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## Progress on THGEM-based photon detectors for COMPASS RICH-1

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New Cherenkov photon detectors are being developed for the upgrade of COMPASS RICH-1.

The detectors are based on the use of THGEMs, arranged in a multilayer architecture, where the first layer is coated with a CsI film, acting as a reflective photocathode.

The response of single layer THGEMs with various geometries and different conditions was extensively studied and photon detector prototypes were built, tested in laboratory and operated during test beam runs.

Efficient detection of Cherenkov photons has been obtained, with typical gains of 100,000 and time resolution better than 10 ns.

The motivations for the COMPASS RICH-1 upgrade and the status of the R&D project will be presented. The main challenges related to the construction of large area THGEM-based photon detectors and their use on RICH counters will be discussed.

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