**Internship - Application of New Radiation Detectors in UAV- & Ground-Based Technologies for Radiological Mapping**

Duration of Internship:

9-12 months, 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 laboratory activities related to the implementation of new detectors and electronics into ground-based and UAV-based technologies for radiation mapping. Test and evaluate the performance of existing and newly acquired radiation detectors and field nuclear instrumentation. Participate in the preparation of field experiments and documentation for training activities.

Tasks / Key Results Expected

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

* Commissioning and utilization of various portable radiation detection technologies
* Development of detector calibration methodology
* Characterisation of detector response for filed-based applications
* Testing of detection and spectroscopy parameters of various electronics readout components and data acquisition systems
* Data processing and data analysis
* Development of experiments and practical exercises for training on use of UAV for radiological mapping.

The results will be put into operation for the effective use of detection systems and nuclear instrumentation and the development of specific applications as well as implemented into experimental protocols and training materials for selected applications.

Knowledge, Skills and Abilities

* Nuclear science and technology – Nuclear Instrumentation
* Radiation detectors (scintillation) and related instrumentation
* Basic programming skills in using python, R or C++

Qualifications and Experience

* University degree in nuclear physics, nuclear engineering, or similar 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.