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.

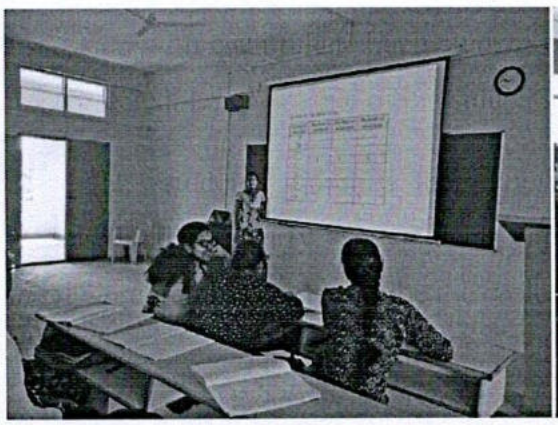
The term nucleus is from the Latin word *nucleus*, a diminutive of *nux* ("nut"), meaning the kernel (i.e., the "small nut") inside a watery type of fruit (like a peach). In 1844, Michael Faraday used the term to refer to the "central point of an atom". The modern atomic meaning was proposed by Ernest 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 contains more that 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.



Co-ordinator
Internal Quality Assessment Cell
St Francis de Sales College
Electronics City Post, Bangalore - 560 100.

PRINCIPAL
St. Francis de Sales College
Electronics City Post, Bangalore - 560 100.

ROLL NO	NAME
19PCM001K	ANUSHA M
19PCM002K	ANUSHEKAR H S
19PCM003K	ARUN M
19PCM004E	ASHISH ROBIN BARA
19PCM005K	AUXILIYA J P
19PCM007H	BHAVANA RAJU RATHOD
19PCM008K	BINDUSHREE K V
19PCM009K	CHANDANA B S
19PCM010K	DEEPTHI V
19PCM011K	DEVI P
19PCM012K	JACKWIN J
19PCM013K	JHANVI S
19PCM015E	JYOTI SINGH
19PCM017K	M DUNDAIAH
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18PCM001K	ASHWINI J
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18PCM003E	M JAI SETHURAM
18PCM004TA	JAYA SUDHA R
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18PCM028K	MEGANA M
18PCM030TE	VASANTH KUMASMR S

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Electronics ... - 560 100.

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Electronics City Post, Bangalore - 560 100.