

R&D on the fast GAGG for LHCb upgrade II

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The most important task in current particle physics is to precisely test the standard model of particle physics and search for new physics beyond the standard model. With the expansion of experimental exploration fields in new physics and increasing demands for exploration precision, detection technology and experimental methods are constantly facing new challenges. In order to fully utilize the opportunities provided by high-luminosity large hadron colliders for heavy flavor physics in the next decade or so, LHCb experiment is planning a comprehensive upgrade of detectors to cope with challenges brought about by high luminosity operation such as high event pile-up, radiation resistance etc., among which upgrading electromagnetic calorimeters is crucially important for enhancing detection capabilities of new physics. GAGG crystals have excellent scintillator dynamic characteristics, high light yield and radiation resistance that can improve time resolution effectively solve problems related to high event pile-up and enhance detector's radiation resistance performance. The report will introduce the R&D of fast GAGG for LHCb Upgrade II and give some latest results.

Presenter: 肖, 雄 (中国电子科技集团公司第二十六研究所)

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