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**Project Title :**

**ELECTRON BEAM IRRADIATION OF READY TO EAT (RTE) INDIAN CUISINES FOR LONGER SHELF LIFE.**

Ready to eat (RTE) food has received considerable attention in recent years because of its readiness to consumption and high nutritional value compared to fast foods. Idli is very famous south Indian traditional breakfast prepared by steam cooking of fermented batter of rice and black gram. This staple food of Indian cuisine is very popular due to its taste, aroma and rich calorific rate which is naturally enhanced by fermentation process. Electron beam irradiation (EBI), is a low dose ionising radiation technology that can control food contamination, inhibit a variety of food borne pathogens, creating effective maintenance of food by its quality, taste and extends shelf life. Most attractive feature of this preservation method is that there is no added carcinogenic, chemical preservatives in the food. EBI is applied to freshly prepared Idlis and dose of radiation required is optimised. Heating as a hurdle technology is added, post irradiation to low dose applied sample. Sensory, microbiological and biochemical characterization techniques are carried out to evaluate the shelf life extension period. Food grade safe Idli with an extended shelf life up to one month is now possible.

\* International Conference on Radiation Research: Impact on Human Health and Environment (ICRR-HHE 2016) and First Biennial Meeting of Society for Radiation Research (SRR) on February 11 - 13, 2016 at Convention Centre, Anushaktinagar, Bhabha Atomic Research Centre, Mumbai - 400 094, INDIA

Abstract no 42 titled ' **ELECTRON BEAM IRRADIATION OF READY TO EAT (RTE) INDIAN CUISINES FOR LONGER SHELF LIFE** ' has been accepted for the presentation in ICRR-HHE-2016.

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**Project Title :**

**Synthesis and Application of Polyaniline-Poly (methyl methacrylate) (PANI-PMMA) Blend Nanofibers by Electrospinning Technique**

Electrically conducting organic polymers are a novel class of synthetic metal that combine the chemical and mechanical properties of polymers with the electronic properties of metal and semiconductors. Electronically conducting polymers have been studied extensively to their applications in energy conversion devices, sensors, electro chromic devices, electromagnetic interference shielding, electronic circuits etc. Nanofibers have large surface area to volume ratio and hence have excellent application potential in sensors, filter design etc. Polyaniline (PANI) is the well-known and widely studied conducting polymer because of their high environmental, thermal and chemical stability and their high conductivity. It is insoluble in many common organic solvents and hence difficult to process. PANI in its base form is non conductive but it can be made conducting by protonating with an acids. Electrospinning is one of the simplest techniques for obtaining polymer nanofibers. It is difficult to electrospin PANI by itself since we need preferably the polymer in solution form. In this study we have formed nanofibers of PANI (CSA) dispersed in Poly Methyl Methacrylate (PMMA) solution in chloroform. The structure, morphology and conductivity of the PANI/PMMA composite nanofibers of different concentration were characterized by FTIR, SEM and Four probe method, which indicated that the coaxial nanofibres of PANI emeraldine salt and PMMA were successfully prepared. The diameters of the electrospun PANI - PMMA nanofibers had an effect on the sensing magnitude of the gas sensor.

\* Presented a paper (poster) titled : **PANI – PMMA composite nano – fibers synthesized by electrospinning technique** at the International conference on Photons : Multiple & Creative solutions to challenges held on 4<sup>th</sup> and 5<sup>th</sup> December, 2015 at NES Ratnam College of Arts, Science & Commerce, Bhandup (W), Mumbai – 400078.

