



Project: Facility for Antiproton and Ion Research (FAIR)

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FAIR: the next generation accelerator, a technology marvel



Abstract:

- The Facility for Antiproton and Ion Research (FAIR) is a unique accelerator complex under construction at GSI, Darmstadt, Germany. It will offer the scientists opportunities to carry out physics experiments so far not possible with the existing accelerator facilities. Primary and secondary beams spanning practically all elements of the periodic table would be accelerated with ~ 100 to 1000 times the presently available intensity. The facility will provide beams with a wide range of energies. High energy antiproton beams will also be available. Several experiments with different types of beams would be possible to carry out in parallel. The main accelerator is a 1.1 km circumference, superconducting synchrotron for heavy ions. The facility will have storage rings, a collector/cooler ring, super fragment separator, high intensity proton linac, high energy beam transport system etc. The existing heavy ion accelerators of GSI will be upgraded to meet the intensity challenge for FAIR. Several advanced countries, including India, are partners in the construction of FAIR. In this talk, the challenges involved in the design and construction of the accelerator systems, particularly in view of the unprecedented versatility of the available beams, will be presented.

About the Speaker:

- Dr. Bhandari is an eminent accelerator physicist/technologist and former Director of the Variable Energy Cyclotron Centre (VECC) of DAE. He has been instrumental in the construction of two large cyclotrons, namely, K=130 room temperature cyclotron and K=520 superconducting cyclotron for basic nuclear physics and allied research at this Centre. He played a key role in setting up of a 30 MeV, 500 microamperes medical cyclotron facility at Kolkata. He has been serving on several national and international committees related to accelerator projects including FAIR at GSI Darmstadt. He is presently associated with the Inter University Accelerator Centre (IUAC), New Delhi as Honorary Visiting Scientist.

