



## Report on Soft Skill

### "Know the Nucleus" 2019-20

Kanika, the department association for chemistry organised a classroom activity – "Know the Nucleus" for BSc PCM students on 11-09-2019. The main objective of this activity was to make the undergraduate level students thorough with the basic aspects of nuclear chemistry.

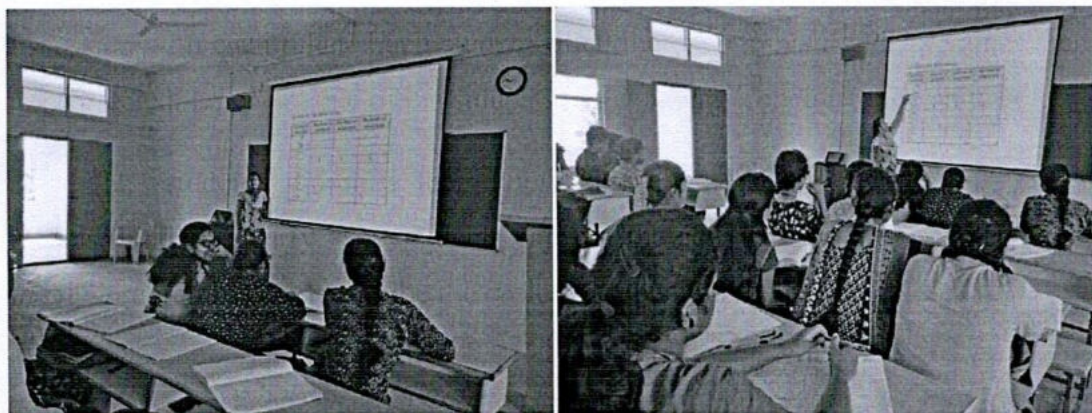
The term nucleus is from the Latin word *nucleus*, a diminutive of *nux* ("nut"), meaning the kernel (i.e., the "small nut") inside a watery type of fruit (like a peach). In 1844, Michael Faraday used the term to refer to the "central point of an atom". The modern atomic meaning was proposed by Ernest Rutherford in 1912. The adoption of the term "nucleus" to atomic theory, however, was not immediate. In 1916, for example, Gilbert N Lewis stated, in his famous article *The Atom and the Molecule*, that "the atom is composed of the *kernel* and an outer atom or *shell*"

Atoms are made up of a positively charged nucleus surrounded by a cloud of negatively charged electrons. Nuclei are very dense and extremely small, they contain more than 99.9% of the mass of an atom and are ten thousand times smaller than an atom. The nucleus is a collection of particles called protons, which are positively charged, and neutrons, which are electrically neutral.

Around 65 students attended the activity with all the teaching staff and non-teaching staffs from the department of science. An introduction to the concepts like atomic number, mass number, number of nucleons, binding energy and mass defect was initially given to the students by Dr. Nebula Murukesh. They were also given an idea on how the binding energy can be calculated from mass defect and what is known as nuclear stability which forms the basis of radiochemistry.

After the introductory session, table containing the names of certain nucleus was displayed. The students were asked to take down the names of the nuclei given. Later on the students were asked to find out the missing parameters in the given table without any discussion with each other. Each student filled the missing values. The values were verified and corrected. Later on, one of the students Ms. Vandana concluded the results.

The students enriched their knowledge about the atomic number, mass number, protons, binding energy. The students enjoyed the activity like their favourite puzzle game and the programme could imbibe the basic concepts into their minds effectively.



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