**Internship Title**

Internship – Development of noble gas analytical methods by mass spectrometry

**Target Start of Internship**

Starting March 2024 or later; duration 12 months

**Organizational Setting**

Department: Nuclear Sciences and Applications

Division: Division of Physical and Chemical Sciences

Section: Isotope Hydrology Section

Unit: Isotope Hydrology Laboratory

**Main Purpose**

Under the direction and supervision of a Professional Staff member, the primary purpose of the internship is to assist the Isotope Hydrology Laboratory in advancing the development of noble gas analysis through mass spectrometric methods. The intern will also contribute towards developing Atom Trap Trace Analysis (ATTA) to measure Kr-81 and Ar-39. These activities are an integral part of the programmatic activities of the Isotope Hydrology Section and a crucial component of the GloWAL Network.

**Tasks / Key Results Expected**

* Assist with the ongoing work towards upgrading the noble gas mass spectrometric instruments and methods for the measurement of noble gas isotopes for groundwater age dating purposes.
* Assist in the preparatory steps towards developing and installing an Atom Trap Trace Analysis (ATTA) system for measuring krypton-81 and argon-39 in water samples.
* Assist in enhancing the handling and processing of noble gas isotope data.
* Contribute to preparing and reviewing Standard Operating Procedures (SOP) for various analytical methods.

**Knowledge, Skills and Abilities**

* Previous experience in the use/development of mass spectrometry and related analytical methods in environmental sciences.
* Experience with high-pressure vacuum lines.
* Analytical thinking and very good communication skills.
* Knowledge of isotope hydrology is desirable.

**Qualifications and Experience**

* University degree in Physics, Analytical Chemistry, Engineering, or related fields.
* Previous proven experience in using/developing mass spectrometric methods.
* Good oral and written command of English.

**Potential Institutions/Organizations that can be reach out to in order to attract potential applicants**

* National Laboratories

**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.