



**COMBINE
INNOVATION
WITH EXPERTISE!**

SMART PLATFORM

Measurement and Analysis Service for Radioactivity
and Trace Elements



IMT Atlantique
Bretagne-Pays de la Loire
École Mines-Télécom



What we can do

SMART has a complete range of equipment adapted to the pre-treatment of your solid or liquid samples to search for specific natural or artificial radionuclides.



For radiation detection, SMART's range of high-performance measurement equipment is among the most complete ranges available: gamma/X spectrometry chains, alpha spectrometry chains, liquid scintillation counters, and proportional gas meters. It also has at its disposal an ICP-MS and a high-resolution ICP-MS for the analysis of metals (uranium, thorium, etc.).

The Measurement and Analysis Service for

Radioactivity and Trace Elements (Service de Mesure et d'Analyse de la Radioactivité et des éléments Traces, known as SMART) was created in 1994. It originally began within a joint research unit (SUBATECH - UMR 6457) which includes IMT Atlantique Bretagne-Pays de la Loire (CNRS-IN2P3) and the University of Nantes, with the support of Armines for the contractual management of research.

Thanks to its experienced team of about twenty people, SMART offers a complete range of services, including the following: site sampling, analyses and expertise in the field of radioactivity measurement. SMART has been recognized by **COFRAC for its a high level of competence since 1998.**

What we can offer to meet your needs



SMART quantifies a large number of radionuclides at very low detection levels:

- › Natural (^{234}Th , ^{210}Pb , ^{214}Pb , ^{228}Ac , ^{212}Pb , ^{235}U ...) and artificial (^{60}Co , ^{137}Cs / ^{137m}Ba , ^{131}I ...) gamma emitters (γ).
- › X-ray emitters: ^{99}Mo , ^{59}Ni
- › Alpha emitters(α) : isotopes of uranium, plutonium, americium, curium, polonium
- › Beta Emitters (β) : TOL, ^3H , ^{14}C , ^{63}Ni , ^{55}Fe , ^{36}Cl , ^{90}Sr , ^{151}Sm , ^{41}Ca , ^{241}Pu , ^{99}Tc
- › Gross alpha activity (α) and gross beta activity (β)

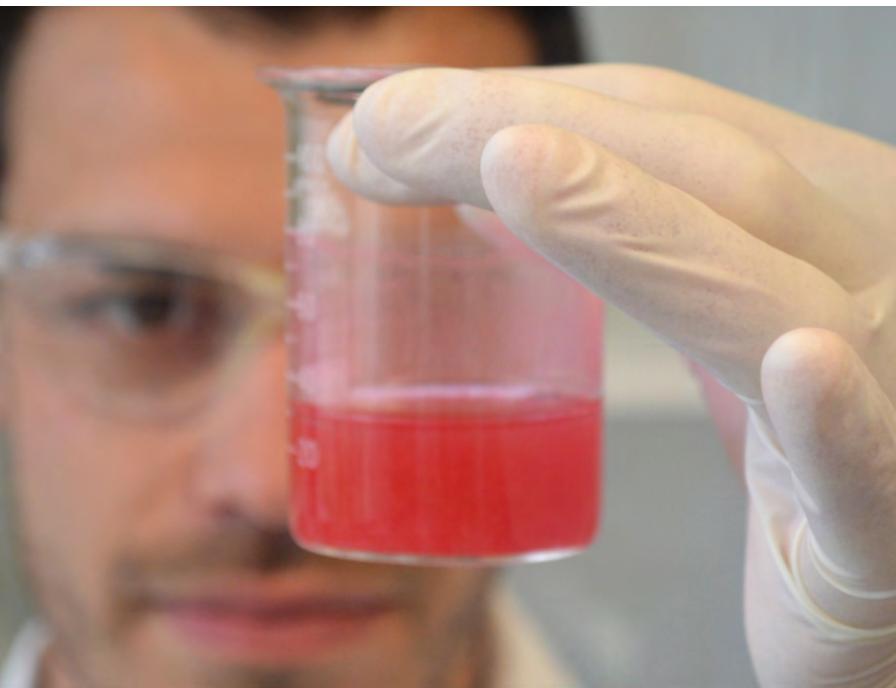


SMART is able to analyze these elements in a wide range of samples:

- › Water
- › Effluents
- › Bioindicators
- › Soil / Sediment
- › Aerosol filters / Scrubbers
- › Industrial products (oils, metals, concrete, etc.)
- › Waste from landfill sites
- › Foodstuffs
- › Others (on request)

SMART accompanies its clients throughout all the steps, from the sampling phase through the interpretation of the results.

Our areas of expertise



SMART: Right there with you, on site

Sampling and external expertise

The SMART service has a team of samplers, equipped with suitable equipment, to carry out your sampling and expert assessments on site (initial status, periodic monitoring).

- › Samples for radioecological study
- › Samples for environmental monitoring
- › Mapping on industrial sites
- › Waste characterization on Technical Landfill Site



› Environmental monitoring

Impact study, environmental monitoring, radioecological study.

For CLI, associations, design offices, nuclear facilities, regulatory authorities (ASN, DREAL), municipal authorities, etc.

› Effluent and smear analysis

Release controls, source controls, contamination estimation.

For health care facilities (hospitals), research institutions, industrialists, etc.

› Waste analysis / dismantling

Industrial dies.

For the nuclear industry, technical engineering departments, engineering consultancy firms, etc.

› Radiological Risk Mapping and Assessment

For the nuclear industry, engineering departments, engineering consultancy firms, mining operators, landfills, etc.

› Analysis of biological matrices

Drinking water, food

For analysis laboratories, Regional health agency (French ARS), municipal authorities, etc.

Our partners

- › SMART is part of the **Becquerel network**. This network of 7 analytical platforms allows you to benefit from all the means and expertise available within the **CNRS institute** to provide a global and integrated response to any problem related to radioactivity.
- › In collaboration with SMART, the Radiochemistry group of the SUBATECH laboratory develops applied research activities in fields related to **nuclear waste storage, radioecology and radionuclides used in nuclear medicine**.
- › To give you a complete offer (radiological and chemical), SMART also partners with **chemistry laboratories**:
 - . Inovalys
 - . Eurofins Environmental Expertise

Our accreditations and stamps of approval

SMART has been accredited by **COFRAC** since 1998, according to the NF EN ISO 17025 (Accreditation n°1-0910) reference for technical accreditation guides:

LAB GTA 35: **Analysis of radionuclides in the environment, in products of animal origin, and in foodstuffs intended for humans or animals**; LAB GTA 29: **Water sampling for radionuclide analysis**.

The department is committed to a process of continuous improvement and a quality assurance approach, guaranteeing the accuracy and reliability of its analytical results. This involves in particular:

- > the implementation of and compliance with standardized methods,
- > the choice of high-performance equipment that is regularly inspected,
- > the involvement of qualified personnel who receive continuous training to guarantee their skills.

Recognized at the national level, SMART has **40 of the 46 existing approvals** issued by the **French Nuclear Safety Authority (ASN)** to provide results that meet the requirements of the French National Network for Environmental Radioactivity Measurements (RNM = Réseau National de Mesure de Radioactivité dans l'environnement.)

The Ministry of Health authorizes the laboratory to carry out radiological measurements for water intended for human consumption.

Finally, in order to guarantee the accuracy and quality of its results, SMART participates in many Inter-Laboratory tests (IRSN, LNHB, CETAMA, etc.).

Testimonials

Due to good feedback over the past 3 years, I asked the laboratory again last April to take three samples and analyze them in parallel with the control carried out by our own laboratory in order to compare and validate the monitoring we carry out.

Alex ALLAIRE,
*Site Manager - Grand Ouest Territory
ORANO Mines*

We have been working with SMART since 1999, and it is one of the few laboratories that have received the large number of accreditations required by the ASN.

Alain ANDRÉ,
Environmental Project Manager - ANDRA

[Discover the platforms](#)



Contact us:

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