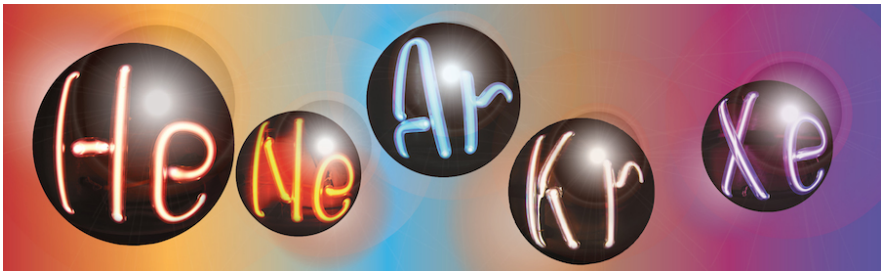

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Production of GEM-like structures for cryogenic applications, using laser-cutting techniques

Tuesday, 21 October 2025 22:00 (50 minutes)

A new concept of GEM-like structures was recently proposed. In this concept, a wavelength-shifting material is deposited inside the holes of GEM-like structures, which can improve the light collection efficiency in Ar-based dual-phase TPCs, solving problems related with the scalability of future dual-phase TPCs.

In this work, we report the newest developments on the production of GEM-like structures using laser-based techniques, namely the manufacture of a first batch of PMMA-based GEM-like structures. This process allows low-cost, reproducible fabrication of a high volume of such structures. In addition to being a low radioactive technique, we expect that it will allow the scaling up of the production of these structures at a reduced cost. First tests indicate good electrical stability, while the performance assessment is still ongoing.

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