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Status of Barrel Imaging Calorimeter in Korea for the Electron-Ion Collider

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The Electron-Ion Collider (EIC) is a next-generation particle accelerator facility designed to probe the fundamental structure of matter such as the origins of nucleon mass, spin, and the dynamic behavior of quarks and gluons within nucleon and nucleus. As the electromagnetic calorimeter in the barrel region, the Barrel Imaging Calorimeter (BIC) is tasked with precise energy measurements of electrons and photons as well as efficient separation of these particles from background pions. The BIC integrates Pb/SciFi sampling layers and AstroPix silicon pixel sensors for three-dimensional shower imaging. The Korean group has actively contributed through silicon chip testing, module assembly, prototype development, beam test, readout system design, and detailed simulations. This presentation highlights the recent progress and plans for the R&D of the Barrel Imaging Calorimeter in Korea.

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