

# Job Description for Professional Posts

**Reference:**NA2024/68

<b>Position and Grade:</b>	Associate Analytical Chemist, Isotope Techniques, P2
<b>Organizational Unit:</b>	Marine Environmental Studies Laboratory Division of IAEA Marine Environment Laboratories
<b>Duty Station:</b>	Monaco
<b>Type/Duration of Appointment:</b>	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 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 Unit Head and Professional staff, the Associate Analytical Chemist, Isotope Techniques conducts laboratory tests related to on-going research on the development of methodologies for the identification and monitoring of emerging pollutant and on the assessment of marine pollution processes, using isotopic techniques. The Associate Analytical Chemist, Isotope Techniques will contribute to the development and application of analytical methods for quantification and identification of microplastics, nanoparticles and other emerging inorganic contaminants, in view of assisting Members States laboratories implementing isotopic techniques for the identification, quantification and understanding of pollution processes in the marine environment. He/she will be further involved in the procurement for and maintenance of laboratory equipment, supporting overall operations in MESL and participated in the training of fellows.

## **Role**

The Associate Analytical Chemist, Isotope Techniques is a technical specialist on the development of analytical methodologies for quantification and identification of emerging contaminants (microplastics, nanoparticles and other emerging inorganic contaminants in environmental samples using HR ICP-MS, TQ ICP-MS and other analytical techniques, improving/revising the existing procedures for new applications. He/she will carry out the studies on the role of microplastics and nanomaterials as a major vector for the transportation of toxic trace elements in marine system. The Associate Analytical Chemist, Isotope Techniques is also responsible for overseeing laboratory activities in the area of environmental monitoring of inorganic emerging contaminants, as well as supervising fellows and trainees. He/she will also collaborate with the Technical Cooperation (TC) Department of the IAEA TC Programme on these topics.

## **Partnerships**

The Associate Analytical Chemist, Isotope Techniques has frequent contact with Professional 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, administering training material, and providing technical assistance as required. The Associate Analytical Chemist, Isotope Techniques has external contact with local suppliers in attaining equipment/material for the laboratory and interacts with laboratories around the world to support them in enhancing the implementation of determination of emerging pollutant in Member States Laboratories. He/she will also collaborate with the Technical Cooperation (TC) Department of the IAEA TC Programme on this topic.

## **Functions / Key Results Expected**

- Development and validation of methodologies for the quantification and identification of microplastics and nanomaterials in marine environmental samples e.g, seawater, marine biota, and sediments.
- Development and validation of methodologies for sample preparation of emerging contaminants in marine samples prior their ICP-MS quantification.
- Application of obtained results for pollution studies in contaminated regions. Comparative studies with other analytical techniques.
- Carry out the studies on the role of microplastics and nanomaterials as a major vector for the transportation of toxic trace elements in marine system.
- Evaluation of the results, to understand pollution processes for the preparation of technical reports and scientific manuscripts for publication.
- Training of Fellows and other trainees in NAEL/MESL on the determination of isotopic ratios for stable isotopes in marine environment samples.
- Drafting and revising of standard operating procedures (SOPs), reports and guidelines and collaborate in the establishment and maintenance of the laboratory's quality system.

**Competencies and Expertise (do not revise or edit)**

<b>Core Competencies</b>		
<b>Competence</b>	<b>Occupational Role</b>	<b>Behavioural Indicator</b>
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.
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.

<b>Functional Competencies</b>		
<b>Competence</b>	<b>Occupational Role</b>	<b>Behavioural Indicator</b>
Judgement/decision making	Associate	Consults with supervisor/manager and makes decisions in full compliance with the Agency's regulations and rules.
Partnership building	Associate	Develops and maintains partnerships needed for his/her work. Establishes and nurtures positive relations with partners and stakeholders.
Teamwork	Associate	Actively contributes to achieving team results. Supports team decisions.
Planning and Organizing	Associate	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.

<b>Expertise</b>	
<b>Expertise</b>	<b>Description</b>
Environment/Environmental Analytical Techniques	Experience in the field of mass spectrometry techniques and method development.
Information Technology/Data Analysis	Experience in marine monitoring, statistical experience and data treatments.
Publishing/Scientific and Technical Publishing	Good presentation skills and ability to prepare reports, publications and training materials.

## **Education, Experience and Language Skills**

- University degree in chemistry, environmental sciences or a related scientific field.
- Minimum of two years of relevant professional experience in the field of analytical chemistry.
- Publications in this field would be an advantage.
- Fluency in written and spoken English, with proven ability to write and edit reports as well as to make oral presentations.
- Working knowledge of French desirable. Knowledge of another IAEA official language (Arabic, Chinese, Russian or Spanish) an advantage.