Contribution ID: **102** Type: **Poster presentation**

Advancements in Low Z Materials: Comprehensive Characterization and Applications by the Mechanical and Materials Engineering Group at CERN

The Mechanical and Materials Engineering group of the Engineering Department at CERN has gained in the last decade important experience in the comprehensive characterization of low Z materials, offering valuable insights into their properties and field of application. We focus on elucidating the unique challenges associated with low Z materials, encompassing their processing, welding techniques, and fabrication methods. Our expertise covers advanced non-destructive testing (NDT) methods as part of quality control to ensure the integrity of the materials, such as Computed Tomography (CT), High-Resolution X-Ray Diffraction (HR-XRD) or specially adapted Scanning Electron Microscopy (SEM) techniques for the investigation of light materials. We are also equipped with Focused Ion Beam (FIB)-SEM and instrumented nanoindentation as destructive techniques used during the post-mortem evaluations of for example HiRadMat specimens, fixed targets or beam instrumentation devices. By leveraging our state-of-the-art facilities, we provide essential support for an advanced understanding and application of low Z materials in a wide variety of projects at CERN.

Primary author: Mrs PEREZ FONTENLA, Ana Teresa (CERN)

Co-authors: Dr SGOBBA, Stefano (CERN); Dr ATIEH, Said (CERN); SACRISTAN DE FRUTOS, Oscar (CERN); GUINCHARD, Michael (CERN)

Presenter: Mrs PEREZ FONTENLA, Ana Teresa (CERN)