

k_0 -NAA PAST THE TURN OF THE CENTURY: PROBLEMS, CONCEPTS, INSIGHTS, PROSPECTS

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For the k_0 -standardization of NAA, the transition to the 21st century was marked by two important events. In 2000: MARC-V (Kona, HI, USA), which offered the opportunity to present a retrospective lecture on "The standardization of standardless NAA"; and, in 2001: the 3rd International k_0 Users Workshop (Bruges, Belgium), providing a survey of recent and ongoing projects related to both fundamental developments and applications.

These two turn-of-the-century happenings paved the way to gain a broader and deeper insight in the past, present and future developments of the k_0 -standardization, thus allowing to make in the present paper an evaluation of the path that the k_0 -method is expected to follow in the years to come.

Topics highlighted are:

1. the elimination of a few but important inaccuracies observed (as a feedback from actual analysis results) in the nuclear data library;
2. the refinement to be made in the calibration of the irradiation facility, especially in the characterisation of the epithermal neutron flux shape factor alpha;
3. the continuation of the development and use of the k_0 -concept in prompt-gamma neutron activation analysis;
4. the increased communication and interaction of (k_0) NAA-users via the re-born k_0 -website;
5. the dissemination (via IRMM, EC, Geel, Belgium) and use of the recently issued SMELS materials, synthetic multi-element standards for QC/QA and validation of k_0 -NAA after its implementation in a laboratory; and
6. the further growth of the use of the k_0 -calibration in NAA, with emphasis on the developing countries.

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