

Job Description for Professional Posts

Reference: NA2025/02

Position and Grade:	Associate Analytical Chemist, Stable Isotopes, P2
Organizational Unit:	Marine Environmental Studies Laboratory Division of IAEA Marine Environment Laboratories
Duty Station:	Monaco
Type/Duration of Appointment:	FT – JPO, 1 year

Organizational Setting

The Department of Nuclear Sciences and Applications implements the IAEA's Major Programme 2, "Nuclear Techniques for Development and Environmental Protection". This Major Programme comprises individual programmes on food and agriculture, human health, water resources, environment and radiation technologies. These programmes are supported by laboratories in Seibersdorf, Monaco and Vienna. The Major Programme's objective is to enhance the capacity of Member States to meet basic human needs and to assess and manage the marine and terrestrial environments through the use of nuclear and isotopic techniques in sustainable development programmes.

The Division of IAEA Marine Environment Laboratories (NAML) consists of three laboratories, which are located in Monaco. The Division supports Member States in enhancing their capacity to use nuclear and isotopic techniques to understand marine and atmospheric environmental processes and dynamics, and to identify and address environmental problems caused by radioactive and non-radioactive pollutants and climate change.

The Marine Environmental Studies Laboratory (MESL) is the analytical support centre for isotopic and elemental analysis of trace elements, organic contaminants and long-lived radionuclides in the marine environment. It provides reference materials, recommends procedures and carries out proficiency tests and interlaboratory comparisons for quality assurance programmes for the determination of non-nuclear contaminants. It implements marine monitoring programmes in collaboration with regional laboratories and provides training in analytical techniques and metrology in chemistry.

Main Purpose

Reporting to the Laboratory Head and Professional staff, the Associate Analytical Chemist, Stable Isotopes conducts laboratory tests related to on-going research and development work on using Carbon and Nitrogen stable isotopes to assess organic matter cycling in the marine environment, fingerprinting oil contaminant sources and investigating blue carbon stocks and climate change in the coastal marine environment. The incumbent will contribute to the development and optimisation of analytical methods for stable light isotopes analysis (C and N) and participates in studies in view of assisting Member States understanding climate change and pollution processes in vulnerable coastal marine ecosystems. He/she will be further supporting overall laboratory operations and participate in the training of fellows.

Role

The Associate Analytical Chemist, Stable Isotopes is a laboratory analyst, carrying out sample preparation and analysis of carbon and nitrogen stable isotopes using Isotope Ratio Mass Spectrometry

(IRMS); a technical specialist optimising chemical procedures and methods to enable accurate and precise measurements of light stable isotopes in organic compounds and environmental samples; and an internal quality control analyst to assist and maintain the quality management system on analyses of carbon and nitrogen stable isotopes using the GC-EA-IRMS.

Partnerships

The Associate Analytical Chemist, Stable Isotopes has frequent contact with Professionals and General Service staff within the section as well as throughout the other sections for day-to-day operations including on-going experimental work. He/She also has consistent contact with fellows and associates in organizing their research work, in relation to the analysis of stable isotopes of carbon and nitrogen, administering training material, and providing technical assistance as required. The incumbent has external contact with local suppliers in attaining equipment/material for the laboratory and interacts with laboratories around the world on issues related to the optimisation of analytical methods for stable isotopes analysis. He/she will also collaborate with the Technical Cooperation (TC) Department of the IAEA TC Programme.

Functions / Key Results Expected

- Carry out analysis of carbon and nitrogen stable isotopes using Isotope Ratio Mass Spectrometry (IRMS) as requested in the regular programme and extra budgetary projects of MESL.
- Development and optimisation of methods for the analysis of light stable isotopes and evaluation of the results, to understand climate change, seafood provenance and pollution processes.
- Apply stable isotopes techniques in fingerprinting pollution sources
- Technical support of the training process of fellows and other trainees in the laboratory, on the analysis of carbon and nitrogen stable isotopes in environmental samples.
- Prepare and revise standard operating procedures (SOPs) and collaborate in the establishment and maintenance of the laboratory's quality system.
- Maintenance of general laboratory facilities according to the ISO 17025 standard (inventory, sample registration, sample handing, training records etc.).
- Writing up of results into reports and scientific peer reviewed publications of high standard.

Competencies and Expertise (do not revise or edit)

Core Competencies		
Competence	Occupational Role	Behavioural Indicator
Communication	Individual Contributor	Communicates orally and in writing in a clear, concise and impartial manner. Takes time to listen and understand the perspective of others and proposes solutions.
Achieving Results	Individual Contributor	Takes initiative in defining realistic outputs and clarifying roles, responsibilities and expected results in the context of the Department/Division's programme. Evaluates his/her results realistically, drawing conclusions from lessons learned.
Teamwork	Individual Contributor	Actively contributes to achieving team results. Supports team decisions.

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Planning and Organizing	Individual Contributor	Plans and organizes his/her own work in support of achieving the team or Section's priorities. Takes into account potential changes and proposes contingency plans.
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Functional Competencies		
Competence	Occupational Role	Behavioural Indicator
Knowledge sharing and learning	Associate	Actively seeks opportunities to learn by formal and informal means; learns from others, adopting and sharing best practice.
Judgement/ decision making	Associate	Consults with supervisor/manager and makes decisions in full compliance with the Agency's regulations and rules.

Expertise	
Expertise	Description
Environmental Analytical Techniques	Good knowledge in analytical chemistry and environmental sciences.
Mass Spectrometry	Good practical knowledge of analytical techniques for the analysis of stable isotopes of carbon and nitrogen using Isotope Ratio Mass Spectrometry (IRMS), gas chromatography and elemental analyzer.
Scientific and Technical Publishing	Good presentation skills and ability to prepare reports, publications and training materials.
Data analysis	Basic knowledge on statistics.

Education, Experience and Language Skills

- University degree in chemistry, environmental sciences or a related scientific field with a demonstrated strong laboratory component in the field of carbon and nitrogen stable isotopes analysis and gas chromatography
- Minimum of two years of relevant professional experience in the field of analytical chemistry and stable isotopes
- Publications in this fields would be an advantage.
- Excellent oral and written command of English. Knowledge of other official IAEA languages (Arabic, Chinese, French, Russian and Spanish) is an asset. Working knowledge of French desirable.

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