An academic visit to Atomic Energy Centre

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23rd February 2009: An exciting day is on the cards for the members of IEEE BRACU student branch. It is the first time they are going to have a closer look at the atoms: the tiniest bit of matter! They are about to visit the Atomic Energy Centre, Dhaka (AECD). I am not talking about any nuclear weapon factory, but a place that has been the home to a wide range of research works, widely accepted both nationally and internationally. From environmental pollution to tracing melamine in milk, AECD has been contributing for more than decades to almost every possible aspect of the nation.

The Atomic Energy Centre, Dhaka started its journey, when Bangladesh Atomic Energy Commission (BAEC) was formally constituted in 1973. BAEC is a scientific research organization committed to ensure peaceful utilization of atomic energy through acquisition, development and application of scientific and technological knowledge by undertaking research and development (R&D) in various fields of science. The Atomic Energy Centre, Dhaka is the pioneer institution of BAEC and one of its prime research establishments. The Centre stands proudly at the core of Dhaka carrying out research and development works on some specialized branches of physical sciences, which includes Accelerator facilities division, Chemistry division, E & GS Division, Materials Science Division, Electronics Division and Non-Destructive testing Division.

Upon reaching the facility, we were cordially received by one of the officers of AECD and from there we were led to the **Accelerator Facilities Division.** Here we were given a short description of how this part of the research centre operates and what its uses are. We learned many interesting facts and it was fun to see that the things, which we have learned, so far only in books, are coming to reality. This department provides many services including, multi-elemental analysis of samples related to environment, health, agriculture and



industry, nuclear reaction analysis and many other services of technological and scientific importance. Then we moved on to the room where real things were happening! The room was equipped with a 3 MV Van de Graff Accelerator and its auxiliary system which were installed in 1964. The Van de Graff generator was left open for maintenance services, so luckily we got a chance to have a full interior view of the accelerator. The Accelerator is capable of producing proton, deuteron and alpha particles of energy 0-3 MV with beam currents in the range of nano to microamperes.

Next, we moved on to the **Analytical Chemistry Division.** This department carries out R&D works in various branches of chemistry focussing the socio-economic development of the country, particularly in the field of environmental pollution, nutrition, nuclear analytical techniques in materials analysis and the application tracer technology in industry. One of the main functions of this lab is to check records of environmental pollution throughout the country on a regular basis. In 1993, in Bangladesh, the presence of lead in air was detected in this Analytical Chemistry Lab. In 1999 the amount of lead in air was stated to be high, and finally in July in the same year the use of lead in gasoline was banned by the government.

The department in AECD, which plays a vital role in the health sector of our country, is the **Health Physics Division.** This department provides a number of services including: Measuring the level radiation exposure