

Abstract Submitted
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Radiation Hard Active Media R&D for CMS Hadron Endcap Calorimetry EMRAH TIRAS, University of Iowa, CMS-HCAL COLLABORATION — The High Luminosity LHC era imposes unprecedented radiation conditions on the CMS detectors targeting a factor of 5-10 higher than the LHC design luminosity. The CMS detectors will need to be upgraded in order to withstand these conditions yet maintain/improve the physics measurement capabilities. One of the upgrade options is reconstructing the CMS Endcap Calorimeters with a shashlik design electromagnetic section and replacing active media of the hadronic section with radiation-hard scintillation materials. In this context, we have studied various radiation-hard materials such as Polyethylene Naphthalate (PEN), Polyethylene Terephthalate (PET), HEM and quartz plates coated with various organic materials such as p-Terphenyl (pTp), Gallium doped Zinc Oxide (ZnO:Ga) and Anthracene. Here we discuss the related test beam activities, laboratory measurements and recent developments.

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