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Specification, design, production including quality check and preparation for high-power test of input power couplers for SRF 5-year plan (MEXT-ATD) at KEK by global collaboration for ILC Technology Network (ITN)

Tuesday 23 September 2025 14:30 (3 hours)

A five-year project (MEXT advanced Accelerator element Technology Development (MEXT-ATD)) funded by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) began at KEK in FY2023. The goal is to manufacture, construct and test a cryomodule (CM) that satisfies the ILC (International Linear Collider Project) specifications and conduct cooling tests. The MEXT-ATD program is closely related to the ILC Technology Network (ITN). Based on the KEK-DESY license agreement, a 3D model of E-XFEL power coupler was submitted from IJCLAB, and RF simulations of the power coupler were conducted by KEK and FNAL through the US-Japan science and technology cooperation. In KEK, simulations on static/dynamic heat load was also done. From FY2024, production of four sets of input power couplers began (another four sets to be produced in FY2025). At the same time, quality checks were conducted on brazing, TiN coating, and copper plating. The production of four sets of power couplers were completed by the end of Mar/2025. Currently, preparation for high power test at resonant ring system in STF is under progress. In this presentation, the basic specifications and design of the input power coupler as well as the overall manufacturing/test schedule and recent progress will be reported in detailed.

I have read and accept the Privacy Policy Statement

Yes

Footnotes

Funding Agency

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