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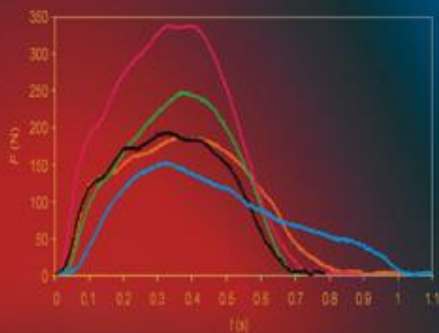


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PEMBANGUNAN ROKET MOTOR BERSAIZ KECIL

Mohammad Nazri Mohd. Jaafar
Wan Khairuddin Wan Ali
Rizalman Mamat



PEMBANGUNAN ROKET MOTOR BERSAIZ KECIL

Penyelidikan ke atas motor roket berbahan dorong pepejal meliputi kerja-kerja reka bentuk, fabrikasi, dan pengujian motor roket. Motor roket berskala kecil ini direka bentuk bersesuaian dengan jenis propelan yang dibangunkan, iaitu propelan roket pepejal berasaskan kalium nitrat. Antara sistem sokongan yang digunakan untuk membantu proses menganalisis prestasi motor roket termasuklah sistem pemasa automatik, pencucuh elektrik kawalan jauh, rig ujian daya tujuh, dan sistem perolehan data (DAS). Motor roket direka bentuk daripada keluli lembut sepenuhnya untuk pengujian daya tujuh statik. Hasil ujian tersebut, beberapa parameter penting yang mencirikan prestasi propelan diperolehi. Daya tujuh yang dihasilkan oleh motor roket diperolehi secara langsung daripada ujian ini. Hasil ujian daya tujuh statik menunjukkan bahawa daya tujuh maksimum didapati sangat bergantung pada nisbah kandungan bahan pengoksida-bahan api bagi propelan. Propelan yang dihasilkan dengan nisbah campuran bahan pengoksida-bahan api (65/35) didapati menghasilkan daya tujuh maksimum melebihi 300 N dengan catatan jumlah denyut 150.04 Ns dan denyut tentu 154.8 s. Data prestasi yang diperolehi daripada ujian juga mendapati bahawa motor roket ini mempunyai ciri-ciri prestasi yang baik dan berpotensi untuk dibangunkan sebagai motor roket bagi sebuah kenderaan pelancar.



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KANDUNGAN Contents?

Acknowledgment?

Transform?

<i>Abstrak</i>	v
<i>Kandungan</i>	vii
<i>Senarai Jadual</i>	ix
<i>Senarai Rajah</i>	xi
BAB 1 PENGENALAN	1
1.1 Pendahuluan	1
1.2 Pernyataan Masalah	2
1.3 Objektif Penyelidikan	3
1.4 Skop Penyelidikan	3
1.5 Kaedah Penyelidikan	3
BAB 2 KAJIAN LITERATUR	7
2.1 Sejarah Rocket	7
2.2 Klasifikasi Rocket	9
2.2.1 Rocket Propelan Pepejal	10
2.2.2 Rocket Propelan Cecair	10
2.2.3 Rocket Propelan Hibrid	11
2.3 Rocket Propelan Pepejal	12
2.4 Reka Bentuk Motor Rocket	14
2.5 Pengukuran Daya Tujah	15

viii <i>Kandungan</i>	
2.5.1 Rig Ujian Melintang	17
2.5.2 Rig Ujian Menegak	19
2.5.3 Rig Ujian Condong	20
BAB 3 METODOLOGI	21
3.1 Reka Bentuk Motor Rocket	21
3.2 Penyediaan Rig Ujian Daya Tujah	23
3.2.1 Tapak Ujian	23
3.2.2 Troli	24
3.2.3 Sel Beban	25
3.3 Kaedah Ujian	31
3.4 Ujian Kadar Pembakaran	39
3.5 Pengaruh Tekanan Mampatan terhadap Kadar Pembakaran	41
3.6 Gaya Laku Pembakaran Propelan	42
BAB 4 KEPUTUSAN DAN PERBINCANGAN	45
4.1 Pemerhatian	45
4.2 Ujian Daya Tujah	49
4.2.1 Propelan Corak Silinder Padu	50
4.2.2 Propelan Corak Silinder Berlubang	52
4.3 Keputusan	54
4.3.1 Ujian Daya Tujah Statik Propelan Corak Silinder Padu	54
4.3.2 Ujian Penilaian Motor Balistik (BEM)	55
4.3.3 Ujian Daya Tujah Statik Propelan dengan Beberapa Nilai Nisbah Campuran Bahan Pengoksida-Bahan Api	61
BAB 5 KESIMPULAN DAN CADANGAN	71
5.1 Kesimpulan	71
5.2 Cadangan Kajian Masa Hadapan	72
PENGHARGAAN	75
RUJUKAN	77
INDEKS	79



Contoh- UTM Monograph

Ringkaskan Tajuk

NOVEL SOLID-PHASE MICROEXTRACTION FIBER Coating for the Forensic Detection of Accelerants in Arson Samples

Umi Kalthom Ahmad



Pemilihan Tema Kulit
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NOVEL SOLID-PHASE MICROEXTRACTION FIBER Coating for the Forensic Detection of Accelerants in Arson Samples

A crucial challenge in the scientific investigation of arson is the ability to uniquely detect accelerants. An improvement in accelerant extraction came with the development of headspace solid-phase microextraction (H-SPME) technique. The extraction is based on the enrichment of components on an adsorbent coated fused silica fiber. A number of adsorbents are commercially available, however some analytical methodologies might demand special coatings that have a particular selectivity towards specific analytes. Generally accepted drawbacks of conventional adsorbents are a relatively low thermal stability (200-270 °C) which leads to incomplete sample desorption and sample carry-over problem, short lifetime (40-100 times), poor solvent stability and expensive. As a preliminary study, a lab-made SPME adsorbent prepared by sol-gel method, containing [*n*-octyltriethoxysilane C₈-TEOS): methyltrimethoxysilane (MTMOS), (1:1)], was evaluated against commercially available fiber for the determination of accelerants in arson samples, with the aim of improving the quality of ignitable liquid residue analysis. The lab-made fiber exhibited good thermal stability (up to 300 °C), good selectivity for hydrocarbon compounds, cost effective, and easily prepared. Compared with commercial polydimethylsiloxane/divinylbenzene (PDMS/DVB) fiber, the lab-made C₈-coated fiber yielded shorter equilibration time, higher extraction capability and longer lifetime (over 200 times) hence, it can be a good alternative SPME fiber for arson accelerant detection analysis.



Umi Kalthom Ahmad received her B.Sc (Hons) in Chemistry with Environmental Chemistry from University College Swansea, United Kingdom in 1982; M.Sc Forensic Science from Strathclyde University, Scotland in 1986; and Ph.D in Chemistry from UTM in 1994. She first started working as a Chemist in Jabatan Kimia Malaysia, Petaling Jaya before joining UTM in 1983. Her area of specialization includes Forensic Science, Chromatography, and Environmental Chemistry. She has written several chemistry text books and was a member of the Editorial Board of Jurnal Teknologi C. She is an author of the book entitled *Pengenalan Sains Forensik* published by Penerbit UTM Press. She is a member of Institut Kimia Malaysia (IKM) and International Water Association (IWA). She is currently the program coordinator for the M.Sc Forensic Science course in UTM which started in July 2008, the first of its kind to be offered in Malaysia as well as in the Asian region.

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CONTENTS

Abstract
 Abstrak
 Contents
 Tables
 Figures
 Symbols/ Abbreviations
 Appendices

CHAPTER 1 INTRODUCTION

- 1.1 Background
- 1.2 Purpose
- 1.3 Objectives

CHAPTER 2 LITERATURE REVIEW

- 2.1 Accelerants
- 2.2 Sol-gel process
- 2.3 Accelerant detection
- 2.4 Accelerant detection using sol-gel process
- 2.5 Accelerant detection using sol-gel process
- 2.6 Accelerant detection using sol-gel process
- 2.7 Accelerant detection using sol-gel process
- 2.8 Accelerant detection using sol-gel process
- 2.9 Accelerant detection using sol-gel process
- 2.10 Accelerant detection using sol-gel process
- 2.11 Accelerant detection using sol-gel process

x Contents

- 2.3 T
- 2.4 S
- 2.5
- 2.6
- 2.7
- 2.8
- 2.9
- 2.10
- 2.11
- 2.12
- 2.13
- 2.14
- 2.15
- 2.16
- 2.17
- 2.18
- 2.19
- 2.20
- 2.21
- 2.22
- 2.23
- 2.24
- 2.25
- 2.26
- 2.27
- 2.28
- 2.29
- 2.30

CHAPTER 3 EXPERIMENTAL

- 3.1 I
- 3.2 C
- 3.3 A
- 3.4 I
- 3.5 P
- 3.6 P
- 3.7 P
- 3.8 P
- 3.9 G
- 3.10 P
- 3.11 H
- 3.12 P

CHAPTER 4 RESULTS AND DISCUSSION

- 4.1 Introduction
- 4.2 Characterization of Sol-gel Process
 - 4.2.1 Selectivity
 - 4.2.2 Extraction Efficiency
 - 4.2.3 Lifetime
 - 4.2.4 Thermal Stability
 - 4.2.5 Scanning Electron Microscopy Analysis
 - 4.2.5.1
 - 4.2.5.2
 - 4.2.5.3
- 4.3 Optimization of Sol-gel Process
 - 4.3.1 Optimization of Sol-gel Process
 - 4.3.2 Possibility of Coating
- 4.4 Optimization of Sol-gel Process
 - 4.4.1 Optimization of Sol-gel Process
 - 4.4.2 Optimization of Sol-gel Process
 - 4.4.3 Optimization of Sol-gel Process
- 4.5 Validation of the Sol-gel Process
 - 4.5.1 Accuracy of Sol-gel Process

xii Contents

- 4.5.2 Detection Limits of Accelerants 68
- 4.5.3 Calibration Graph of Target Compounds 68
- 4.6 Analysis of Simulated Arson Samples using C₈-coated Fiber 70
 - 4.6.1 Selectivity for Accelerants 70
 - 4.6.2 Extraction Capability for Accelerants 74

CHAPTER 5 CONCLUSIONS AND FUTURE DIRECTIONS

- 5.1 Conclusions 77
- 5.2 Future Directions 79

- ACKNOWLEDGEMENT 83
- REFERENCES 85
- APPENDICES 93
- INDEX 97





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Scope

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CALCULATION OF THE INTENSITY OF THERMAL RADIATION FROM LARGE FIRES

*First Report of the Major Hazards Assessment
Panel — Thermal Radiation Working Group*

Penulis

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PREFACE

The Major Hazards Assessment Panel was established in 1982 to provide a means for scientists and engineers, as professional people rather than as representatives of companies or other organisations, to comment on matters of current interest in the field of major chemical hazards. The full Panel, about sixty people, never meets. Instead a small Advisory Group selects subjects for study from among those suggested by members of the Panel, and Working Parties are set up to prepare reports on these subjects. The draft reports are sent to the full membership for comment.

The Institution of Chemical Engineers helped to set up the Panel and provides secretarial services but the Panel is not responsible to the Institution and it is not a committee of the Institution. The authority of the Panel's reports is due solely to the professional reputation of its members, particularly the members of the Working Parties.

This Working Group, on thermal radiation, was established by the Major Hazards Assessment Panel.

Membership of the Working Group

Members served on the Working Group in a private, non-representational capacity. Their principal professional interests are:

- R. P. Pape (Risk assessment for regulation and control);
- N. F. Scilly (Assessment of flammable and explosive substances);
- F. K. Crawley (Risk assessment for the process industries);
- I. Hymes (Risk assessment for the process industries);
- J. Moorhouse (Combustion processes and behaviour of fires);
- J. A. Eyre (Combustion of large spillages of flammables);
- B. W. Platts (Medical aspects of accidents);
- E. S. Johnson (Planning control of land use).

Penulis/
Penyumbang

CONTENTS

Preface

1.	INTRODUCTION; TERMS OF REFERENCE	1
2.	CLASSIFICATION OF FIRES	2
2.1	SCOPE	2
2.2	CLASSIFICATION OF FIRES	2
2.3	SIGNIFICANCE OF VOLATILITY	3
3.	METHODS FOR THE CALCULATION OF THERMAL RADIATION	5
3.1	POINT SOURCE METHOD	5
3.2	SOLID FLAME MODEL	5
3.3	VOLUME EMITTER MODEL	8
4.	APPLICATION OF METHODS TO DIFFERENT TYPES OF FIRES	9
4.1	POOL FIRES	9
4.2	JET FIRES	12
4.3	FLASH FIRES	13
4.4	FIREBALLS	14
5.	CONCLUSIONS	16
	SYMBOLS AND UNITS	18
	REFERENCES	20

Symbol &
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Format Monograf

Fungsi Editor

Add Literature
Review

Format

Improve style of
Writing

CONTENTS

1.	INTRODUCTION; TERMS OF REFERENCE	1
2.	CLASSIFICATION OF FIRES	2
2.1	SCOPE	2
2.2	CLASSIFICATION OF FIRES	2
2.3	SIGNIFICANCE OF VOLATILITY	3
3.	METHODS FOR THE CALCULATION OF THERMAL RADIATION	3
3.1	POINT SOURCE METHOD	5
3.2	SOLID FLAME MODEL	5
3.3	VOLUME EMITTER MODEL	8
4.	APPLICATION OF METHODS TO DIFFERENT TYPES OF FIRES	9
4.1	POOL FIRES	9
4.2	JET FIRES	12
4.3	FLASH FIRES	13
4.4	FIREBALLS	14
5.	CONCLUSIONS	18
	SYMBOLS AND UNITS	18
	REFERENCES	20

Bahagian Awalan?

INTRODUCTION

Methodology

Results & Discussion

Conclusion

Bahagian Akhiran



1. INTRODUCTION

Prakata

This is the first report of the Working Group on Thermal Radiation of the Major Hazards Assessment Panel. .

The terms of reference are:

“to consider what levels of thermal radiation (from continuous fires, flash-fires and BLEVE’s) would be significant in an emergency at places to which the public have access, taking the probability of the emergency into account, and how the radiation levels should be calculated.”

The Working Group will report in three stages as follows:

- i. A description of various types of fire and methods for the calculation of the intensity and duration of thermal radiation in relation to the distance from the fire.
- ii. The relationship between the amounts of thermal radiation received by people and the consequent injury levels including the risk of death.
- iii. Factors influencing the choice of thermal radiation dose thresholds for the purposes of: emergency planning, control of public access and siting of installations.

intro

objective

2. TYPES OF FIRE

scope

2.1 SCOPE

This paper is mainly about pool fires which have the capacity to cause injury by the radiation of intense heat beyond the immediate flame boundary. Methods are described which may be used to calculate the intensity of thermal radiation at a given position in relation to a particular type and size of fire. For the purpose of this paper, no judgement is made about the probability of any particular fire situation. The paper begins with general comments on calculation methods, then it describes their application to different types of fire.

Fires may involve solids (eg wood piles, buildings etc); liquids (eg oil, petrol, alcohol etc) or gases (eg natural gas, process gases etc). In general the volatility of the fuel is one of the key parameters which determine the severity and speed of development of the fire (see Section 2.3).

Fires involving solids can, under some circumstances, present a significant hazard from thermal radiation outside the confines of the fires. However, such fires are usually relatively slow to build up, thus giving warning time; and the output of radiant heat is moderate, so that the range of the thermal radiation hazard is limited. Consequently, solid fires are not considered to constitute "Major Hazards" in the present context and are not included in this report. (Note: certain solids which are used as propellants for military applications are exceptionally fast-burning and these constitute special cases which are not covered here. Also, events such as the Bradford City Football Club fire show that warning-times may be short if a solids fire can spread over a wide area.)

The most severe types of fires are those involving highly flammable and highly volatile substances such as LNG, LPG or gases under pressure. Other flammable liquids may, however, give similar hazards if their volatility is increased by them being at elevated temperatures.

Any explosion effects associated with fires are not dealt with in this report. A companion paper on such effects has recently been published¹.

2.2 CLASSIFICATION OF FIRES

Release of liquids or gases from containment can give rise to a number of types of fires. These may be classified as pool fires, jet fires, flash fires, fireballs and firestorms.

i. POOL FIRE

A pool fire occurs when an accumulation of liquid in a pool on the ground or on water is ignited. A steadily burning fire is rapidly achieved since the fuel vapour required to sustain the flames is provided by evaporation of the liquid by the heat from the flames. For liquefied gases significant heat transfer from the surface on which the pool is

formed also contributes to the vaporisation of the fuel. The rate of consumption of fuel is dependent upon properties of fuel such as latent heat, and is equivalent to a pool depth regression in the range 6 to 13 mm/minute. The flames from pool fires behave entirely under the influence of their own buoyancy and are easily displaced by the wind.

ii. JET FIRE

A jet fire occurs when a flammable liquid or gas is released from a puncture or pipe into free air. The pressure of the release serves to generate a long flame which is stable under most conditions. Jet flames are largely unaffected by the wind. The duration of the fire is independent of the fire characteristics but is dependent on the release-rate and volume of the source. For a liquid or a two-phase jet a part of the liquid may "rain-out" of the jet giving rise to a pool fire.

iii. FLASH FIRE

A flash fire occurs when a cloud of flammable gas in a mixture with air is ignited. The shape of the fire is dependent upon the shape of the flammable cloud and the position of the ignition source. The fire is usually of short duration as the flame travels rapidly through the cloud. The velocity of the flame, which is usually a few metres per second, is dependent upon the gas concentration in the cloud and on the wind speed. Flash fires often serve as a way by which a remote source of ignition can lead to a jet or pool fire at the point of release. In certain circumstances it is possible for a flame to accelerate to a very high velocity, thus producing explosion effects¹. This aspect is outside the scope of this document.

iv. FIREBALL

A fireball occurs when a quantity of flammable liquid or gas is suddenly released and is immediately ignited. The fuel is rapidly burnt as a spherical fireball which rises due to the initial momentum of the release and the high buoyancy of the hot flames. The initial fuel mass determines the fireball size and duration, and large fireballs are little affected by the wind.

Fireballs are known to arise following a BLEVE (boiling liquid expanding vapour explosion) in which fire induces heating and the subsequent failure of a pressurised storage vessel.

v. FIRESTORMS

In certain conditions, fire covering a very large area can produce a firestorm effect by inducing convection-driven winds which brighten the fire and propagate it by carrying sparks. There may also be significant damage and propagation by thermal radiation in such conditions. The scale of the phenomenon seems to exceed that of most installations, so it is not discussed further here.

2.3 THE SIGNIFICANCE OF VOLATILITY

The magnitude of the thermal radiation arising from a fire depends on the rate and mass of gas or vapour released or produced by vaporisation of a liquid spill. For a liquid, volatility is a key factor in determining the type of fire, its

significance

Chap 2

3. ~~METHODS FOR THE~~ CALCULATION OF THERMAL RADIATION

Three different types of method are available for calculating the thermal radiation levels at selected positions outside the flame envelope. Each method is a different level of complexity and each is suited to different types of applications. The major differences in method are reflected in the description of the source of radiation.

3.1 Point Source Method

The simplest way of estimating the thermal radiation levels from a fire is termed the point source model. In this technique a selected fraction f of the total heat of combustion is assumed to radiate in all directions from a single point. Incident flux I , at any distance d , is therefore given by

$$I = \frac{fH_c}{4\pi d^2}$$

where H_c is the heat of combustion per unit time. Values of f can be selected for different types of fires (see below).

The simplicity of the point source method is such that specific allowance is not normally made for the effects of atmospheric attenuation of thermal radiation by the atmosphere between the flame and receiver (see below). This is because it is normally inherently allowed for in the values selected for f . The advantages of this technique are its ease of use and its wide range of applicability.

A disadvantage is that for positions close to a flame (eg within 2 pool diameters in the case of pool fires) the incident radiation levels are underestimated. This may be particularly important for designing protective systems, planning fire-fighting response etc. Also precise values of f are not known for all types of fire, fuel types and size of fire and hence the accuracy is not high unless carefully tuned using experimental data. This has been done for some specific cases.

More refined point source methods have been developed for some special situations. See, for example, API 521².

3.2 SOLID FLAME MODEL

Some of the shortcomings of the point source model can be overcome using a solid flame model which assumes that the flame can be represented by simple solid geometrical shapes such as a cylinder, sphere or cone etc and that the radiation is emitted from its surface. Consequently, it allows a better assessment of the thermal

4. ~~APPLICATION OF METHODS~~ TO DIFFERENT TYPES OF FIRES

Analysis Types of Fire

4.1 POOL FIRES

A pool fire results when a pool of liquid fuel is ignited. The pool may be contained, for example, in a tank or bund, or spreading, as for example from a spill on to a flat surface such as concrete or water. In the latter case, the fire will be short-lived unless it is continuously fed with fuel, since the 'pool' will be very shallow. Another possibility is a spill of liquid into a trench or channel which may limit the spread.

Application of the solid flame model to calculate thermal radiation from a pool fire requires that the flame shape be approximated to a simple geometry to facilitate the calculation of a view factor. In the discussion below it is assumed that the pool position is known; it is beyond the scope of this report to discuss methods of calculating the spread of unconstrained pools.

The methods described in this section can be used for pools of liquefied gases such as LNG or LPG, as well as higher-boiling flammable liquids. With spills of liquefied gases the formation of a large quantity of vapour may occur before ignition, giving the possibility of a flash fire or even a vapour-cloud explosion. This section deals only with the combustion of the residual pool of liquid.

i. FLAME SHAPE CORRELATION

The shape most commonly chosen to represent a fire on a circular or low aspect ratio rectangular pool is a tilted cylinder. However, there are several possible variations on the cylindrical theme including an oblique cylinder of circular cross-section, a tilted cylinder of circular cross-section and an oblique cylinder of elliptical cross-section.

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To calculate the length of the flame l above the pool surface, correlations have been developed based on the size of the pool D (the pool diameter in the case of a circular pool or an equivalent diameter for noncircular pool) and the physical properties of the fuel. One of the most widely used correlations is that developed by Thomas³:

$$\frac{l}{D} = 42 \left(\frac{\dot{m}}{\rho_a \sqrt{g D}} \right)^{0.6}$$

where \dot{m} is the mass burning rate of the fuel
 ρ_a is the ambient air density
 g is the gravitational constant



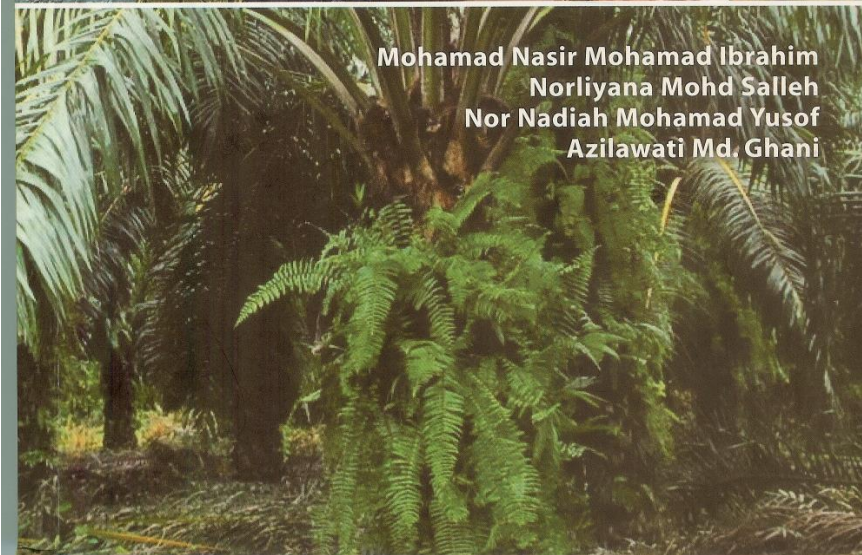
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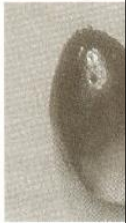




KANDUNGAN

SENARAI RAJAH	vi
SENARAI JADUAL	x
PRAKATA	xi
SENARAI SINGKATAN	xiv
1 INDUSTRI KELAPA SAWIT DI MALAYSIA	1
2 LIGNIN	17
3 PEMPOLIMERAN POLI-LIGNIN STIRENA	38
4 PEMISAHAN VANILIN DARIPADA LIGNIN	54
5 LIGNIN SEBAGAI PENJERAP LOGAM BERAT	68
6 LIGNIN SEBAGAI AGEN PENGEMULSI	79
7 RESIN LIGNIN FENOL FORMALDEHID SEBAGAI PEREKAT KAYU	92
8 FERUM-TANIN-LIGNIN SEBAGAI PENIPIS LUMPUR GERUDI	111
9 LIGNIN SEBAGAI AGEN PENUKAR KARAT	136
10 MASA DEPAN INDUSTRI LIGNIN DARIPADA KELAPA SAWIT	157
BIBLIOGRAFI	161
ISTILAH	171
BIODATA PENGARANG	173
INDEKS	175

bermutu tinggi
sentiasa menda



- Tebal tem
- Tidak me
- Kandung
- Dikenali

Rajah 1.1 Per

Perladangan

Perladangan ke
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Sawit Malaysia
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kawasan penan
(MPOB, 2006).

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Sumber

Perkembangan industri
tidak dapat dinafikan
negara. Berdasarkan se
yang terkini, Malaysia
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Nigeria sebanyak 6%,
Cote d'Ivoire, Ecuado
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berjaya menyediakan
sekali gus menjadi tula

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Lambakan sisa TKKS
pelupusan dan hal ini
daripada abu dan wap
pencemaran udara se
masalah pelupusan sisa
idea dengan mengar
menguruskan bahan b
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Inisiatif lain ialah me
bumbung rumah, papa

dan teknologi dalam penyelidikan hasil buangan kelapa sawit membolehkan TKKS kini diproses untuk dijadikan kertas.

Bahan Buangan Lignoselulosik daripada TKKS

Industri perladangan kelapa sawit merupakan industri pertanian terpenting di Malaysia. Hal ini dibuktikan dengan keluasan kawasan penanaman kelapa sawit yang kini mencecah 4.2 juta hektar. Penghasilan minyak kelapa sawit mentah pula telah meningkat sehingga 15.9 juta tan setahun. Sehubungan itu, industri perladangan kelapa sawit telah menghasilkan bahan buangan lignoselulosik yang banyak.

TKKS merujuk pada tandan buah kelapa sawit yang telah ditanggalkan buahnya seperti yang ditunjukkan dalam Rajah 1.2. Secara amnya, TKKS diperoleh melalui proses peleraian buah kelapa sawit daripada tandannya yang dilakukan dengan menggunakan mesin penanggal buah seperti yang ditunjukkan dalam Rajah 1.3.



Rajah 1.2 TKKS biasanya dilupuskan secara pembakaran dan abu yang terhasil dijadikan baja organik

Sumber: Ihsan Lenga Palmoil Industries Sdn. Bhd.



Monograph

Major hazards monograph

THERMAL RADIATION: PHYSIOLOGICAL AND PATHOLOGICAL EFFECTS

Ian Hymes
Warren Boydell
Belinda Prescott

QC
331
H95
1996

IChem^E

Pemilihan Tema Kulit
Buku

This IChemE monograph is about what happens to the human body when it is exposed to thermal radiation from a major accident. It goes hand in glove, so to speak, with the earlier monograph (1989) on thermal radiation which explains how to calculate intensity of radiation from such large fires. The two form an all-round up-to-date review of value to anyone with responsibility for foreseeing the hazard becoming a major superficial blistering to the skin. This monograph discusses the properties of skin, pathological damage and the prognosis of victims as well as data on the complications caused by burning clothing. There is also a section on ways of attenuating and mitigating thermal radiation. Six appendices provide a wealth of further data. The contents represent work carried out by AEA Technology for the UK Health and Safety Executive. The series of Major Hazards Monographs is published by IChemE on behalf of the Major Hazards Assessment Panel, an independent group of some sixty professional scientists and engineers working in this field.

snopsis

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CONTENTS

PREFACE

1. INTRODUCTION

- 1.1 BACKGROUND TO THIS MONOGRAPH
- 1.2 GENERAL EFFECTS OF FIRES AND FIREBALLS
- 1.3 RANGE TO BLISTERING OF SKIN FROM A FIREBALL 20 t LPG
- 1.4 RANGE TO THIRD DEGREE BURNS TO BARE SKIN INVOLVING 20 t LPG
- 1.5 PHYSIOLOGICAL IMPLICATIONS OF FIREBALLS
- 1.6 GENERAL POINTS ARISING FROM THE 20 t STUDY
- 1.7 THE SPANISH CAMP-SITE DISASTER (SEE APPENDIX 5)
- 1.8 THE LOWELL GAS CO. INCIDENT (SEE APPENDIX 6)

2. BASIC PRINCIPLES OF THERMAL RADIATION

- 2.1 HEAT RADIATION
- 2.2 BEHAVIOUR OF MATERIALS TOWARDS INCIDENT RADIATION

3. EFFECTS OF THERMAL RADIATION ON THE HUMAN BODY

- 3.1 PHYSIOLOGICAL EFFECTS
- 3.2 PATHOLOGICAL EFFECTS

4. SKIN: ITS PROPERTIES AND BIOLOGICAL RESPONSE

- 4.1 SKIN COMPOSITION
- 4.2 PHYSICAL DIMENSIONS OF WHOLE SKIN
- 4.3 THERMAL CONTROL
- 4.4 THERMAL CONDUCTIVITY OF SKIN
- 4.5 OTHER THERMAL AND OPTICAL PROPERTIES OF SKIN
- 4.6 SKIN PAIN THRESHOLDS

5. PATHOLOGICAL DAMAGE FROM THERMAL RADIATION

- 5.1 DEFINITIONS OF DAMAGE
- 5.2 THRESHOLD BURNS

- 5.3 MILD SECOND DEGREE INJURY: THRESHOLD BLISTER
- 5.4 DEEP SECOND AND THIRD DEGREE BURNS
- 5.5 CONCLUSIONS FROM APPENDIX 1

6. PROGNOSIS OF BURN INJURY VICTIMS

- 6.1 METHOD OF ANALYSIS
- 6.2 'ACCEPTABLE' CRITERION FOR POTENTIALLY EXPOSED PEOPLE IN THE ENVIRONS OF A MAJOR HAZARD SITE
- 6.3 CONCLUSIONS DERIVED FROM REFERENCE 22

7. APPLICATION OF BURN DATA TO CERTAIN MAJOR THERMAL RADIATION HAZARD SITUATIONS

- 7.1 DISTANCE TO VARIOUS DEGREES OF BURN INJURY
- 7.2 INJURY CRITERION 1: 1% LETHALITY USING PROBIT EQUATION AFTER EISENBERG
- 7.3 CALCULATION OF EXPOSURE TIMES AND HEAT FLUXES NECESSARY TO PRODUCE DOSE V
- 7.4 INJURY CRITERION 2: 50% LETHALITY USING PROBIT EQUATION AFTER EISENBERG
- 7.5 INJURY CRITERION 3: DISTANCE TO BLISTERING OF BARE SKIN
- 7.6 INJURY CRITERION 4: DISTANCE TO SECOND AND THIRD DEGREE BURNS

8. THE SIGNIFICANCE OF CLOTHING IN EXPOSURE TO THERMAL RADIATION

- 8.1 THE BEHAVIOUR OF CLOTHING TEXTILES TOWARDS THERMAL RADIATION
- 8.2 FABRIC FAILURE MODES

9. IGNITION AND MELTING CHARACTERISTICS OF COMMON APPAREL FABRICS

- 9.1 EVERYDAY TEXTILES
- 9.2 FABRIC SURVIVAL

10. NATURE OF BURN INJURY FROM BURNING CLOTHING

- 10.1 EXPOSEE BEHAVIOUR
- 10.2 HEAT GENERATED BY LISTED TEXTILE FABRICS
- 10.3 HEAT TRANSFER MECHANISMS: BURNING FABRICS TO SKIN
- 10.4 INFLUENCE OF FABRIC WEIGHT

11. ATTENUATION AND MITIGATION OF THERMAL RADIATION BY VARIOUS MEANS

- 11.1 GLASS
- 11.2 WATER SPRAY
- 11.3 'WETTING DOWN' OF CLOTHING

- 11.4 WIRE MESH 72
- 11.5 SOLID BARRIERS 72
- 11.6 PREWETTING AND PRECOOLING THE SKIN 73
- 11.7 ATMOSPHERIC TRANSMISSIVITY 73

12. CONCLUSIONS DRAWN FROM CHAPTERS 9, 10 AND 11 76

13. REFERENCES 78

APPENDIX 1 — THE PRODUCTION OF DEEP SECOND AND THIRD DEGREE BURNS 81

APPENDIX 2 — CALCULATION OF THERMAL OUTPUT OF RADIATING SOURCES 85

APPENDIX 3 — DETERMINATION OF THE RANGE TO BLISTERING OF SKIN FOR A FIREBALL INVOLVING 20 t LPG 88

APPENDIX 4 — CRITERIA FOR CAUSING SECOND AND THIRD DEGREE BURN INJURIES 93

APPENDIX 5 — CASE HISTORY 1: THE SPANISH CAMP-SITE DISASTER 97

APPENDIX 6 — CASE HISTORY 2: THE LOWELL GAS COMPANY INCIDENT 110

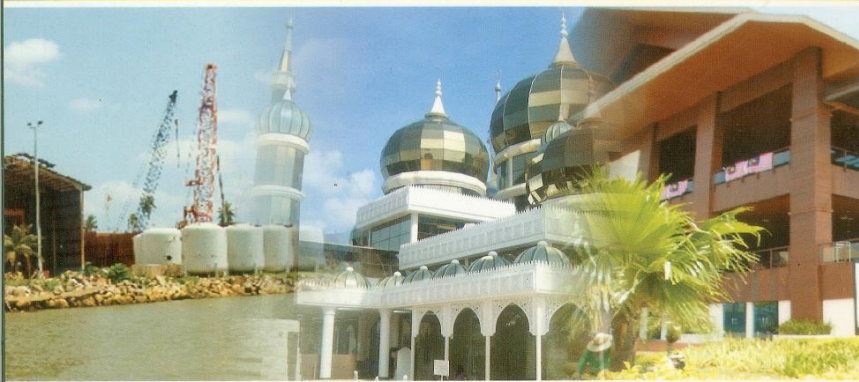
INDEX 121

Transform



Contoh-Buku Ilmiah Penyelidikan

PEMBANGUNAN TANAH & HALANGANNYA



MD. SAID @ MOHD. ZAID ABDULLAH
ISMAIL OMAR



PEMBANGUNAN TANAH & HALANGANNYA

Pembangunan tanah merupakan penggerak utama pembangunan negara. Namun, pembangunan tanah melibatkan proses yang rumit. Antara puncanya adalah terdapat pelbagai halangan yang boleh menyebabkan pembangunan tanah tidak dapat dijalankan. Secara umum, halangan pembangunan tanah boleh dikategorikan mengikut faktor sosial, ekonomi, dan perundangan. Halangan pembangunan boleh juga dikategorikan secara faktor luaran dan dalaman. Kajian literatur menunjukkan secara amnya halangan pembangunan tanah boleh dibahagikan kepada halangan luaran dan halangan dalaman. Kajian literatur tentang faktor dalaman menumpu pada sikap pemilik dan pihak yang berkepentingan. Faktor luaran pula termasuklah undang-undang pembangunan tanah yang berkaitan. Selain faktor luaran dan dalaman, kehendak dan keperluan penduduk dalam memajukan tanah mereka perlu diberi perhatian. Kajian empirik yang dijalankan di Pulau Duyong, Kuala Terengganu menunjukkan malamat kerajaan untuk melihat pembangunan tanah yang pesat di atas tanah yang diberi milik tidak kesampaian kerana halangan luaran dan sikap pemilik serta penduduk setempat yang dipengaruhi oleh persepsi, motif, dan strategi mereka. Penduduk juga ingin mengekalkan persekitaran sedia ada sebagai keperluan penduduk setempat.

Buku ini sesuai sebagai rujukan kepada pelajar di institusi pengajian tinggi terutamanya dalam bidang alam bina, pembinaan, bangunan, seni bina, ukur tanah, ukur tanah, penilaian harta, pentadbiran dan pembangunan tanah, perancangan bandar, dan perumahan serta pembaca umum yang berminat untuk meningkatkan pengetahuan dalam bidang pembangunan tanah.



Md. Said @ Mohd. Zaid Abdullah ialah jurujuk tanah berlesen yang memiliki firma ukur tanah Smart Survey Consultant. Beliau juga merupakan ahli Royal Institute of Chartered Surveyors (RICS). Beliau juga aktif dalam PEJUATA. Beliau berkelulusan Ijazah Sarjana Muda Ukur Tanah, Ijazah Sarjana Sains Pentadbiran dan Pembangunan Tanah, dan Ph.D dalam bidang pentadbiran dan pembangunan tanah, semuanya dari Universiti Teknologi Malaysia.



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KANDUNGAN

<i>Prakata</i>	<i>vii</i>
<i>Senarai Singkatan</i>	<i>ix</i>
BAB 1 PENGENALAN PEMBANGUNAN TANAH	1
1.1 Pengenalan	1
1.2 Konsep Pembangunan Tanah	2
1.3 Kajian Terhadap Halangan Pembangunan Tanah	3
BAB 2 PEMBANGUNAN TANAH	7
2.1 Pengenalan	7
2.2 Dasar Pembangunan Nasional	8
2.3 Faktor Pertumbuhan Ekonomi dan Pembangunan Negara	9
2.4 Tanah sebagai Faktor Pengeluaran	10
BAB 3 PROSES PEMBANGUNAN TANAH	13
3.1 Pengenalan	13
3.2 Proses Pembangunan Tanah	15
3.3 Jenis Pembangunan Tanah	25
3.4 Pihak yang Terlibat dalam Pembangunan Tanah	30
3.5 Hubungan antara Pemain/Ejen	37
BAB 4 HALANGAN PEMBANGUNAN TANAH	39
4.1 Pengenalan	39
4.2 Isu Pembangunan Tanah	42
4.3 Kategori Halangan	45
4.4 Sikap Manusia dalam Pembangunan Tanah	58

BAB 5 KAJIAN KES DI PULAU DUYONG, KUALA TERENGGANU	65
5.1 Pengenalan	65
5.2 Bentuk Rupa Bumi	71
5.3 Kemudahan Asas	71
5.4 Pemajuan Tanah	73
5.5 Aktiviti Ekonomi dan Pekerjaan Penduduk	80
5.6 Konsep Pembangunan Negeri Terengganu	88
5.7 Galakan Kerajaan dalam Pembangunan Tanah	94
5.8 Faktor Halangan	97
5.9 Dapatan Kajian dan Kesimpulan	128
Rujukan	133
Indeks	139

1 PENGENALAN PEMBANGUNAN

1.1 PENGENALAN

Pembangunan tanah adalah suatu proses yang melibatkan banyak pihak. Pembangunan tanah melibatkan ramai pihak: bandar, arkitek, jurutera, jurukur bahan, dan antara satu dengan lain untuk berbincang dan menjayakan pelaksanaan sesuatu cadangan bentuk kelulusan untuk cadangan pembangunan dan kelulusan jabatan kerajaan terdapat di bidang tugas dan kepentingan masing-masing: Berkuasa Tempatan, Pejabat Tanah dan Daerah, Pengairan dan Saliran, dan Jabatan Bekalan Air yang terlibat sama dalam setiap cadangan masing-masing. Terdapat kemungkinan akan berbeza pendapat dalam kalangan jabatan kerajaan yang terlibat dalam pembangunan tanah bagi menjaga kepentingan masing-masing. Bagi mencari penyelesaian, menemui jalan buntu, satu pendekatan bersama bagi mengatasi permasalahan yang dihadapi dalam pembangunan tanah akan dapat dilaksanakan. Masalah dan jalan penyelesaian dapat dicari dalam cadangan pembangunan tanah akan dapat dijayakan. Apakah yang dimaksudkan dengan pembangunan tanah? Stubbs (1996: 198) mendefinisikannya sebagai:

"Land development process is both complex and diverse due to many agencies involved in aims, roles, interests, strategies and activities"

(Ratcliffe)

Menurut Gravetter and Forrester, pembangunan tanah rapat dengan keadaan persekitaran, minat sosial dan pembangunan corak am yang sama daripada generasi yang berpengaruh di sekitarnya berkebolehan dan lebih tinggi yang lebih baik daripada orang lain yang rapat dengan sikap dan tingkah laku dan kejayaan cadangan pembangunan penyampaian yang baik tentang pelaksanaan pembangunan tanah dan ini bertujuan untuk mengelakkan akan timbul akibat daripada sikap dan tingkah laku.

1.2 KONSEP PEMBANGUNAN

Kejayaan pelaksanaan sesuatu pembangunan tanah bergantung kepada sikap masyarakat, organisasi, dan perspektif institusi pelbagai pihak. Gore and Nicholson, 1991; Healey, 1991; dan Crowe, 1991. Persepsi, motif, dan strategi pihak-pihak yang terlibat juga menjadi punca kegagalan dan kejayaan pembangunan tanah.

Pembangunan tanah ialah hasil kerjasama antara ahli profesional, dan pihak berkuasa tempatan sesama mereka. Oleh yang demikian, pembangunan tanah tidak akan berjaya jika tidak akan terlaksana. Keadaan ini menunjukkan bahawa pembangunan di kawasan atau di kawasan tertentu oleh pihak berkuasa tempatan untuk pembangunan tanah akan dapat dilaksanakan. Menurut L. D. Crowe, 1991, kerjasama antara seseorang dengan pihak-pihak yang berkepentingan di sekitarnya dapat membentuk perkembangan dan tindakannya yang bertugas serta terlibat dalam masyarakat dan tidak dapat dilaksanakan.

Konsep pembangunan ialah pembangunan yang berbeza. Semua bentuk pembangunan adalah

yang terkandung dalam Akta Perancangan Bandar dan Desa, 1976. Menurut Akta Perancangan Bandar dan Desa, 1976, Seksyen 2(1), halaman 4, definisi pembangunan ialah:

"Kerja-kerja bangunan, kejuruteraan, perlombongan, perindustrian, atau apa-apa kerja lain yang seumpamanya pada, di atas, di sebelah atau di bawah tanah atau membuat sesuatu perubahan matan tentang penggunaan sesuatu tanah atau bangunan".

Kegagalan untuk membuat perubahan minda dan sikap serta berinteraksi dengan baik antara golongan profesional dengan bukan profesional, antara profesional dengan pihak berkuasa tempatan, dan antara bukan profesional dengan pihak berkuasa tempatan akan menyebabkan kelulusan untuk sebarang bentuk pembangunan yang dirancang berlanjutan dan mengambil masa yang lama. Kegagalan dan kelewatan dalam merancang dan meluluskan sesuatu bentuk cadangan pembangunan akan menimbulkan masalah yang lain pula. Pembangunan tanah akan terhalang atau dengan lain perkataan tidak dapat dilaksanakan. Masalah yang dijangka timbul akibat daripada kelewatan kelulusan cadangan pembangunan tanah termasuklah bentuk dan corak permintaan pembangunan dan kuasa beli golongan atau kumpulan sasaran. Satu cadangan pembangunan yang baru perlu dikemukakan untuk kelulusan bagi memenuhi kehendak dan keperluan semasa. Proses ini akan berulang-ulang dan keadaan ini tentunya akan melambatkan pelaksanaan pembangunan tanah.

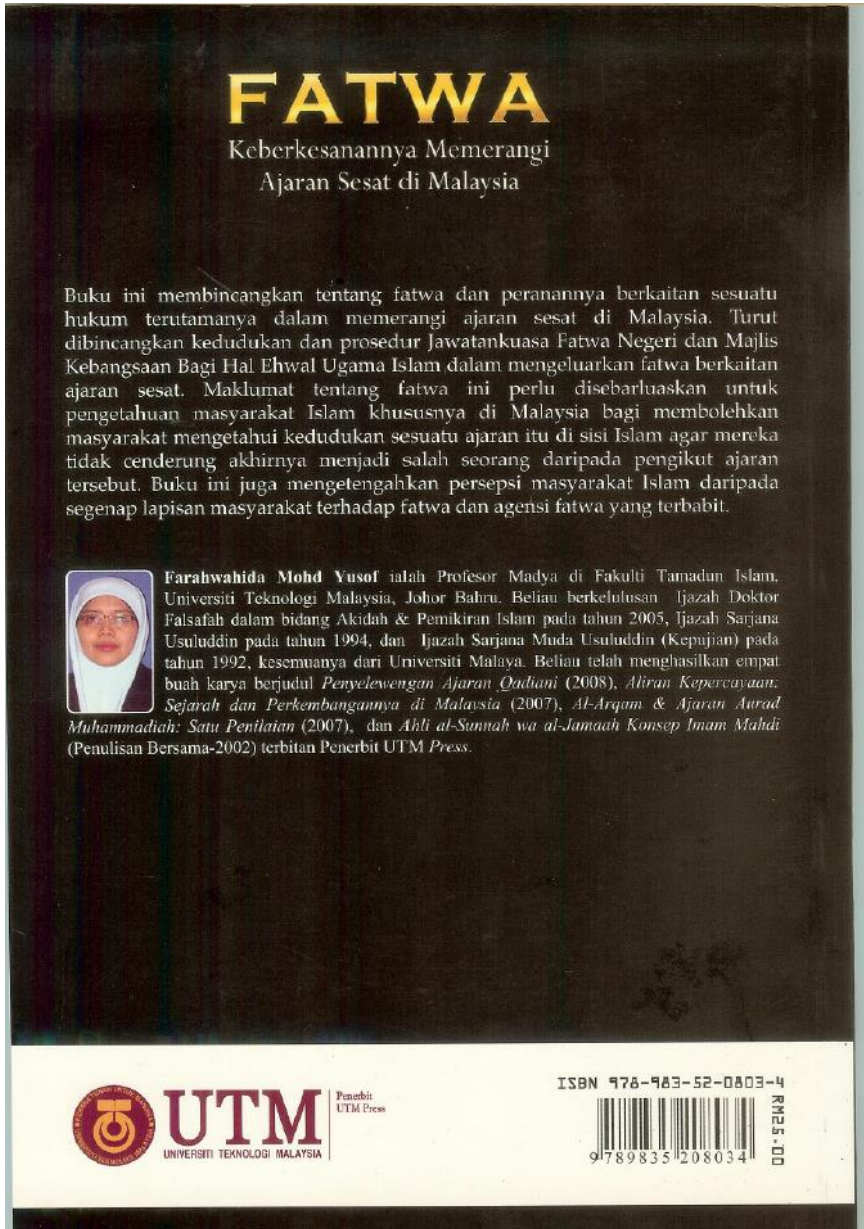
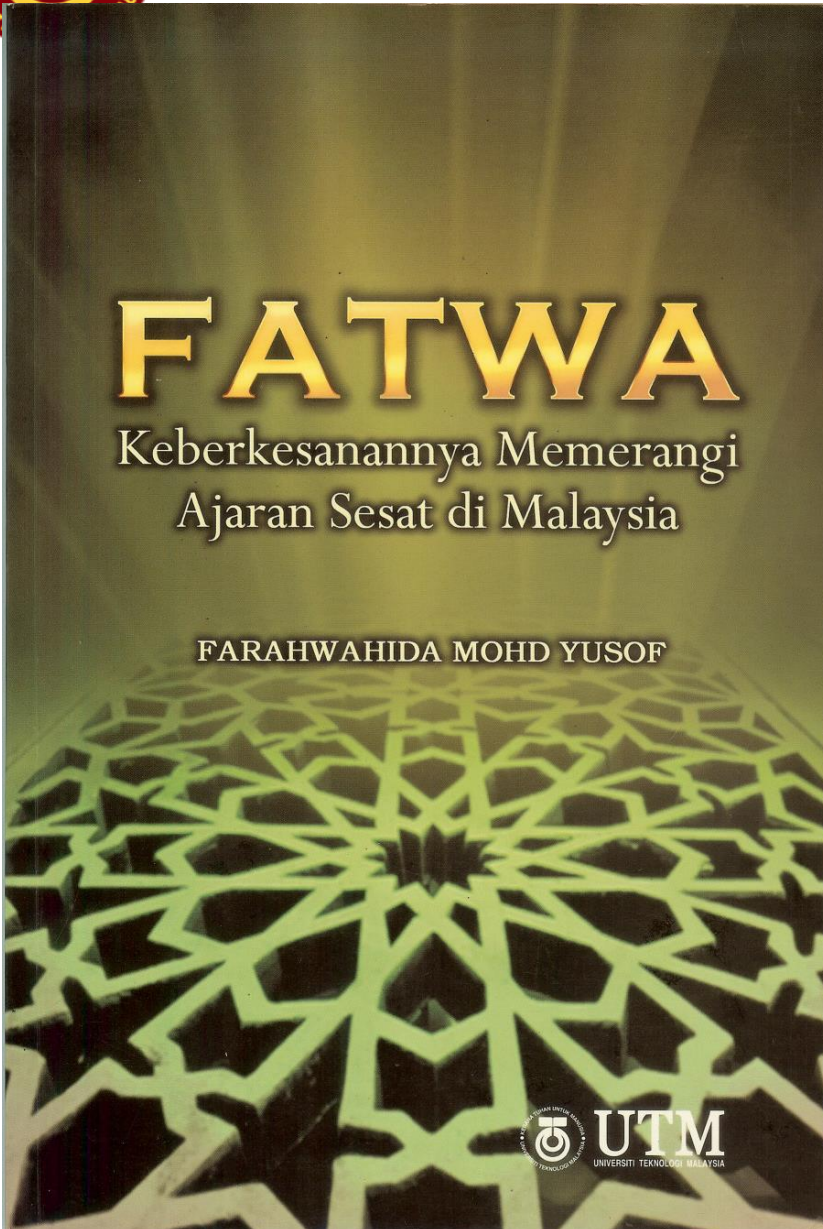
1.3 KAJIAN TERHADAP HALANGAN PEMBANGUNAN TANAH

Kajian terhadap halangan pembangunan tanah telah dijalankan oleh penyelidik seperti Evans (1983), Wiltshaw (1985), dan Neutze (1987). Kajian sedemikian dijalankan di luar negara. Manakala di Malaysia, kajian seumpama itu telah dijalankan oleh Ismail Omar (1999b), Norhidayah (2008), dan Djurdjani (2008).

Mengkaji gelagat manusia menurut pendekatan humanisme bermaksud melihat persepsi, motif, strategi, dan tindakan manusia dalam pembangunan tanah. Pendekatan humanisme menumpu kepada individu dan motivasi mereka. Gore dan Nicholson (1991) telah menggunakan pendekatan humanisme



Contoh-Buku Ilmiah Penyelidikan



FATWA

Keberkesanannya Memerangi
Ajaran Sesat di Malaysia

Buku ini membincangkan tentang fatwa dan peranannya berkaitan sesuatu hukum terutamanya dalam memerangi ajaran sesat di Malaysia. Turut dibincangkan kedudukan dan prosedur Jawatankuasa Fatwa Negeri dan Majlis Kebangsaan Bagi Hal Ehwal Ugama Islam dalam mengeluarkan fatwa berkaitan ajaran sesat. Maklumat tentang fatwa ini perlu disebarluaskan untuk pengetahuan masyarakat Islam khususnya di Malaysia bagi membolehkan masyarakat mengetahui kedudukan sesuatu ajaran itu di sisi Islam agar mereka tidak cenderung akhirnya menjadi salah seorang daripada pengikut ajaran tersebut. Buku ini juga menentang persepsi masyarakat Islam daripada segenap lapisan masyarakat terhadap fatwa dan agensi fatwa yang terbabit.



Farahwahida Mohd Yusof ialah Profesor Madya di Fakulti Tamadun Islam, Universiti Teknologi Malaysia, Johor Bahru. Beliau berkelulusan Ijazah Doktor Falsafah dalam bidang Akidah & Pemikiran Islam pada tahun 2005, Ijazah Sarjana Usuluddin pada tahun 1994, dan Ijazah Sarjana Muda Usuluddin (Kepujian) pada tahun 1992, kesemuanya dari Universiti Malaya. Beliau telah menghasilkan empat buah karya berjudul *Penyelewengan Ajaran Qadiani* (2008), *Aliran Kepercayaan: Sejarah dan Perkembangannya di Malaysia* (2007), *Al-Arqaam & Ajaran Anrad Muhammadiyah: Satu Pentilaian* (2007), dan *Ahli al-Sunnah wa al-Jamaah Konsep Inam Mahdi* (Penulisan Bersama-2002) terbitan Penerbit UTM Press.



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KANDUNGAN

<i>Prakata</i>	<i>ix</i>
<i>Senarai Singkatan</i>	<i>xi</i>
<i>Jadual Transliterasi</i>	<i>xiii</i>
BAB 1 INSTITUSI FATWA DI MALAYSIA	1
Definisi Fatwa	2
Sejarah Fatwa dalam Islam	4
Fatwa dalam Perundangan Islam	8
Fatwa dalam Undang-Undang di Malaysia	9
BAB 2 JAWATANKUASA FATWA NEGERI & MAJLIS FATWA KEBANGSAAN	21
Keanggotaan dan Peranan Jawatankuasa Fatwa Negeri	22
Majlis Kebangsaan Bagi Hal Ehwal Ugama Islam	26
Prosedur Penetapan Fatwa	31
Penguatkuasaan Fatwa	39
Peranan Fatwa dalam Mengawal Perkembangan Ajaran Sesat	40

viii / Kandungan

BAB 3 KAJIAN KEBERKESANAN FATWA MENANGANI AJARAN SESAT	49
Analisis Data dan Perbincangan	49
Rumusan Hasil Kajian Soal Selidik	86
BAB 4 PENGUKUHAN INSTITUSI FATWA: MENGEKANG AJARAN SESAT	89
Kepentingan Fatwa	89
Ajaran Sesat dan Undang-Undang	90
Kebekkesanan Fatwa Ajaran Sesat	94
Meningkatkan Kredibiliti Fatwa	97
Rujukan	101
Indeks	105

EXAMPLE UTM Book Chapters

CONTROL DESIGN & OPTIMIZATION TECHNIQUES

SERIES 2

Editors

Salinda Buyamin
Norhaliza Abdul Wahab



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CONTENTS

<i>List of Contributors.</i>	<i>ix</i>
<i>Preface</i>	<i>xi</i>

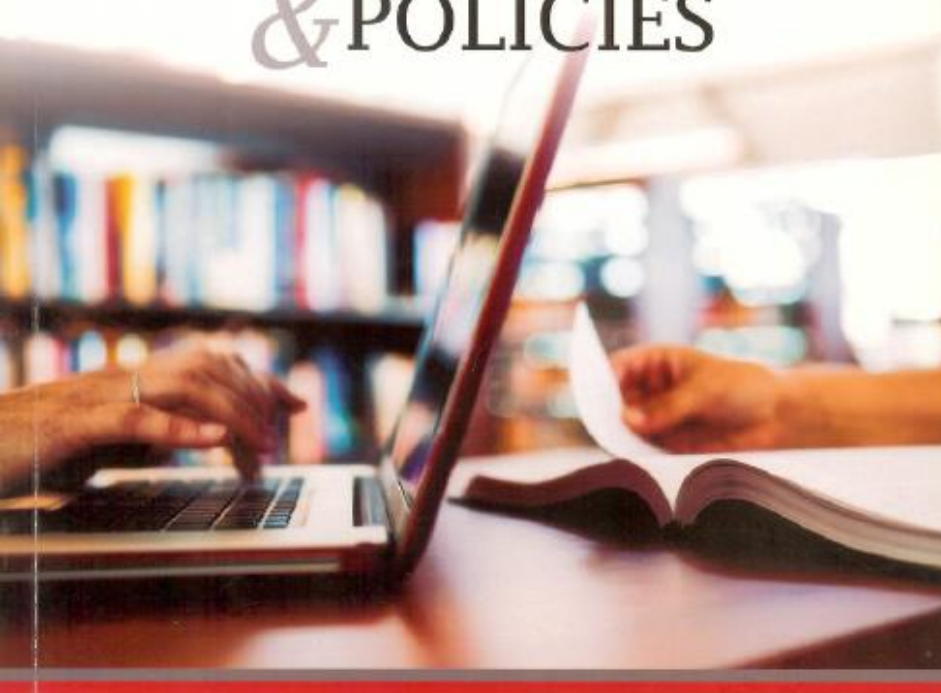
CHAPTER 1 REVIEW ON CONTROL STRATEGIES OF WASTEWATER TREATMENT SYSTEMS	1
<i>Mohd Fua'ad Rahmat, Norhaliza Abdul Wahab, Sharatul Izzah Samsudin, Muhammad Sani Gaya, Aznah Nor Anuar, Syed Najib Syed Salim</i>	
CHAPTER 2 SMART CAR PART I: PROGRAMMING OF MICROCONTROLLER	25
<i>Rubita Sudirman, Tie Siang Fui, Muhammad Noorul Anam Mohd Norddin</i>	
CHAPTER 3 MODELING OF INDUSTRIAL PNEUMATIC POSITIONIN SYSTEM	55
<i>Mohd Fua'ad Rahmat, Syed Najib Syed Salim, Ahmad 'Athif Mohd Faudzi, Sharatul Izzah Samsudin</i>	
CHAPTER 4 PERFORMANCE OF STATIC PID CONTROLLER ON PERMANENT MAGNET STEPPER MOTOR	77
<i>Salinda Buyamin, Amir Mehdi Yazdani, Mohd Najib Ribuan, Anita Ahmad</i>	

CHAPTER 5 PID CONTROL DESIGN FOR ACTIVATED SLUDGE PROCESS	101
<i>Muhammad Sani Gaya, Norhaliza Abdul Wahab, Yahaya Md Sam, Aznah Nor Anuar, Sharatul Izzah Samsudin</i>	
CHAPTER 6 SMART CAR PART II: SERVOMOTOR AND MOTOR DRIVER	119
<i>Rubita Sudirman, Mohd. Hafizuddin Abdul Ghafar, Muhammad Noorul Anam Mohd Norddin</i>	
CHAPTER 7 INTEGRATED MONITORING SYSTEM FOR HIGH VOLTAGE ELECTRIC POWER SUBSTATION	157
<i>Dirman Hanafi, Mohamed Najib Ribuan, Salinda Buyamin, Ignatius Agung Wibowo, Hairulazwan Hashim Muhammad Izzuddin Ismail</i>	
CHAPTER 8 SMART CAR PART III: CAMERA SENSOR	179
<i>Rubita Sudirman, Hazrul Hisam Hassan, Muhammad Noorul Anam Mohd Norddin</i>	
CHAPTER 9 FUZZY MODELING TECHNIQUES FOR NONLINEAR SYSTEM	213
<i>Mohd Fua'ad Rahmat, Abdul Rashid Husain, Ling Tiew Gine</i>	

CHAPTER 10 COMPARISON BETWEEN CHOLESKY AND QR METHOD IN DYNAMICS SYSTEM	227
<i>Thresea Dalan, Norhaliza Abdul Wahab, Mashitah Che Razali, Shafishuhaza Sahlan, Irma Wani Jamaludin</i>	
CHAPTER 11 A STUDY OF SENSOR APPLICATION ON ANAUTONOMOUS ROBOT: THE SENSBOT	245
<i>Salinda Buyamin, Mohamad Fadzli Haniff, Shamsudin Mohd Amin</i>	
CHAPTER 12 PARTICLE SWARM OPTIMIZATION (PSO) APPLICATION ON MODEL ORDER REDUCTION	279
<i>Shafishuhaza Sahlan, Mohamad Norfadly Musa, Herlina Abdul Rahim</i>	
CHAPTER 13 FPGA PLACEMENT USING BINARY PSO	291
<i>Zulkifli Yusof, Cheng Wei Phoi, Asrul Adam, Muhamaf Arif Abd.Rahim, Zuwairie Ibrahim</i>	
CHAPTER 14 AN INITIAL STUDY FREQUENCY WEIGHTED MODEL ORDER REDUCTION TECHNIQUE ON WASTEWATER SYSTEMS	313
<i>Shafishuhaza Sahlan, Mohd Fadhil Mohd Arip, Norhaliza Abdul Wahab</i>	

CHAPTER 15 CLOCK ROUTING USING BINARY PARTICLE SWARM OPTIMIZATION	323
<i>Zulkifli Md. Yusof, Voon Wee Sun, Asrul Adam, Nasir Sheikh Husin, Zuwairie Ibrahim</i>	
INDEX	345

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Contents

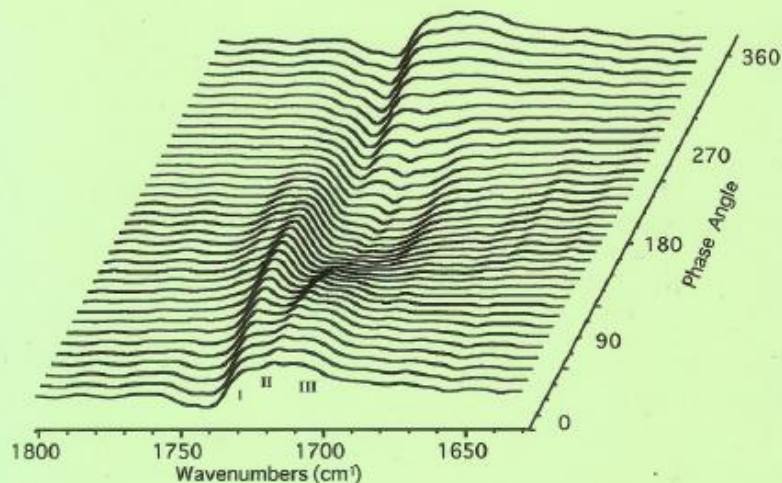
List of Contributors Preface

Chapter 1	Too difficult to r of the implemen learning English international sta Bambang Sumi Mislan
Chapter 2	Internationalizat education in I institutions: conc strategy Sanitah Mohd Yu Sidin
Chapter 3	Searching for t of effective s reviewing the lite Lokman Mohd Muzammil Yassin Mehmet Ozay
Chapter 4	The use of liste MUET: listenin test: a literature Hee Jee Mei a Othman

Chapter 5	Development of a infants and prese teachers as careg centers Nora Mislan Sumintono
Chapter 6	Academic Dep Roles in Universi Khadijah Daud a Tahir
Chapter 7	Kouzes and P transformational Khadijah Daud Abdul Rahman
Chapter 8	Science educat Malaysia Mohd Salleh A Phang, Mohamad Salmiza Saleh
Chapter 9	A brief overvie Islamic tradition Malaya Mehmet Ozay
Chapter 10	Embracing pract higher education: doctoral journey Narina A. Samah

Chapter 11	Revitalizing Rural Schools: A Challenge for Malaysia Bambang Sumintono, Nora Mislan and Andi Marwan	171
Index		191

Vibrational Spectroscopy of Biological and Polymeric Materials



edited by
Vasilis G. Gregoriou
Mark S. Braiman

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Chemistry

Used primarily for characterizing polymers and biological systems, vibrational spectroscopy continues to uncover structural information pertinent to a growing number of applications. **Vibrational Spectroscopy of Biological and Polymeric Materials** compiles the latest developments in advanced infrared and Raman spectroscopic techniques that are applicable to both polymeric materials and biological compounds. It also presents instrumentation and experimental details that can be used by polymer chemists and biochemists in the design of their own experiments.

The book discusses static and dynamic FT-IR spectroscopies to liquid crystalline polyurethanes. It discusses the measurement of static and dynamic linear dichroism and stress or strain in both single and multiple fiber composite materials, the roles of vibrational spectroscopy, and the Langmuir-Blodgett technique in the study and preparation of high-quality ultrathin materials. The book also covers two-dimensional correlation spectroscopy, vibrational circular dichroism, focal-plane arrays, the use of ligand-gated FT-IR difference spectroscopy in neuropharmacology, and the application of time-resolved FT-IR spectroscopy to biological materials.

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- Demonstrates methods that take advantage of recently available mid-IR multichannel detectors
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Table of Contents

Chapter 1 Studying the Viscoelastic Behavior of Liquid Crystalline Polyurethanes using Static and Dynamic FT-IR Spectroscopy 1 <i>Vasilis G. Gregoriou, Sheila E. Rodman, Bindu R. Nair, and Paula T. Hammond</i>	
Chapter 2 Stress/Strain Measurements in Fibers and Composites using Raman Spectroscopy 35 <i>Costas Galiotis and John Parthenios</i>	
Chapter 3 FT-IR Spectroscopy of Ultrathin Materials 99 <i>Takeshi Hasegawa, Veeranjanyulu Konka, and Roger M. Leblanc</i>	
Chapter 4 Two-Dimensional Correlation Spectroscopy of Biological and Polymeric Materials..... 163 <i>Yukihiko Ozaki and Slobodan Sasić</i>	
Chapter 5 Raman and Mid-Infrared Microspectroscopic Imaging..... 215 <i>Rohit Bhargava, Michael D. Schaeberle, and Ira W. Levin</i>	
Chapter 6 Vibrational Circular Dichroism of Biopolymers: Summary of Methods and Applications 253 <i>Timothy A. Keiderling, Jan Kubelka, and Jovencio Hilario</i>	
Chapter 7 Membrane Receptor–Ligand Interactions Probed by Attenuated Total Reflectance Infrared Difference Spectroscopy 325 <i>John E. Baenziger, Stephen E. Ryan, and Veronica C. Kane-Dickson</i>	
Chapter 8 Step-Scan Time-Resolved FT-IR Spectroscopy of Biopolymers..... 353 <i>Mark S. Bralman and YaoWu Xiao</i>	
Index 419	

1 Studying the Viscoelastic Behavior of Liquid Crystalline Polyurethanes Using Static and Dynamic FT-IR Spectroscopy

Vasilis G. Gregoriou, Sheila E. Rodman, Bindu R. Nair, and Paula T. Hammond

CONTENTS

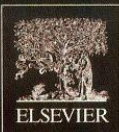
1.1	Introduction	1
1.2	Theory	4
1.2.1	FT-IR Static Linear Dichroism	4
1.2.2	Theory of Dynamic Infrared Spectroscopy	4
1.2.3	Two-Dimensional Infrared Correlation Spectroscopy	6
1.3	Experimental	8
1.3.1	Static Linear Dichroism	8
1.3.2	Dynamic FT-IR Spectroscopy	9
1.4	Synthesis and Characterization of the Liquid Crystalline Polyurethanes	10
1.4.1	Overall Synthetic Design	10
1.4.2	Molecular Architecture and Structure	13
1.4.3	Dichroic Ratio of LC Segmented Copolymer	16
1.4.4	Orientation Function of Polyurethane Molecular Components	18
1.4.5	Interdependence of the Orientation Behavior of LC Layers and Hard Segment Domains	22
1.4.6	In-Phase and Out-of-Phase Dynamic Spectra	23
1.4.7	Viscoelastic Response of the SCLCP	27
1.5	Conclusions	30
	References	32

2 Stress/Strain Measurements in Fibers and Composites Using Raman Spectroscopy

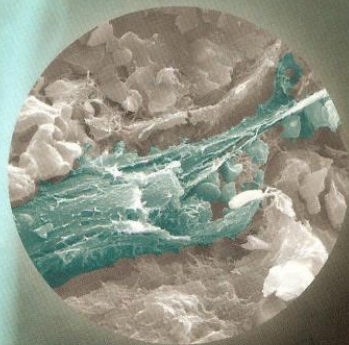
Costas Galiotis and John Parthenios

CONTENTS

2.1	Background	36
2.2	Instrumentation	38
2.2.1	Conventional Measurements	38
2.2.2	Remote Laser Raman Measurements	39
2.2.2.1	Fiber Optic Microprobes	39
2.2.2.2	Microprobes Incorporating Solid-State Lasers	40
2.3	Stress and Strain Sensitivity of Crystalline Fibers	42
2.3.1	Application of Tensile and Compressive Loading	42
2.3.2	Effect of Temperature	45
2.3.2.1	Carbon Fibers	45
2.3.2.2	Aramid Fibers	46
2.4	Converting Spectroscopic Data into Fiber Stress/Strain Curves in Tension and Compression	47
2.5	Assessing the Efficiency of the Fiber/Matrix Bond in Composites	49
2.5.1	Methodology	51
2.5.2	Model Composite Specimens	51
2.5.2.1	Effect of Fiber Treatment	51
2.5.2.2	Effect of Fiber Sizing	54
2.5.3	Full Composites	57
2.5.3.1	Stress Transfer in Composites	57
2.5.3.2	As-Received Composite Plates and Tows	58
2.5.3.3	Composites Containing Induced Discontinuities	68
2.6	Determination of Thermal Residual Stresses in Composites	73
2.6.1	Methodology	73
2.6.2	Residual Thermal Stress in Thermosetting and Thermoplastic Composites	74



Characterization of Biomaterials



Edited by
Amit Bandyopadhyay
Susmita Bose

Material Science and Engineering

Characterization of Biomaterials

One of the key challenges current biomaterials researchers face is identifying which of the dizzying number of highly specialized characterization tools can be gainfully applied to different materials and biomedical devices. Since this diverse marketplace of tools and techniques can be used for numerous applications, choosing the proper characterization tool is highly important, saving both time and resources.

Characterization of Biomaterials is a detailed and multidisciplinary discussion of the physical, chemical, mechanical, surface, *in vitro* and *in vivo* characterization tools and techniques of increasing importance to fundamental biomaterials research.

KEY FEATURES

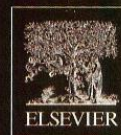
- The work comprises contributions from a cross-section of the physical sciences, biological sciences, engineering and applied sciences characterization community, providing researchers with gainful and cross-cutting insight into this highly multi disciplinary field
- Detailed coverage of important test protocols helps researchers by providing specific real-world examples and standards for applied characterization
- Detailed discussion on both biomaterials and biomedical device characterization issues and related standards to follow for regulatory purposes
- Special emphasis on orthopaedic and cardiovascular devices

Characterization of Biomaterials will serve as a comprehensive resource for biomaterials researchers requiring detailed information on physical, chemical, mechanical, surface, *in vitro* or *in vivo* characterization. The book is designed for materials scientists, bioengineers, biologists, clinicians and biomedical device researchers seeking input towards planning on how to test their novel materials or structures or biomedical devices towards a specific application. Chapters are developed considering the need for both industrial researchers as well as academics.

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