Contribution ID: **184** Type: **Oral Presentation**

Overview of NAA method applied at Es-Salam research reactor

Thursday 19 November 2015 14:20 (20 minutes)

At Es-Salam research reactor, the instrumental neutron activation analysis was used since 1993 as the first technique in our laboratory. In spite of the simplicity of the concept of this technique, the capability of analysis depends of the determination of elements in reference standard. Due to the limitations of INAA method, we have conducted our objective towards the well-known advantages of the k0-NAA method. A project for introduction of this method was conceived in 2002 and implemented two years later. The k0-NAA procedure established in our laboratory has been regarded as a reliable standardization method of NAA and as available for practical applications.

Examples of such samples, within a selected group of disciplines are milk, milk formulae, salt, plants and seeds (nutrition), hair and blood of human (clinical investigation), cigarette tobacco (environmental and health related fields) and iron ores and clays (exploration and mining). In addition, the development of other analytical techniques based on the neutron activation is also achievement during 2005 such as the cyclic delayed neutron counting technique and the application of RNAA to the proportioning of iodine in food salt. The NAA laboratory work to make an effort to connect the unique features of NAA activities in a strategic way for the national goals by its accreditation. Our experience on the inter-laboratory exercises undertaking in the frame work of RAF4020, RAF4022 and RAF1005 projects for the evaluation of the analytical laboratory competency was also discussed.

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Session Classification: Utilization and Application

Track Classification: Utilization and Applications of Research Reactors