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Fabrication of the prototype spoke cavity for the JAEA-ADS linac

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Japan Atomic Energy Agency (JAEA) has been proposing an accelerator-driven nuclear transmutation system (ADS) as a future nuclear system to efficiently reduce high-level radioactive waste generated at nuclear power plants. As the first step toward the full-scale CW proton linac for the JAEA-ADS, we are currently prototyping a low-beta (around 0.2) single-spoke cavity. Because there is no experience in manufacturing superconducting spoke cavities in Japan, prototyping and performance evaluation of the cavity are essential to ensure the feasibility of the JAEA-ADS. The actual cavity fabrication started in 2020, and the cavity assembly by electron-beam welding was finally completed in fiscal year 2024. The fabrication of the prototype spoke cavity is presented.

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Yes

Footnotes

Funding Agency

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