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## P2.12: The R&D of The Glass Scintillator for Nuclear Detection

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Scintillation materials can convert high-energy rays into visible light. Generally, solid scintillator can be divided into crystal scintillator, plastic scintillator, glass scintillator and ceramic scintillator. Compared with crystal scintillator, the glass scintillator has many advantages, such as a simple preparation process, low cost and continuously adjustable components. Therefore, glass scintillator has long been conceived for application in the nuclear detection such as hadron calorimeters, the HCAL of CEPC. In 2021, the researchers in the Institute of High Energy Physics (IHEP) have set up the Large Area Glass Scintillator Collaboration (GS group) to study the new glass scintillator with high density and high light yield. Currently, a series of high density and high yield scintillation glasses have been successfully developed. The maximum density of the glass can exceed  $6.9 \text{ g/cm}^3$ . And the maximum light yield can reach up to 3400 ph/MeV. Moreover,  $\text{Ce}^{3+}$ -doped borosilicate glass can balance the targets of high density and high light yield. In addition, the glasses can achieve neutron/gamma dual detection due to the presence of Li, B and Gd elements.

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