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Progress in engineering design and installation of the HIAF Project

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The High Intensity heavy-ion Accelerator Facility (HIAF) is a new accelerator complex under constructed at IMP (Huizhou campus) China. It aims to provide an international-class experimental platform for fundamental research in nuclear physics, atomic physics, and applied heavy ion beam research. The 2-kilometer beamline, installed in an underground tunnel 12.7 meters below ground, comprises over 6,000 large-scale devices, 5 million components, and 1 million meters of pipelines. To address multidisciplinary coordination challenges across complex subsystems and stakeholders, we developed cross-domain collaborative design strategies and a Building Information Modeling (BIM)-based lifecycle management platform covering architecture, accelerator systems, auxiliary facilities, and decommissioning. This integrated model provides digital support for the facility's lifecycle engineering processes. The full installation of the Booster Ring (BRing), Spectrometer Ring (SRing), and beamline components was completed within 8 months, with integrated commissioning currently underway. The project is on track to achieve national acceptance by late 2025.

Footnotes

Funding Agency

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