

In-house Development of crystal assemblies at CERN (DECRYCE)

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Bent crystals have become a well-established technology, utilized in diverse accelerator applications at CERN such as the crystal-assisted collimation system in the LHC and loss reduction during slow extraction from SPS using the shadowing technique. Future plans involve employing bent crystals as a key component to measure the electric and magnetic dipole momentum of short-lived particles in a double-crystal experiment within the LHC.

Recognizing the strategic significance of bent crystals in current and upcoming projects, in-house production has been deemed strategically beneficial.

Thus, the DECRYCE (DEvelopment of CRystals for Collimation and Beam Extraction) project was initiated. It aims to oversee the entire production chain, from the procurement of low-dislocation crystal wafers to cutting specific crystal strips aligned with the crystal lattice planes, designing the bender system, and validating and qualifying crystals using X-ray and particle beams.

This contribution will outline the project's progress status and the results achieved in its first year of activity with an outlook on the slow extraction applications.

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