

Job Description for Professional Posts

Reference: NA2024/04

Position and Grade: Associate Research Scientist, Marine Emerging Organic Contaminants, 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

As part of a team led by the Laboratory Head and Professional staff, the Associate Research Scientist, Emerging Organic Contaminants will contribute to the development and optimisation of analytical methods using isotopic techniques for monitoring contaminants of emerging concern in different environmental matrices, including microplastics/nanoplastics.

He/she will participate in studies to better monitor and assess the impacts of organic contaminants and micro/nanoplastics on ecosystem services in the context of ocean health and climate change. He/she will conduct analytical determinations related to regulated contaminants and those of emerging concern in the marine environment, including polyfluorinated compounds (PFAS), emerging halogenated flame retardants, plasticizers and other new contaminants recently added under the Stockholm Convention on persistent organic pollutants (POPs). He/She will conduct analytical work for the characterisation of micro/nanoplastic present in marine matrices.

Role

The Associate Research Scientist, Emerging Organic Contaminants is a laboratory analyst, carrying out sample preparation and analysis of organic and emerging contaminants; a technical specialist optimising analytical procedures and methods to enable accurate and precise measurements of organic contaminants in environmental samples and reference materials; and an internal quality control analyst to assist and maintain the quality management system for the analyses of emerging contaminants and characterisation of plastics using mass spectrometry (Pyrolysis-GC-MS, GC-MS/MS, LC-MS/MS).

Partnerships

The Associate Research Scientist, Emerging Organic Contaminants will work as part of a team in a multidisciplinary environment. He/she will work in the framework of international collaborations on the use of mass spectrometry (Pyrolysis-GC-MS, GC-MS/MS and LC-MS/MS) equipment to study the transfer of organic contaminants and micro/nanoplastics in ecosystems impacted under environmental/climate change scenarios. He/she will also assist developing certified reference materials and implementing research projects, such as Peaceful Use Initiatives (PUI), aimed at supporting NAML's subprogramme on solutions to support the sustainable management of coastal and marine ecosystems. He/she will also collaborate with the Technical Cooperation (TC) Department of the IAEA TC Programme on these topics.

Functions / Key Results Expected

- In close collaboration with the team, develop and optimize analytical methods for the detection and quantification of regulated and emerging organic contaminants, using Pyrolysis-GC-MS, GC-MS/MS and LC-MS/MS equipment.
- Carry out analysis of regulated and emerging contaminants using mass spectrometry as requested in the regular programme and extra budgetary projects of MESL
- Assist in the implementation of Quality System for the production of reference materials on organic contaminants.
- Evaluation of the results, to understand pollution processes for the preparation of technical reports and scientific manuscripts for publication.
- Provide training courses to fellows and other trainees in the laboratory, on the analysis of regulated and emerging organic contaminants using the Pyrolysis-GC-MS, GC-MS/MS and the LC-MS/MS equipment in environmental samples.
- Prepare and revise standard operating procedures (SOPs) and collaborate in the establishment and maintenance of the laboratory's quality system.

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

RESTRICTED

		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.

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	Experience and ability to conduct laboratory analyses using mass spectrometry
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 with a demonstrated knowledge in the field of analytical methodology, used for the determination of non-nuclear pollutants in marine environment.
- Minimum of two years of relevant professional experience in the field of liquid chromatography and mass spectrometry.
- Publications in the fields of mass spectrometry specialization would be 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.

RESTRICTED