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Low radioactivity measurements based on ICP-MS at Canfranc Underground laboratory.

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The sensitivity of rare event research experiments depends on the background signals and, therefore, a complete characterization of the radiopurity of materials is required. Due to its unique features, Inductively Coupled Plasma Mass Spectrometry (ICP-MS) has become in a reference technique for testing materials in low background experiment research, especially for quantification of those naturally occurred long-lived radioisotopes (40K, 232Th or 238U). In this talk, an overview of the new developments on material screening carried out in LSC ICP-MS facility will be discussed. Different analytical methodologies have been developed for ultra-trace quantification in different matrix types: NaI crystals, electroformed copper and its precursor solutions, molybdate-based crystals, among others.

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