Seth G B Podar College, Nawalgarh

Department of Chemistry

REPORT OF EXTENSION LECTURE

Date	:	10th October 2019
Time	:	1:00 Pm onwards
Title	:	Uranium : An Element of National Importance for Atomic Energy Programmes
Key Note Speaker	:	Dr.D.P.S.Rathore
Attended by	:	Chemistry Faculty Members, M.Sc Students
Distribution	:	IQAC & Principal Office.

Uranium: An Element of National Importance for Atomic Energy Programmes

The Department of Chemistry, Seth G B Podar College, Nawalgarh organized an One Day extension lecture program. Lectures delivered by Dr.D.P.S.Rathore Retd. Senior Scientist AMD (Atomic Minerals directorates for exploration and research, Jaipur) on "Uranium : An Element of National Importance for Atomic Energy Programmes". Total 49 students of postgraduate and the faculty of the Department attended the lecture and asked questions to the expert who answered them in detail and to the satisfaction of the audience.

Benefit to students by the Program:-

In extension lecture by Dr.D.P.S.Rathore Retd. Senior Scientist AMD (Atomic Minerals directorates for exploration and research, Jaipur) has described the long-term goal of India's nuclear program has been to develop an advanced heavy-water thorium cycle. The first stage of this employs the pressurized heavy water reactors (PHWR) fueled by natural uranium, and light water reactors, which produce plutonium incidentally to their prime purpose of electricity generation. The second stage uses fast neutron reactors burning the plutonium with the blanket around the core having uranium as well as thorium, so that further plutonium (ideally high-fissile Pu) is produced as well as U-233. The Atomic Minerals Directorate (AMD) has identified almost 12 million tonnes of monazite resources (typically with 6-7% thorium). In stage 3, Advanced Heavy Water Reactors (AHWR) would burn thorium-plutonium fuels in such a manner that breeds U-233 which can eventually be used as a self-sustaining fissile driver for a fleet of

breeding AHWRs. An alternative stage 3 is molten salt breeder reactors (MSBR), which are believed to be another possible option for eventual large-scale deployment.

In our lecturer he give detail about case study in March 2011 large deposits of uranium were discovered in the Tummalapalle belt and in the Bhima basin at Gogi in Karnataka by the Atomic Minerals Directorate for Exploration and Research (AMD) of India. The Tummalapalle belt uranium reserves promises to be one of the world's top 20 uranium reserves discoveries. 44,000 tones of natural uranium have been discovered in the belt so far, which is estimated to have three times that amount. The natural uranium deposits of the Bhima basin has better grade of natural uranium ore, even though it is smaller than the Tummalapalle belt.

In summarization of this lecturer he suggest that India's programme for the peaceful utilization of atomic energy has, to a certain extent, been affected by restrictive trade practices and unilateral embargoes on nuclear supplies by certain countries. These are unfortunate developments since they are essentially based on political mistrust and discrimination. In the case of India, such measures will cause temporary delays and perhaps cost over-runs for projects in the near future. In the long run, these developments will only strengthen and accelerate India's programme for complete self sufficiency in the nuclear field.

Few glimpse of Extension Lecture

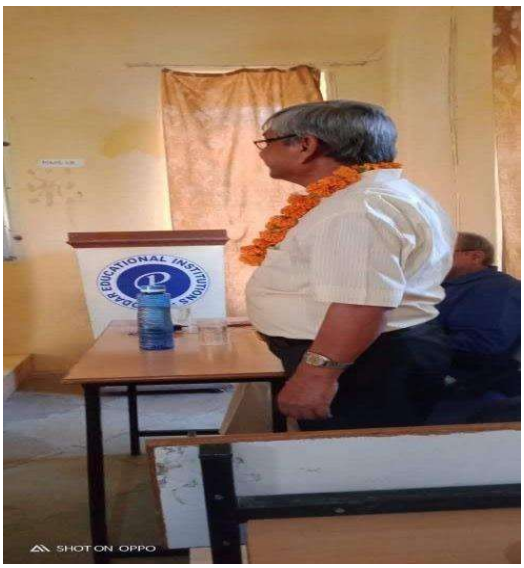

Fig 1: Welcome of our guest speaker

Fig 2 & 3: Lecturer delivers to PG students