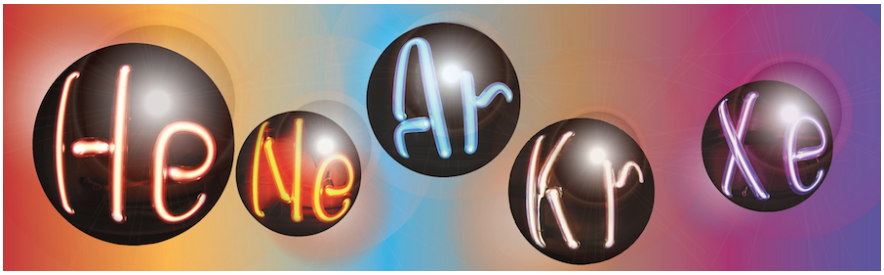

Contribution ID: **20** Type: **Oral Presentation**

VUV Reflectivity Measurements for Materials Relevant to Argon and Xenon Experiments

Friday, 24 October 2025 11:40 (20 minutes)

We present the development and initial results of an experimental setup designed to measure the vacuum ultraviolet (VUV) reflectivity of materials commonly used in argon and xenon-based detectors. The system consists of a monochromator coupled to a sealed black box chamber filled with ultra-pure argon gas. A photosensor mounted on a motorized rotation stage enables angular-resolved measurements, allowing the separation of specular and diffuse reflectivity components. Measurements focus on key VUV wavelengths: 128 nm and 175 nm, corresponding to the scintillation light of liquid argon and liquid xenon, respectively. Preliminary results are shown for materials such as aluminum and stainless steel, highlighting their diffuse reflectivity behavior and the relevance of these measurements for detector design, simulation, and optimization.

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Session Classification: Light/charge response in Noble Elements

Track Classification: Light/charge response in Noble Elements (gas, liquid, dual phase)