MATTER AND TECHNOLOGIES

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SciFi detectors development at GSI

The upcoming FAIR facility at GSI will host the Super-FRS, a high-resolution in-flight fragment separator designed to deliver radioactive ion beams for a wide range of experiments in nuclear physics and astrophysics.

In this context, different Scintillating fiber-based trackers have been successfully developed. A production process for single layer fiber ribbons has been established. Scintillating fibers with square cross section are used to build ribbons with highest material budget homogeneity. The fiber ribbon is read out by one dimensional MPPC arrays coupled to custom developed readout electronics.
The development of this detector concept is so promising that it is currently applied for three detector types within the Early Science Program of FAIR, namely R3B heavy ion tracking detectors and SuperFRS-SciFi as well as the R3B Proton Arm Spectrometer based in a multilayer modular concept.
The first detector has already been commissioned and several prototypes have been tested proving the concept. By the end of 2026, the installation of nearly 14 Super-FRS-SciFi detectors along with the PAS is planned.

The current status and outlook of these three detector development lines will be presented.

Speed talk:

Normal speed talk selection

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