

# HAFOS '09

*Halal Food Seminar*

*"Malaysia as a Halal Food Hub : Are We on Track?"*

## **PROGRAMMES** & **ABSTRACTS**

15th & 16th of July 2009

Main Lecture Hall 3 (DKP3)  
Universiti Sains Islam Malaysia  
(USIM)



Organized by :

**Undergraduate Students**

**Faculty of Science & Technology**



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- Food Chemistry and biochemistry  
- Halal and Non-Halal Products Research  
- Chemistry of Natural products  
- Instrumental Analytical techniques  
: Papers – related to Halal – published in refereed journals.  
: Detection of Lard Mixed with Body Fats of Chicken, Lamb and Cow by Fourier Transform Infrared Spectroscopy. *J. Am. Oil Chem. Soc.* 78(7):753-761 (2001).  
: Determination of Lard in Mixture of Body Fats of Mutton and Cow by Fourier Transform Infrared Spectroscopy. *J. Oleo Sci.* 12: 633-638 (2003).



### ADVANCE TECHNOLOGIES AND PROBLEMS IN HALAL & NON-HALAL FOOD'S DETECTION

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#### Abstract:

Halal food is a sensitive and serious matter to Muslims. Muslims should not look for scientific evidence behind all commandments that come from the Creator (Allah S. W. T.) before deciding to accept and adopt these injunctions in his/her lifestyle. Muslims should obey these commandments as a matter of worship (*ibadah*). Adulteration of value-added food products - involving the replacement of high cost ingredients with lower grade and cheaper substitutes can be very attractive and lucrative for food manufacturers or raw material suppliers. Many fraudulent and deception cases reported worldwide involving adulteration of Haram ingredients in Halal food. In other cases, non-Halal contaminants got introduced in the final food products unintentionally. Current Analytical Methods that can be used for Halal Food Authentication are Gas Chromatography – GLC, GC and GC-MS. Typical uses of GC were for the determinations of non-Halal ingredients in food or for the analysis of toxicity, which make the food non-*Toyyib*. Fourier Transform Infrared (FTIR) Spectroscopy could be used to analyze food samples such as animal fats, chocolate, cake, and biscuits for the presence of non-Halal ingredients such as lard. Analyses include characterizing and identifying the differences in FTIR spectra profiles. FTIR spectroscopy with chemometric analysis offered rapid, simple, reliable and environmentally friendly analytical technique that can detect and quantify low level of lard adulterated food samples (3 - 5% detection limit). Electronic Nose (E-Nose) technology is a newly introduced analytical instrument that provides rapid, early identification and quantification of atmospheric changes caused by chemical species to which it has been trained. Studies have showed that E-Nose can be used as a rapid detection of non-Halal food contaminants in the food matrix by characterizing simple and complex odors. Differential

