

**GAMMA SPECTROSCOPY OPEN SOURCE SOFTWARE
FOR NEUTRON ACTIVATION ANALYSIS**

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Neutron Activation Analysis (NAA) is an well established, analytical, multi-element technique based on the irradiation of a sample in a powerful neutron source, e.g., a nuclear reactor, and subsequent measurement of the induced radioactivity. The measurement is done by gamma spectrometric analysis, using parameters such as counting geometry and statistics, the decay-time and live-time corrections, the background radiation.

In this paper we present the initial prototype of a free/open source, multi-platform software to perform Gamma Spectroscopy Analysis for Neutron Activation Analysis being developed in the Neutron Activation Analysis Laboratory of the IPEN/CNEN Nuclear Research Reactor IEA-R1m. The software is being developed using Python as the main language, Trolltech Qt as the main graphic library and some extensions for scientific graphics plotting. **Python** is a dynamic object-oriented programming language that can be used for many kinds of software development. It offers strong support for integration with other languages and tools, comes with extensive standard libraries. Using the **pyqt** tool, we'll be able to use the graphics C++ library **Qt** in Python. **Qt** is a complete C++ application framework, including a class library and tools for cross-platform development.

The ultimate goal of this project is to delivery a system that enable researchers to manage their NAA projects in a distributed, safely and practical manner, with workflow capabilities together with a fine grained access control model.

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