# NUCLEAR ENERGY

## THE BETTER ENERGY

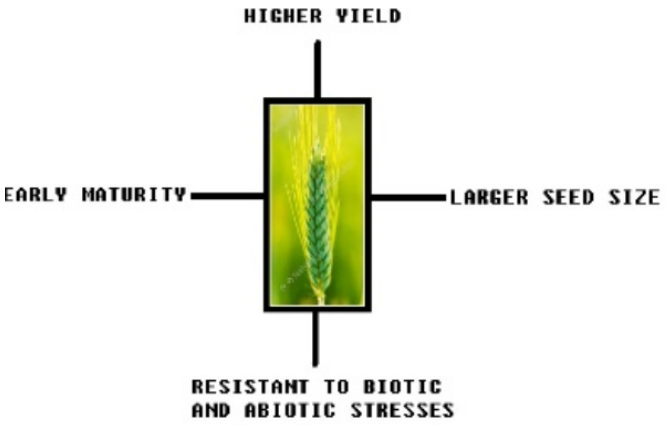
**MARCH | NEWSLETTER | 2021**

*Nuclear Energy - The Better Energy is an initiative to create awareness about the applications of peaceful Nuclear Energy. We proudly present our March newsletter.*

## NUCLEAR 101

**Nuclear 101 is a section where we will bring to you some of the most basic concepts of Nuclear Physics explained in a non-specialist way**

**Radiation Induced Mutation** – To artificially induce hereditary changes in plants, either physical or chemical agents are used. Ionizing radiation is a widely used physical agent to treat the seeds and other plant material of crops to create heritable mutations. When seeds are briefly exposed to radiation, subtle genetic changes in plants occur, speeding up a natural process that would otherwise take many years. This technique helps swiftly develop crops that are early maturing, give higher yield, have quality traits, are more resistant to diseases and natural disasters like droughts and floods.




The Food and Agriculture Organization (FAO) of the IAEA has more than 3346 officially released mutant varieties from 228 different plant species in more than 73 countries throughout the world. Over 1,000 mutant varieties of major staple crops, cultivated on tens of millions of hectares enhance rural income, improve human nutrition and contribute to environmentally sustainable food security in the world.

*Source: https://thebetterenergy.net/food-safety*

***Visit our website (thebetterenergy.net) for latest updates about Nuclear Energy***

# Highlighted Articles

## *Indian Contribution to ITER Project (Part I)*

ITER Organization is the leading team responsible for operation and construction of the International Thermonuclear Experimental Reactor in France. India is one of the ITER-members and has created a domestic agency to deliver the promise towards fulfilling ITER goals.

Written by Pranjal Singh, this is the first installment of the article to bring to light the invaluable contributions of India towards this mega science project aiming to make nuclear fusion a reality on earth. (Cover image from www.iter-india.org)

HTTPS://THEBETTERENERGY.NET/ITER-INDIA

## *Diamonds and Nuclear Technology – Is it Love?*


*In a previous article, "Let's have a Date..." by Nilormi Das, we were all enlightened about how an isotope of Carbon is used in Radiocarbon Dating to determine the age of samples that are 30,000 – 40,000 years old. On Valentine's Day this year, I realised that there is a serious "love connection" between Nuclear Technology and Carbon, both are serious with their relationship and wish to take it further.*

Written by Aditya Chincholkar, this article highlights how Nuclear Technology and Diamonds (an allotrope of Carbon) are taking it to the next level.

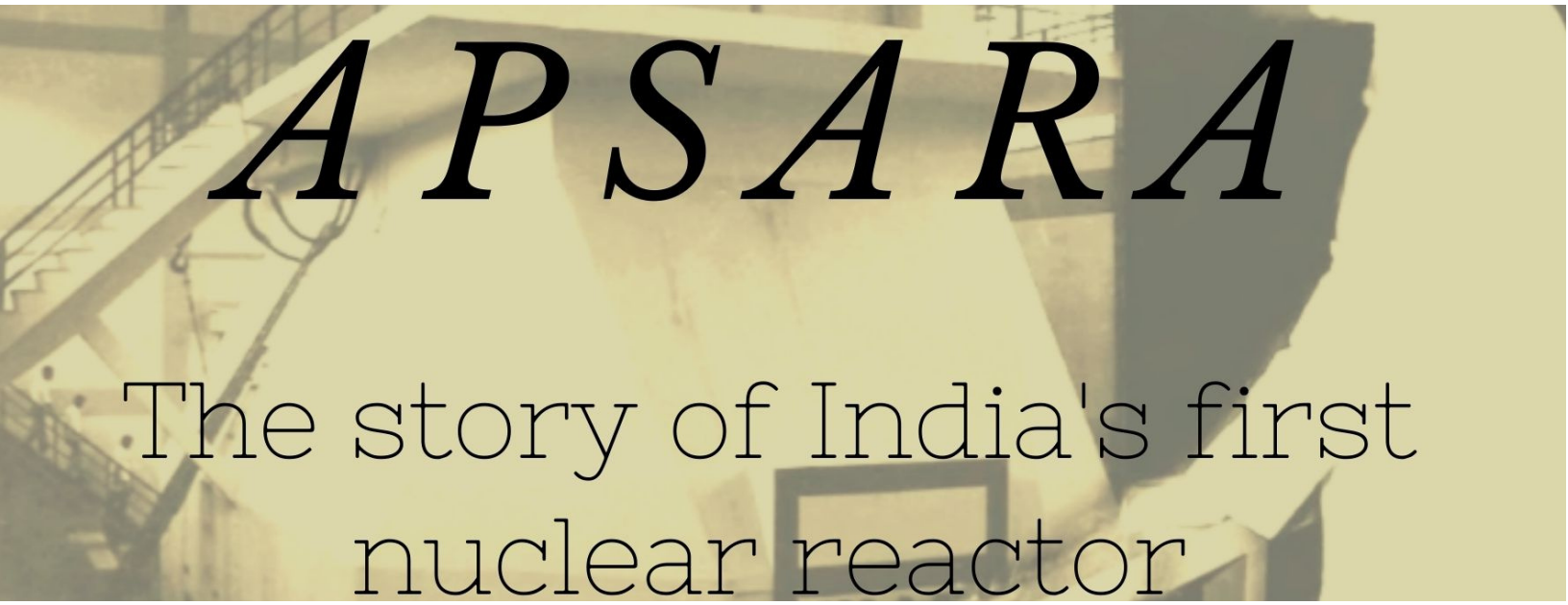
READ FULL ARTICLE HERE: HTTPS://THEBETTERENERGY.NET/DIAMONDS

# DID YOU KNOW?

While it might be possible for us to survive without a refrigerator, most of you would wonder how to get rid of spoiling vegetables? In fact, you can keep your food items fresh for months even without a refrigerator. Exposure of food products to ionizing radiation such as gamma ray, electron radiation or X-ray increases the shelf life of the product provided. Click here to know more.

***Visit our website (thebetterenergy.net) for latest updates about Nuclear Energy***

With this newsletter, nUeBe is starting a new feature -- *Contributed guest articles*.
Every month we will present to you an article contributed by one of our prized subscribers. To submit an article for review, please email ***thebetterenergy@gmail.com***




**The story of India's first nuclear reactor - APSARA**
**Author: Ridhi V. Raaj (B.Tech Nuclear Science student from Mody University)**

This article serves as an introduction to APSARA, India's first nuclear reactor which achieved criticality in 1956 at the Bhabha Atomic Research Center (BARC) in Mumbai.
Here, we will highlight some salient features of the APSARA reactor, its timeline, research aspects and how it contributed to BARC's motto 'Atoms In The Service Of The Nation'.

READ FULL ARTICLE HERE: HTTPS://THEBETTERENERGY.NET/APSARA