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## **Low Beta 650MHz 5-cell SCRF (LB650) Cavity activities at VECC ,Kolkata and Status Update**

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In India, DAE laboratories are now actively involved in research and development activities on Superconducting RF (SCRF) cavities and associated technologies for high current, high energy proton linear accelerators, which is essential for development of ADSS and Spallation Neutron Source by DAE and also for the FERMI-LAB PIP-II Project. These activities are being carried out under Indian institutions- Fermilab collaboration (IIFC). As part of these activities, VECC, Kolkata, has been involved in the design and development of 650 MHz,  $\beta=0.61$ , 5-cell elliptical shape Superconducting RF linac cavity(LB650 cavity). Before fabrication of 5-cell cavity, VECC developed two single cell prototype niobium cavities with the help of electron beam welding facility at IUAC, New Delhi. The cavities have been processed and successfully tested in Vertical Test Cryostat at Fermilab and achieved high accelerating gradient. After the completion of design, fabrication of two 5 -cell LB650 niobium cavities has started. To validate the process of fabrication of 5- cell LB650 niobium cavity, a prototype 5- cell copper LB650 cavity has been developed before the development of 5- cell LB650 niobium cavity. My talk will cover design of LB650 cavity, LB650 cavity development experience, Test results and status update.

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