**Internship - Support of the new Neutron Science Facility using Deuterium-Deuterium (DD) and Deuterium-Tritium (DT) neutron generators**

**Duration of Internship:**

9-12 months; Start Q2-Q3 2024

Organizational Setting

Department: Department of Nuclear Sciences and Applications

Division: Division of Physical and Chemical Sciences

Section: Physics Section

Unit: Nuclear Science and Instrumentation Laboratory at Seibersdorf

Main Purpose

Participate in the commissioning and development of the utilization programme of a new Neutron Science Facility based on DD and DT neutron generators, as well as to the development of neutron experiments and training activities on neutron activation analysis, delayed neutron counting, radiotracer production and neutron radiography.

Tasks / Key Results Expected

According to their background and interest, the intern will be involved in the following tasks under the supervision of the laboratory head:

* Neutronics calculations related to the neutron generators implementation and their applications using full Monte Carlo tools like MCNP and PHITS,
* Commissioning and utilization of various neutron and photon instrumentation set ups,
* Commissioning and demonstration of various neutron applications such as neutron activation analysis, delayed neutron counting, radiotracer production and neutron radiography.

Key results will include the commissioning and effective utilization of the neutron facility, the development of its applications, as well as the establishment of experimental protocols and training material for each of the applications.

Knowledge, Skills and Abilities

* Nuclear science and technology
* Nuclear instrumentation
* Modelling based on Monte Carlo techniques
* Basic programming skills in python, R or C++

Qualifications and Experience

* University degree in nuclear physics, nuclear engineering or related fields

Potential Institutions/Organizations to attract potential applicants

* National Laboratories
* Research Institutes
* Universities

Internships

The IAEA accepts a limited number of interns each year. The internships are awarded to persons studying towards a university degree or who have recently received a degree (see Internship web pages for further details).

The purpose of the programme is:

* To provide interns with the opportunity to gain practical work experience in line with their studies or interests, and expose them to the work of the IAEA and the United National as a whole;
* To benefit the IAEA's programmes through the assistance of qualified students specialized in various professional fields.
* The duration of an internship is normally not less than three months and not more than one year.

Applicant Eligibility

* Candidates must be a minimum of 20 years of age and have completed at least three years of full-time studies at a university or equivalent institution towards the completion of a first degree.
* Candidates may apply up to one year after the completion of a bachelor's, master's or doctorate degree.
* Candidates must not have previously participated in the IAEA's internship programme.
* Excellent written and spoken English essential; fluency in any other IAEA official language (Arabic, Chinese, French, Russian) an asset.
* Candidates must attach two signed letters of recommendation to their application.