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Progresses of Inorganic Scintillators for Future HEP Calorimeters

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Future HEP calorimeters at the energy and intensity frontiers present stringent challenges to inorganic scintillators in radiation tolerance, ultrafast time response and low cost. We will report recent progresses in radiation hard, ultrafast, and cost-effective inorganic scintillators. Examples are LYSO:Ce crystals and LuAG:Ce ceramics for an ultracompact, radiation resistant shashlik sampling calorimeter RADiCAL, BaF_2:Y crystals and Lu_2O_3:Yb ceramics for time of flight as well as Mu2e-II ultrafast BaF_2:Y calorimeter, and novel high density glasses, such as ABS, AFO and DSB, for a homogeneous hadron calorimeter (HHCAL) concept for CalVision. Applications in Gigahertz hard X-ray imaging and Multi-Probe Radiography will also be discussed.

Early Career

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