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Theme:

Physics: Truth, Beauty and Relevance

PROGRAMME & ABSTRACTS

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RE-IIIB-07: Effect of Reheating on Thermo-Physical Properties of Edible Oil at High Temperature

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This paper is focused on the evaluation of thermophysical properties of unheated oil and multiple times reheated oils to study the thermal degradation of edible oil which is reheated for very long time and hence assesses the quality of reheated oil being used in different first food shops and restaurants. The purpose of this study is to evaluate the changes in different thermophysical properties such as total energy, refractive index, thermal conductivity of reheated edible oils that take place during the reheating of oils, in order to find an easy and effective technique for quality testing of edible oils. Study reveals that the refractive index and conductivity of reheated edible oil have increased and the total energy of edible oil has decreased due to reheating at high temperature for long time. Study also indicates that the presence of food contents during the heating of edible oil, affect the thermophysical parameters in some extent.

RE-IIIB-08: Procedure of Water Boiling Test for Improved Cook Stove

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Water Boiling Test (WBT) is a rough simulation of cooking process by which a stove designer can understand how well energy is transformed from fuel to the cooking pot. Water boiling test evaluates the performance of the improved cook stove (ICS). As the use of improved cook stove is increasing day by day in Bangladesh, it is necessary to follow a standard procedure of water boiling test. In this paper there are some details procedure of water boiling test.

Session IVA : Nano Materials

IT-IVA: Cell Death Induced by the Application of Alternating Magnetic Field and Tuning Heat for Cancer Thermo Therapy

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It is most desirable for mankind to eradicate cancer from the world. Nanotechnology in general and nanomaterials in particular offer a great deal of opportunity in this respect. It is as early as 1900s that scientists were aware that thermotherapy might be a means of killing cancer cells. But the mechanism was not known during those days that how the heating media might be delivered into the deep-seated malignant tissues inside body. Nanotechnology and the invention of nanoparticle based magnetic particle hyperthermia (MPH) has opened up the bottle-neck to approach such problem. With this approach it is now possible to think of selective destruction of cancerous part of the body without affecting healthy cells unaffected by delivery of the nanoparticle loaded fluid using appropriate surface coating or direct injection. Multimodal approach has also been developed where hyperthermia might be used along with radiotherapy and/or chemotherapy. Application of hyperthermia would weaken the cancer cells which would help destroy cancer cells with low dose of chemo or radiotherapy. Performance