



Metrology for the harmonisation of measurements of environmental pollutants in Europe

For its ultimate success, the zero-pollution ambition of the European Green Deal requires highly sensitive and state-of-the-art detection techniques to determine ultra-low amounts of pollutants in the environment. Mass spectrometry has become a key method for the determination of non-radioactive polluting elements, and is also of increasing importance for the detection long-lived radionuclides. This project will bridge the gap between the radiometric techniques and mass spectrometry by comparing and linking both techniques, thus significantly improving measurement uncertainties and detection limits. As an important part of achieving this aim, this project will develop reference materials, resulting in SI-traceable measurement procedures tracking the sources of pollution by commonly available mass spectrometers.

The MetroPOEM Project Consortium has 22 Partners in 14 countries. HZDR's Department of Accelerator Mass Spectrometry and Isotope Research contributes to the project with its expertise in the detection of rare radionuclides in the environment using the supreme isotopic abundance sensitivity of IBC's DREAMS facility and the soon to be commissioned new accelerator mass spectrometry (AMS) system HAMSTER. As part of the project we will work to push the isotopic abundance detection limits for ^{236}U , ^{237}Np , ^{239}Pu , ^{240}Pu , ^{241}Am , and ^{90}Sr to new limits.