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## Development of C-band compact accelerating structure made of longitudinally-split two halves

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Our 6 MeV medical C-band accelerating structure is assembled using the disk-stacked method, where multiple oxygen-free copper components are stacked along the beam axis. The design incorporates the side-coupled (SC) structure and the re-entrant structure with an accelerating gap at the center of the cavity. Due to the complex shape and the large number of components, there are challenges in manufacturing efficiency. On the other hand, the longitudinally-split method divides the structure along a plane passing through the beam axis, independent of the number of cells, which significantly reduces the number of components. Based on the longitudinally-split X-band accelerating structure developed in the CLIC project, we have been working on the development of a compact, high-gradient, high-shunt impedance, longitudinally-split SC-type C-band accelerating structure. In this presentation, we will report the progress of our work, including manufacturing, RF testing, frequency tuning, and beam testing in the actual operating conditions.

### Footnotes

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