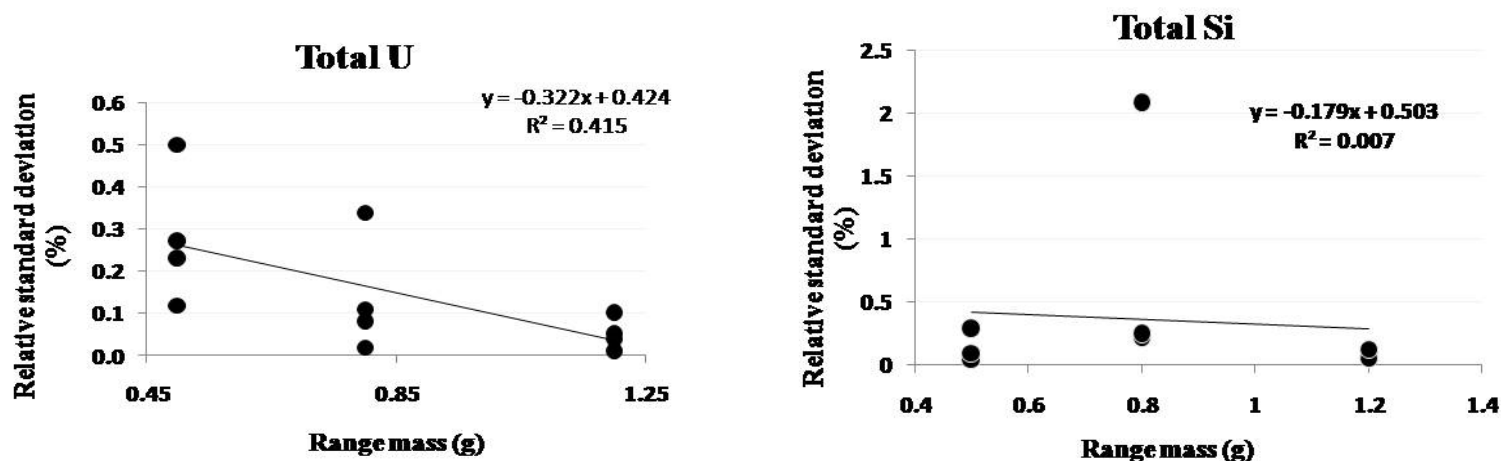


FIG. 1. STANDARD DEVIATION IN RELATIVE WEIGHT FUNCTION FOR THE STUDY OF HOMOGENEITY IN THE VIAL TOTAL U DAVIES & GRAY TEST AND TOTAL SI ALL BY GRAVIMETRIC ASSAY

It was observed that the average value of the deviation was equal to $0.16 \pm 0.04\%$ (total U) representing a variation of 0.05 to 0.28% over the weight, and $0.35 \pm 0.7\%$ (total Si), ranging from 0.08 to 0.84%.

For the masses 0.5g, 0.8 and 1.2 g was found that the average value of the elements did not show statistically significant differences, however the individual results for the standard deviation higher dispersion. Thus 1.2 g mass selected as the minimum weight of the sample, since individual values are mutually compatible.

