Status of 3.0 MV Pelletron Accelerator at NCAR, GGV, Bilaspur

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Low energy accelerators have proved important tool for interdisciplinary research & development in Nuclear Physics, Material Science, Biology, nanotechnology, Bio-medical, agriculture, food processing, etc.
At NCAR, Guru Ghasidas Vishwavidyalaya, Bilaspur work on setting up a 3 million volts pelletron accelerator in the university campus has been going on in full swing. The present status is that the accelerator has been installed and vacuum tested. A working vacuum of 10^{-7} torr has been achieved. The first beam acceleration is expected to be completed by end of November 2014.
The accelerator has two ion sources: TORVIS for producing high negative ion currents of hydrogen and helium and SNICS for wide range of negative ions. Presently two target stations have been installed. Two ports of switching magnet at 10 and 20 degree corresponding to ME/Z^2 of 310 amu-MeV and 78 amu-MeVare already installed. The high energy implanter beam line would be used to deliver high intensity positively charged ion beams on a variety of targets. The second beam line would be dedicated for Ion Beam Analysis using Rutherford Backscattering (RBS), Forward Recoil Spectroscopy (FRS), Nuclear Reaction Analysis (NRA), Channeling and Particle Induced X-ray Emission (PIXE).
The TORVIS ion source provides enough hydrogen beam current and 50 microamperes of proton can be achieved at the target. The high current thus will be used for neutron production and thus have a dedicated neutron facility in the second phase. Apart from several applications of this neutron based research the field of Neutron Activation Analysis (NAA) -a versatile technique for the measurement of neutron induced reaction cross-sections will be available. This development would fill up the wide gap existing in the neutron cross section data, important for the design and development of new generation of reactors.
The paper will describe recent development of accelerator facility which is at an advanced stage of commissioning. The facility is expected to be made available to experimentalists very soon.