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INFO HALAL

Halal Products Research Institute

Upholding the sanctity of Halal through research and services

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Director's Message

“O ye who believe! Forbid not the good things which Allah has made Halal for you, and transgress not. Lo Allah loves not transgressors. Eat of that which Allah has bestowed on you as food Halal and Good, and keep your duty to Allah in Whom ye are believers.”

(Surah Al Ma'idah, Verse 87-88)

”

Assalamualaikum w.b.t.

Defined as 'things of actions permitted by Shariah law without punishment imposed on the doer', the understanding of Halal is now expanding. Halal is no longer a purely religious issue ; it is becoming a global symbol for quality assurance and a lifestyle choice for Muslims and non-Muslims. The Halal standard is slowly being recognized as a credible management system in global trade. Acquiring this standard will give a jump start and clear advantage for business. Malaysia as a modern Islamic country with an open economy system, a well developed physical and institutional infrastructure, has the capability of supporting programmes to develop and promote the Halal industry.

A comprehensive approach in the Halal industry requires a balance of knowledge and expertise of Islamic tenets and food science, biochemistry and microbiology, as well business and management. At the Halal Products Research Institute, a lot of progress in R&D activities such as method development, product and process innovation and also research in policy and management being done since its establishment.

Supported by Economic Planning Unit, Prime Minister Department, Halal Analysis Laboratory has been established in Putra-Infoport, UPM. This is the first in Malaysia, a laboratory is equipped with sophisticated analytical instruments dedicated to Halal analytical services.

The establishment of the RM10 million worth laboratory is expected to help overcome the shortage of laboratories capable of carrying out the analysis of Halal products which is currently undertaken by the

Department of Chemistry, MOSTI. This is in accordance with our national aspiration to become a major player in carrying out the analysis and verification of Halal products. The laboratory will also help JAKIM in developing human capitals and expertise of the department's Malaysia Halal Institute at Bandar Enstek, Nilai.

These developments that are expected to strengthen further Malaysia's position as the leading global halal hub, Insyaallah.

Wassallam

Prof. Dr. Yaakob Che Man
Director



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Researcher's Profile

DR. SUHAIMI AB RAHMAN

Dr Suhaimi Ab. Rahman started his career as a tutor in business law at the Department of Management and Marketing, Faculty of Economics and Management, Universiti Putra Malaysia in July 1997. In 1998, he was promoted as a lecturer at the same Department and later as a senior lecturer in 2008. Dr Suhaimi was appointed a Coordinator for Diploma of Business and Management in 1999, Coordinator for Bachelor of Business and Administration (Executive Program) in 2007, Acting Head of Department of Management and Marketing in 2008 and Head of Executive Programme Unit, Faculty of Economics and Management in 2008. In August 2008 he was appointed as the Head of Laboratory of Policy and Management, Halal Products Research Institute.



Dr Suhaimi's educational background which comprises Islamic legal studies from Al-Azhar University, a Masters of Comparative Law degree and a PhD in Business Law have made him an expert in comparative legal system. His research interest mainly focuses on the legal system and the development of Islamic law in the modern world. This includes, especially, the application of classical Islamic law in contemporary transactions, reinterpretation of classical laws as well as the harmonization of Islamic law with the civil law. In particular, he has been researching on the application of classical Islamic law of guarantee in modern Islamic banking and legal practices.

As the head of Laboratory of Policy and Management, he is currently researching on legal, policy and management issues pertaining to halal products. He is now heading two research grants; one of which is looking at the different interpretation of halal and its impact on halal industry development within the ASEAN region. He is also pioneering an in depth research for developing the concept of Islamic tourism.

Dr Suhaimi's continuous involvement in legal discourses has also made him a legal consultant in several areas of laws for several government agencies. He was recently involved in the Halal Act Task Force under the Islamic Development Department of Malaysia (JAKIM) and the Attorney General's Chambers. His previous consultancy work also includes the formulation of Compulsory Rainwater Harvesting Laws for the National Hydraulic Research Institute Malaysia. Dr. Suhaimi's dedication for the academic world has won him several awards including the Excellent Services Award in 2007 as well as two silver medals and a bronze medal during the university's Research and Innovation Exhibition.



Editor's Note

This issue of Info Halal summarises the activities of Halal Products Research Institute, UPM from December 2009 until June 2010. Last year's IMT-GT International Symposium on Halal Science and Management was a big success for the Institute. The symposium was attended by scientists, policy makers and post graduate students from countries like Malaysia, Indonesia, Thailand, Singapore, Sudan etc. The Institute also received a number of visitors from several government agencies as well as from private organisations. This dictates the important roles played by the institute in promoting and disseminating the halal agenda and research output to the world, at large.

>> Editorial

ADVISOR :

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Several high impact research outputs in the form of scientific manuscripts and patents have been published. Not forgetting the profile of scientists behind the success of the Institute. Their areas of expertise and contributions to the Muslim ummah are also highlighted. This issue also has a short article on blood that hopefully will generate interest, not only among the scientists and academicians, but also to the public to carry out research and improve understanding as to why blood is haram in Islam.

SCHOLAR'S NOTE

BLOOD

What is blood?

Blood is a specialized fluid that plays a vital function in transporting the cells that exist in both human and animal bodies. Plasma is the liquid portion of the blood which contains electrolyte, nutrients, vitamins, hormones, clotting factors and proteins.

Islamic view on the use of blood in food products

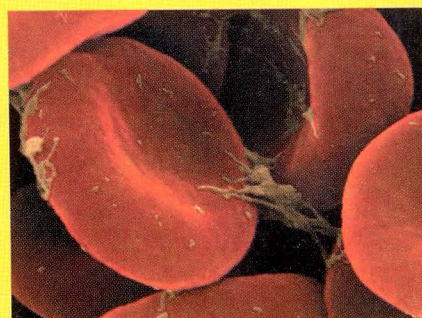
Allah says in the Qur'an, Surah Al-Ma'ida (5:3): "Forbidden to you (for food) are: dead meat, blood, the flesh of swine, and that on which hath been invoked the name of other than Allah". This clearly insists that blood is prohibited to be consumed by the Muslims as it is considered to be filthy and harmful. From the Islamic point of view, there are two types of blood; circulated blood (i.e: cattle, goat) which is prohibited and uncirculated blood (i.e: fish, prawn, grasshopper) which is permitted to be consumed. With regard to this, Ibnu Abbas (r.a) was once asked about spleen. He replied that it is allowed to be consumed as it is not categorized as the unlawful blood[1].

Halal issues on the use of blood in food products

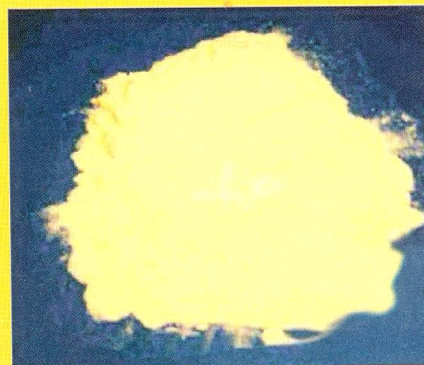
There are many food products that have high tendency to be incorporated with blood. For instance, in sausage preparation, the animal blood is cooked with a filler (meat, fat, wheat) until it is thick enough to congeal when cooled. In this case, pig and cattle blood are most often used. Besides, blood is also used as a thickener in sauces and puddings due to its ability to provide flavour or colour in meat. Additionally, blood has been used as part of the broth for soups and stews. Furthermore, meat blood plasma either in concentrated or hydrolysed form has been used as ingredients in surimi-based products to increase its quality. A group of researchers reported that meat-plasma protein concentrate is able to improve the gel forming of surimi[2] and caused increased torsional shear stress and strain of the gels of surimi. The improvement of functional properties of surimi by the addition of meat-plasma is concluded to be due to the inhibition of proteolytic enzymes activity[3]. Due to the vast application of blood in food products, Muslim consumers are prone to fraud and adulteration. Food suppliers tend to incorporate blood in their food products for economic purposes without proper labelling. This has increased Muslim consumer awareness towards the sanctity of the food products being sold nowadays.

References

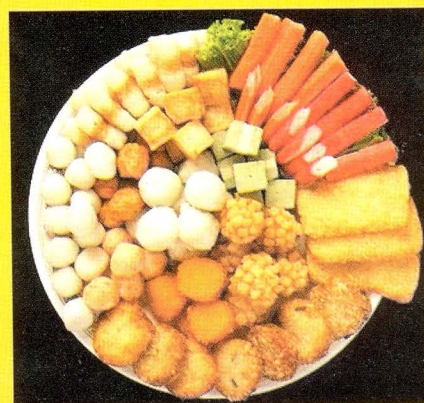
1. Imam al-Ghazali, Halal Dan Haram Dalam Islam, 2007, Berlian Publication. .
2. Ng, M. C., Lee, H. K., Sophonphong, K., Rungjiratananon, S., Kongpun, O., Suwannarak, W and Low, L. K. 1996. Utilization of Lizardfish, *Saurida tumbil*, for Surimi Production. Proceedings of the Seminar on the Advances in Fish Processing Technology in Southeast Asia in Relation to Quality Management. Singapore 29 Oct-1 Nov 1996. MFRD-SEAFDEC, Singapore.
3. Park, J. W. 1994. Functional Protein Additives in Surimi Gels. J. Food Sci. 55:525-527.



Blood cells



Spray dried animal blood plasma used in sausages preparation

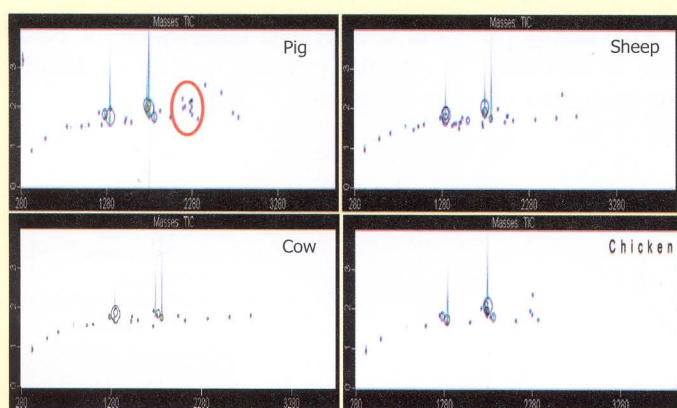


Surimi-based products

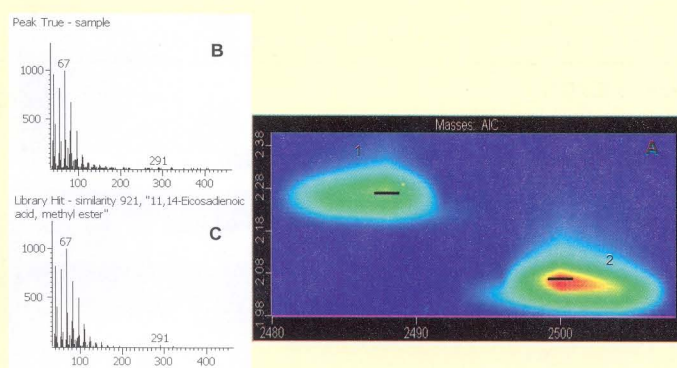
PUBLICATION 1

FATTY ACIDS PROFILE OF ANIMAL FATS BY GC×GC-TOF-MS

Today, the presence of porcine-based derivatives in halal products is one of the major concerns for Muslim consumers nowadays. Analytical techniques with high accuracy and sensitivity are necessary in order to detect the presence of porcine-based products, such as lard. This study demonstrated the approach of using a comprehensive two-dimensional gas chromatography coupled to Time-of-Flight Mass Spectrometry (GC×GC-TOF-MS) for discrimination of the lard from other animal fats. The method was used to differentiate four common animal derived fats: lard (LA), chicken fat (CF), cattle fat (CA), and goat fat (GF). Lard could be effectively discriminated from fat of other animal species by three fatty acid methyl esters (FAME) constituents involving methyl 9,12,15-octadecatrienoate (C18:3n3t), methyl 11,14,17-eicosatrienoate (C20:3n3t) and methyl 11,14-eicosadienoate (C20:2 n6).



<< Figure 1. 2D-contour plot chromatogram of animal-derived FAME; lard (LA), goat fat (GF), cattle fat (CA), and chicken fat (CF)



<< Figure 2. (A) Contour plot of (1) methyl 11,14-eicosadienoate and (2) methyl 11-eicosenoate, (B) mass spectra of peak no.1 and (C) the library spectra of 11,14-eicosadienoate



Source :

Indrasti, D., Che Man, Y.B., Mustafa, S., and Hashim, D.M. (2010). Lard detection based on fatty acids profile using comprehensive gas chromatography hyphenated with time-of-flight mass spectrometry. *Food Chemistry*, 122 : 1273-1277.

Dias Indrasti is a final-year MSc student in Halal Food Analysis under supervision of Prof. Yaakob B. Che Man. She is a junior lecturer in the Department of Food Science and Technology, Bogor Agricultural University (IPB), Indonesia.

PUBLICATION 2

AUTHENTICATION OF EXTRA VIRGIN OLIVE OIL FROM PALM OIL USING FTIR SPECTROSCOPY AND CHEMOMETRICS

The authenticity of fats and oils is of paramount issue due to the legal conformity, religious reasons (especially halal and kosher issues), economic reasons (right foods for the right price), guarantee of a constant well-defined quality, and use of safe ingredients (no hazardous substitutes). Fourier Transform Infrared (FTIR) spectroscopy has been developed for analysis of extra virgin olive oil (EVOO) adulterated with palm oil (PO). Measurements were made on pure OO and that adulterated with varying concentrations of PO (0.5– 50 % in EVOO). Two multivariate calibrations, namely partial least square (PLS) and principle component regression (PCR) were optimized for constructing the calibration models, either for normal spectra or its first and second derivatives. The discriminant analysis (DA) was used for classification analysis between OO and that adulterated with PO and the other vegetable oils (palm oil, corn oil, canola oil, and sunflower oil). Frequencies at fingerprint region, especially at 1500 – 1000 cm^{-1} , were exploited for both quantification and classification. Either PLS or PCR at first derivative spectra revealed the best calibration models for predicting the concentration of adulterated olive oil samples, with coefficient of determination (R^2) of 0.999 and root mean standard error of cross validation (RMSECV) of 0.285 and 0.737, respectively. DA was able to classify pure and adulterated samples on the basis of their FTIR spectra with no misclassified group obtained. In addition, DA was also effective enough to classify OO samples as the distinct group from the evaluated other vegetable oils (Figure).

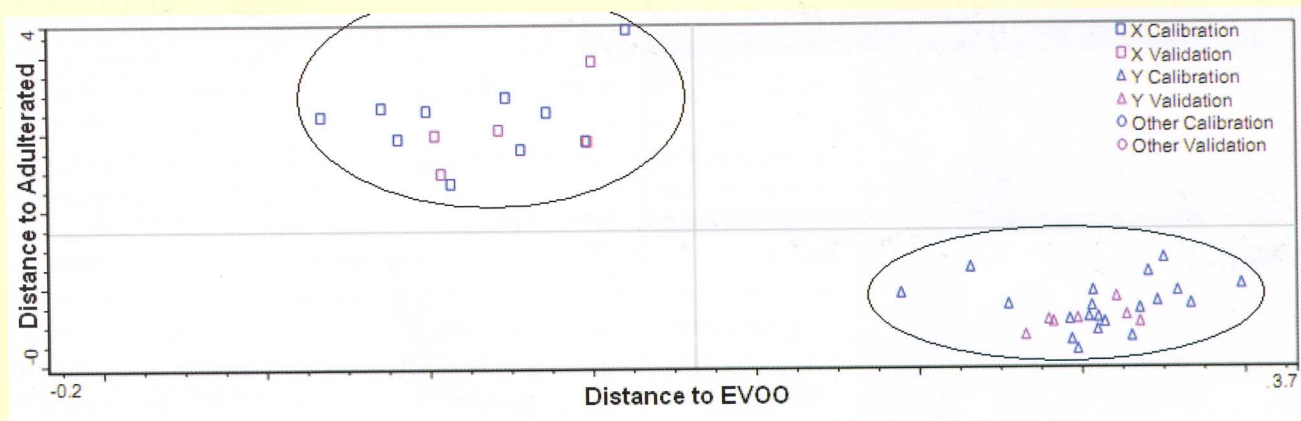


Figure 1. Coomans plot of Olive Oil and Palm Oil: (□) Olive oil; (Δ) adulterated samples

Source :

Rohman, A. and Che Man, Y. B. (2010). Fourier transform infrared (FTIR) spectroscopy for analysis of extra virgin olive oil adulterated with palm oil. *Food Research International*, 43: 886 – 892.

A. Rohman is a final-year Ph.D student in Halal Products Research Institute under supervision of Prof. Yaakob B. Che Man. He is a an Associate Professor in Faculty of Pharmacy, Gadjah Mada University (UGM), Yogyakarta, Indonesia, with scholarship from The National Education Ministry, Republic of Indonesia.



PUBLICATION 3

MEE FAT FROM *Madhuca longifolia* SEEDS AS A RAW MATERIAL FOR HALAL ALTERNATIVE FATS

Madhuca longifolia is a large-grown, woody tree distributed in many countries in Asia. Belonging to the family Sapotaceae, the tree is reported to have several uses in traditional medicine. The crude oil extracted from the seeds is known as Mee fat, which is pale yellow in color and remains as a semi-solid under the tropical temperature conditions. Thermal analysis by differential scanning calorimetry showed that Mee fat had two-widely separated high and low melting thermal transitions in its cooling profile. This feature would be beneficial for the effective separation of Mee fat into solid and liquid fractions. Analytical data obtained from preliminary investigations indicated that these components would be useful for formulation of halal alternative fats.



Source :

Marikkar, J.M.N., Ghazali, H.M. and Long, K. (2010). Composition and thermal characteristics of *Madhuca longifolia* seed fat and its solid and liquid fractions. *Journal of Oleo Science*, 59: 7-14.

Dr. J.M.N. Marikkar is a Research Fellow at the Halal Products Research Institute, UPM. The main focuses of his current research are on the development of analytical methodology for halal authentication and formulation of halal alternative products.

STAFF PROFILE



Zulfliha Zakaria
Science Officer

EDUCATION

Secondary	Sekolah Menengah Sains Tengku Abdullah, Raub, Pahang
Tertiary	Science Matriculation, Universiti Pertanian Malaysia B.Sc. (Biotechnology), Universiti Putra Malaysia

EXPERIENCE AND CAREER HIGHLIGHTS

Science Officer (current)	Laboratory of Analysis and Authentication, Halal Products Research Institute, Universiti Putra Malaysia
Science Officer (4 years)	Laboratory of Applied Informatics, Institute of Multimedia and Software, Universiti Putra Malaysia
System Analyst (3 years)	Institute of Multimedia, Universiti Putra Malaysia
Research Assistant (2 years)	CyberCreative Lab, University Business Center, Universiti Putra Malaysia

IPPH ACTIVITIES IN 2010

Date	Activities	Location
DECEMBER 2009		
10	National Symposium on Fiqh Science and Technology	Hotel Paragon, JB
21-22	IMT-GT International Symposium on Halal Science and Management 2009	Pan Pacific KLIA, Sepang
JANUARY 2010		
19	"Majlis Perutusan Naib Canselor"	Dewan Besar UPM
19-20	Intertek Testing Services Seminar	Bangkok, Thailand
20	Principle in Analytical Chemistry Seminar	IPPH
26	Workshop – Halal Industries Focus Group	Hotel Marriott Putrajaya
FEBRUARY 2010		
3	Interview - Bernama	IPPH
5	Visitor – Department of Chemistry, MOSTI	IPPH
	Visitor - Lajnah Jabatan Fiqh & Usul, Akademi Pengajian Islam, UM	IPPH
8-9	Rheometer TA Instruments ARG-2 training	IPPH
9	"Taklimat kandungan alcohol dalam minuman dan makanan"	De Palma Hotel, Ampang
11	Forum Konsulatif Kebangsaan Piawaian Halalan-Toyyiban	Kompleks Masjid Wilayah
2	Temperature modulated DSC training	IPPH
12	Visit – TPM Biotech Sdn Bhd	TPM Biotech Sdn Bhd
22	Video clip shooting for Tokoh Maulidur Rasul 1431H	IPPH
24	"Majlis Taklimat Pelajar Siswazah Baharu Semester 2" 2009/2010	IPPH
25	Halal Research Forum	IPPH
26	"Majlis Anugerah Maulidur Rasul"	Masjid Putra, Putrajaya
26-28	Pameran 1 Malaysia 1 Halal	Masjid Negara
MARCH 2010		
2	CCM 2nd Halal Awareness Seminar	Shah Alam Convention Center
9	Klinik e-latihan	IPPH
	Majlis Perdana Perkhidmatan Awam Kesebelas (MAPPA XI)	PICC Putrajaya
30	Video shooting and interview for UPM R&D	IPPH
31	Visitor - Peserta Inaugural IDB Global Islamic Leadership Programme	IPPH
APRIL 2010		
1	Majlis Profesor Negara dan Higher Institution Centre of Excellent (HiCOE)	PICC Putrajaya
2	Roadshow UPM Holdings	IPPH
6	Visit – CCM Pharmaceuticals Sdn Bhd	Bangi, Selangor
7	Visitor – Jabatan Pengajian Politeknik	IPPH
16	Visitor - UiTM	IPPH
22	Audit Pemeriksaan Keselamatan dan Kesihatan Pekerjaan	IPPH

Visitors



1



2



3



4

1) Visitors from the Department of Chemistry Malaysia - 5/2/2010

3) Visitors from the Department of Fiqh and Usul Academy of Islamic Studies, Universiti Malaya - 5/2/2010

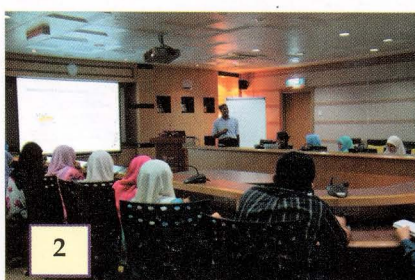
2) Group from Islamic Development Bank (IDB) - 9/2/2010

4) Visitors from Department of Higher Education, KPT - 7/4/2010

Seminar / Workshop



1



2



3

1) International Symposium on Halal Science and Management - 21-22 /12/2009

2) Rheometer TA Instruments ARG-1 Training - 8-9 /2/2010

3) Principle in Analytical Chemistry Seminar Research Methodology Course - 20/1/2010

4) Visit - CCM Pharmaceuticals Sdn Bhd - 6/4/2010

5) "Bengkel Penulisan Saintifik", Port Dickson - 14 - 16/5/2010



4



5

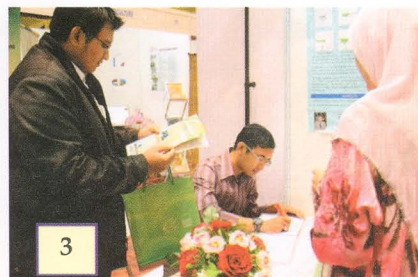
Achievements



1

1) Prof. Dr. Yaakob Che Man receiving the Maulidur Rasul Award during Maulidur Rasul celebration at Putra Mosque, Putrajaya - 26/2/2010

Visitors



1) Visit by the Minister of Agriculture and Agro-Based Industries – 8/2/2010

3) Postgraduate Fair 2010, Dewan Besar – 11-13/3/2010

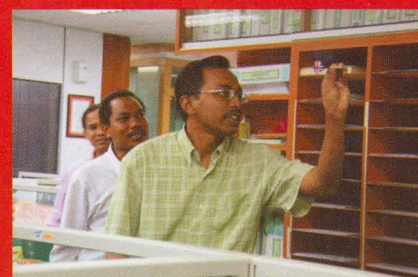
2) 1 Malaysia 1 Halal exhibition, National Mosque – 26-28/2/2010

4) "Bersama Pakar Pertanian", Universiti Putra Malaysia exhibition, Tanjong Karang, Selangor – 8-9 /5/2010



STAFF ACTIVITIES

**IPPH Sport >>
Month**



**<< UPM Staff
Sport
Tournament**

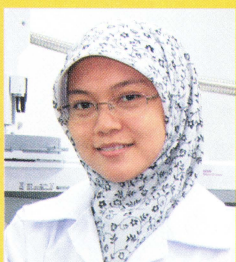
STUDENT'S PROFILE



Name : A.Rohman

Programme : PhD (Halal Food Analysis)

Research Title : Application of FTIR Spectroscopy for Analysis, Authentication and Monitoring Oxidative Stability of selected edible fats and oils.



Name : Dias Indrasti

Programme : MSc (Halal Food Analysis)

Research Title : Application of a comprehensive two dimensional gas chromatography for analysis of lard



Name : Farah Azura bt Khalil

Programme : MSc (Halal Food Analysis)

Research Title : Identification of the source of alcohol in Food and Beverage using comprehensive two Dimensional Gas Chromatography Time of Flight Mass Spectrometer .



Name : Nurjuliana bt Mokhtar

Programme : MSc (Halal Food Analysis)

Research Title : Development and Optimization of electronic nose for detection of pork and lard in food products.



Name : Siti Aisyah binti Mohd Bakhori

Programme : MSc (Halal Food Analysis)

Research Title : Purification of Glucomannan from Konjac Tubers and Utilization for Halal capsule production.



Name : Mohd Firdaus bin Mohd Yaacob

Programme : MSc (Halal Food Management)

Research Title : The Relationship of Consumer Awareness, Perception and Attitude Towards Purchase Intention of Halal Cosmetic Products.

ORGANIZATION CHART

Halal Products Research Institute

Universiti Putra Malaysia

