



## Job Description

# Nuclear Instrumentation Specialist (spectrometry)(P2) - (2018/0265 (005876))

Organization NAPC-Nuclear Science and Instrumentation Laboratory

Primary Location Austria-Lower Austria-Seibersdorf-IAEA Laboratories in Seibersdorf

Posting Date 2018-04-19, 11:35:12 AM

Closing Date 2018-06-03, 11:59:00 PM

Duration in Months: 36

Contract Type: Fixed Term - Regular

Probation Period: 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 Physical and Chemical Sciences is responsible for assisting and advising Member States in research and development for the nuclear sciences, especially the physical and chemical sciences. Specifically, the Division provides support to Member States in the following fields: production of radioisotopes and radiolabelled products for applications in health care and industry; radiation source applications; research reactor utilization; applications of accelerators and nuclear instrumentation; nuclear and atomic data for applications; controlled nuclear fusion and isotope hydrology and geochemistry.

Additionally, the nuclear science activities carried out by the Nuclear Data Section and Physics Section in the Division of Physical and Chemical Sciences of the Department of Nuclear Sciences and Applications fall under Major Programme 1.

The Physics Section is responsible for planning and implementing activities in the areas of (i) effective utilization of research reactors, (ii) fostering relevant research and development and applications using particle accelerators and related instrumentation, and (iii) plasma physics and fusion, in order to enable Member States to avail themselves of the benefits of nuclear sciences and technologies. It operates the Nuclear Science and Instrumentation Laboratory, located at the Agency's Laboratories in Seibersdorf, which assists laboratories in Member States to improve the effective utilization of nuclear spectrometry and related instrumentation by providing technical advice, training, calibration services, assistance with the modification and development of nuclear instruments and with new applications of nuclear spectrometry techniques in various fields, including energy related applications, environmental monitoring, industry, and the study of cultural heritage objects.

## Main Purpose

As a member of a team led by the Group Leader of the nuclear spectrometry group, the Nuclear Instrumentation Specialist (NIS) contributes with scientific knowledge and experimental skills to the development and optimization of nuclear spectrometry techniques and methodologies for effective application in environmental pollution monitoring, human health, industry, agriculture and other fields. He provides also support to R&D projects and training, and technical backstopping support to Technical Cooperation (TC) projects.

## Role

The NIS plays several roles in the Nuclear Science and Instrumentation Laboratory: 1) provider of technical support and guidelines to users of nuclear spectrometry instrumentation in Member States' laboratories; 2) mentor for scientific visitors and trainees in the field of methodology and applications of nuclear spectrometry techniques including Quality Management System (QMS) procedures; 3) user of portable, laboratory and synchrotron based X-ray fluorescence analysis techniques and spectrometers and developer of relevant analytical methodologies and interdisciplinary applications.

## Functions / Key Results Expected

- As part of the mobile gamma spectrometry team, provide monitoring and mapping services to Member States.
- Serve as a resource person on X-ray fluorescence (XRF) spectrometers available in the NSIL (including portable, bench top and custom-made energy-dispersive XRF spectrometers performing either bulk or 2D/3D micro-analysis and imaging) and their applications to materials with interest in various sciences.
- Provide technical advice and guidelines on the effective use of XRF analysis and gamma spectrometry to Member States' laboratories.
- Contributes to the development of advanced analytical methodologies and interdisciplinary applications of X-ray Fluorescence (XRF) analysis and gamma spectrometry techniques and to the improvement and optimization of laboratory custom-made instruments.
- Write scientific papers in the field of XRF analysis.
- Provide training on methodology and interdisciplinary applications of X-ray fluorescence analysis techniques.
- Provide training on methodology and practice of mobile gamma spectrometry.
- Contribute expertise to the development of computer-based teaching materials in support of training in nuclear spectrometry.
- Contribute scientific input and organize technical meetings on advances in and applications of nuclear spectrometry.
- Provide quality management support to the NSIL. Implement quality assurance procedures and maintain records as well as corrective and preventive actions.
- Serve as a mentor of scientific visitors and IAEA fellows in nuclear instrumentation techniques.

## Competencies and Expertise

### Core Competencies

Name	Definition
Planning and Organizing	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.
Communication	Communicates orally and in writing in a clear, concise and impartial manner. Takes time to listen to and understand the perspectives of others and proposes solutions.
Achieving Results	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	Actively contributes to achieving team results. Supports team decisions.

### Functional Competencies

Name	Definition
Commitment to continuous process improvement	Identifies opportunities for process, system and structural improvement as well as improving current practices, increasing effectiveness and achieving efficiency gains. Actively supports the application of sound quality management standards and process improvement.

Partnership building	Develops and maintains partnerships needed for his/her work. Establishes and nurtures positive relations with partners and stakeholders.
Technical/scientific credibility	Acquires and applies new skills to remain up to date in his/her area of expertise. Reliably applies knowledge of basic technical/scientific methods and concepts.

**Required Expertise**

Function	Name	Expertise Description
Physics	Nuclear Physics	Experience in nuclear spectrometry techniques

**Asset Expertise**

Function	Name	Expertise Description
Physics	Nuclear Instrumentation	Experience in neutron instrumentation

## Qualifications, Experience and Language skills

- University Degree - Nuclear Physics or closely related science. An advanced degree is an asset.
- Minimum of two years' working experience in nuclear spectrometry
- Additional work experience in nuclear spectrometry techniques is an asset.
- Some teaching experience in methodology and applications of nuclear spectrometry.
- Experience with quality management systems used in analytical laboratories or centres.
- Experience as part of a team delivering projects in the relevant area.
- Working knowledge of French or Spanish desirable.
- Excellent oral and written command of English. Knowledge of other official IAEA languages (Arabic, Chinese, English, French, Russian and Spanish) is an asset.

## Remuneration

The IAEA offers an attractive remuneration package including a tax-free annual net base salary starting at **US \$46472** (subject to mandatory deductions for pension contributions and health insurance), a variable [post adjustment](#) which currently amounts to **US \$ 24491\***, dependency benefits, [rental subsidy](#), [education grant](#), [relocation](#) and [repatriation expenses](#); 6 weeks' annual vacation, [home leave](#), [pension plan](#) and [health insurance](#)

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**Applications from qualified women and candidates from developing countries are encouraged**

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