



One Day Workshop
On
“Role of Nuclear Technologies in Human Development”

Sponsored by Department of Atomic Energy (DAE), Govt. of India

May 25, 2019



Organised by:
Mechanical Engineering Department
Indian Institute of Technology
(Banaras Hindu University)
Varanasi-221005

Venue:
CERD, Department of Mechanical Engineering
IIT (BHU), Varanasi-221005

Introduction:

India produces about 272 million tons of food grains, 295 million tons of fruits and vegetable, 71 lakh tons of spices, and huge quantities of other floriculture products. The losses reported in food grains, fruits and vegetables, spices, and floriculture range between 8-10, 20-30, 10-15 and 15-20%, respectively. The post-harvest losses result due to rapid ripening, insect infestation, fungal and bacterial growth during storage. To alleviate these problems, radiation processing e.g. exposure of food commodities to Gamma rays, X-rays or electrons beam is used. Radiation processing is used to extend the shelflife of fruits and vegetables through sprout inhibition, delay in ripening, control of insect infestation in grain or other stored products and by killing fungi and bacteria. It is also used for microbial decontamination of herbs, spices and extending the shelf life of foods such as poultry meat and shellfish by killing or significantly reducing the number of spoilage bacteria. Radiation can also be used for quarantine treatment of fruits, vegetables, cut flowers and other medicinal plants for export markets.

Varanasi and its adjoining areas are production hub of food grains and fruits and vegetables. A Centre equipped with state of the art post-harvest preservation technologies in this region will help reduce losses. This will also help increase farmer's income and provide growers an incentive to work year round and help increase productivity. The technology availability can also provide solution to distress sale during glut seasons.

Another major area of application of nuclear technologies is in healthcare sector for medical diagnosis and cure.

The workshop is aimed to cover some of the applications of

PATRON

Prof. P.K. Jain, Director, IIT(BHU)

ADVISORY BOARD:

Prof. Rajeev Prakash, Dean (R&D), IIT(BHU)
Dr. A.K. Sharma, DAE Raja Ramanna Fellow, and Hon. Consultant, FSSAI.
Dr. Rajeev Bhutani, Senior Fellow, Centre for Joint Warfare Studies, Indian Army, Delhi
Dr. Ranajit Kumar, Head, NCPW, DAE, Mumbai

CHAIRPERSON:

Prof. S.K. Shukla, Dept of Mechanical Engineering, IIT, BHU

MEMBERS:

Prof.S.V. Singh, Chem. Engg., IIT, BHU
Dr.S.K. Gupta, Civil Engg., IIT, BHU
Dr.Jeewan V.Tirkey, Mech.Engg., IIT, BHU
Dr.Sarawadekar Kishor P., Electronics Engg., IIT, BHU
Dr.Ashutosh Dubey, Ceramic Engg., IIT, BHU

About the City and Institute:

The holy city Varanasi is the oldest living city in the world which is also known as the capital of the spiritualistic world. It is a place of great historical and cultural importance. This religious capital of India is situated on the bank of the holy river Ganges and is famous for temples of Lord Shiva, Buddha (at Sarnath) and Sankat Mochan etc. The Institute of Technology, BHU was established in 1968 and converted into Indian Institute of Technology (Banaras Hindu University) on 29 June 2012. Presently, the institute comprises of 14 Departments and three interdisciplinary schools.

nuclear technologies for societal benefit.

Objectives:

- To promote societal benefits of nuclear technologies developed by BARC/ DAE in the northern part of India.
- To promote R&D in the areas of radiation processing for value addition of agri-products, and agri-waste utilization.
- Identify human resource requirements for management of food irradiation facilities