MIDAS

MAKLUMAT INDUSTRI
DAN SAINS
INFORMATION SERVICE FOR
COMMERCE & INDUSTRY

MIDAS BULLETIN

ISSN 0126-8708 Jil.31, Bil.2, Apr/Jun 2003

MAKLUMAT PERDAGANGAN DAN PERNIAGAAN / *TRADE AND COMMERCIAL INFORMATION*

MALAYSIA TO RESTRATEGISE DUTY FREE CRUDE PALM OIL EXPORT TO INDIA

Malaysia has to restrategise its duty free crude palm oil export to India in the future. India was a big buyer with 3.5 million tonnes of palm oil annually of which 50 percent came from Malaysia. There are discriminatory tariffs that had been imposed on palm oil as compared to soyabean oil. Currently, the tariffs imposed on crude palm oil is 65 percent while crude soyabean oil is 45 percent. Tariffs for process palm oil is 92.4 percent while process soyabean oil is 50.8 percent. Malaysia had been taking up this issue for the last three years without much headway. There is a huge difference between process and crude palm oil which is 27 percent as compared to the crude and process soyabean oil which is only five percent. Malaysia will make a representation to the Indian government to reduce the tariff discrimination between crude palm oil and soyabean oil. To restrategise our crude palm oil, Malaysia will also discuss the matter with our Indonesian counterparts and our exporters here, sources were quoted.

KANDUNGAN / *CONTENTS*

PERPUSTAKAAN
UNIVERSITI SAINS MALAYSIA
11800 USM, Pulau Pinang, Malaysia
http://www.lib.usm.my

MALAYSIA SHOULD DEVELOP GEOTHERMAL TECHNOLOGY

Malaysia should expedite the development of geothermal energy technologies as an alternative to natural resources such as oil and gas, sources were quoted. The occurrences of various hotspring locations in the country would boost efforts to develop the geothermal energy technologies. Malaysian Energy Centre (MEC) was prepared to work with the geological department in Malaysia to explore the potential of the promising new energy resources. Geothermal, meaning earth's heat, is renewable and environmentally friendly energy source which is abundant in Asia. The resources can range from shallow ground to hot water and rock several kilometres below the earth's surface.

CANADA TO USE MALAYSIA AS BASE TO MARKET WIRELESS TELCOM PRODUCTS

Canadian companies, seeking opportunities in the wireless products and services sector, are considering using Malaysia as the base to penetrate the Asean market.The growth of wireless telecommunications in Malaysia and the dynamic market here, had attracted the Canadian companies to use it as a gateway to the Asean market, sources were quoted. Several well known Canadian communications companies were already active in the Malaysian market. In 2001, Canada's total exports of information and communication technology products to Southeast Asia came to Can.$259 million. Out of that, Malaysia accounted for 13 percent.

UN: ASBESTOS, THREE DEADLY PESTICIDES AND TWO FORMS OF LEAD TARGETS FOR INTERNATIONAL ACTION.

(Food and Agriculture Organization) - All forms of asbestos, the pesticides DNOC, parathion, a severely hazardous pesticide formulation that is a mixture of benomyl, thiram and carbofuran, and two highly toxic lead additives used in gasoline should be added to an international list of chemicals subject to trade controls. This recommendation was made by a committee of government-appointed experts under the Rotterdam Convention, sources were quoted. The Committee has also launched the process for listing tetraethyl and tetramethyl lead, which are used as additives in gasoline or petrol. It has been known for many years that lead in petrol or gasoline is a serious health risk particularly to children. This proposed action under the Rotterdam Convention is complementary to the recent decision of United Nations Environment Programme (UNEP) governing council on lead and with the recent

Johannesburg Summit on Sustainable Development and its Plan of Implementation for leaded petrol. It calls for the rapid global phase out of this dangerous pollutant by 2005. The interim Prior Informed Consent (PIC) procedure covers the following 26 pesticides: 2,4,5-T, aldrin, binapacryl, captafol, chlordane, chlordimeform, chlorobenzilate, DDT, 1,2-dibromoethane (EDB), dieldrin, dinoseb, ethylene dichloride, ethylene oxide, fluoroacetamide, HCH, heptachlor, hexachlorobenzene, lindane, mercury compounds, pentachlorophenol, toxaphene, plus certain hazardous formulations of methamidophos, methyl-parathion, parathion, and phosphamidon. When the text of the Rotterdam Convention was adopted it included also certain hazardous formulations of monocrotofos, since then all formulations of monocrotofos have become subject to the Interim PIC procedure.

FISH PRODUCTION TO GROW BY 800,000 TONNES

Malaysia's fish production is expected to grow by 800,000 tonnes by the year 2010 from one million tonnes now with the bulk coming from aquaculture, sources were quoted. Aquaculture was expected to contribute 600,000 tonnes of the growth in production. Rapid growth of the fisheries sector will be beneficial to the country in terms of import saving, food security and export earnings. The industry was becoming more and more competitive against the backdrop of fast depleting fishery resources. The Agriculture Ministry has developed a comprehensive long-term plan that will ensure our fisheries sector be sustained in the future. The ministry had established a Business Development Council to assist potential investors with their investment plans coupled with the introduction of a new incentive scheme for investors.

MAKLUMAT PENGELUARAN / *PRODUCT INFORMATION*

MONSANTO CORN GETS EPA APPROVAL

The Environmental Protection Agency (EPA) last week approved the use of a new plant-incorporated protectant designed by Monsanto Company to control rootworm, a widespread and destructive insect in the US Corn Belt, sources were quoted. The agency says YieldGard Rootworm will provide growers with a safe, nonchemical pest control alternative that can reduce reliance on conventional insecticides now used on millions of acres of corn in the US. The EPA has put this new product through a rigorous, science-based review process, including extensive public comment and independent scientific review, to ensure that it is safe for human health and the environment. The new corn pest control produces its own insecticide within the plant derived from Bacillus thuringiensis (Bt), a naturally occurring soil bacterium. The Bt protein-Cry3Bbl-controls rootworm, a highly destructive pest responsible for the single largest use of conventional pesticides in the US. Research shows YieldGard Rootworm corn offers significant benefits to corn growers, including superior control of the corn rootworm, reduced exposure to insecticides and more convenience at planting. To reduce the risk of corn rootworm developing resistance to Bt, the EPA is requiring Monsanto to ensure that 20 percent of the planted acreage be set aside where non-Bt corn will be grown to serve as a refuge.

DRUG DEVELOPMENT; NEW PRODUCT LAUNCHED THAT USE MOLECULARBREEDING EVOLUTION TECHNOLOGY.

Codexis, Inc., a majority owned subsidiary of Maxygen, Inc., (MAXY), announced that its partner Novozymes has launched two new products that were developed using Codexis' proprietary MolecularBreeding directed evolution technologies, sources were quoted. Codexis will receive royalties on net sales of the products, which address a range of customer needs in the food processing, pulp and paper and laundry detergent markets. Furthermore, Novozymes has advanced several additional products into late phases of development for application in the food and industrial markets which have benefited from the use of Codexis' technologies. In addition to continued validation of our MolecularBreeding directed molecular evolution technologies at the commercial scale, the collaboration with Novozymes generates royalty revenue that allows Codexis to invest in its core focus area, the development of fermentative and biocatalytically based processes for the efficient synthesis of pharmaceutical active ingredients. Novozymes produces and sells more than 500 enzyme products in 120 countries.

SYNGENTA SEEKS TO LEVERAGE CHEMISTRY AND BIOTECH BEYOND CROP PROTECTION

Through new products and initiatives in the seeds and biotech sectors, Syngenta is starting to extend the full-service concept beyond traditional crop protection. One of the first of these is a hybrid barley, called Colossus, which is at the center of a new growing system for farmers sources were quoted. Last year, the company set up a joint venture, New Product Network (NPN), which consists of Syngenta, a grower, a logistics company and a marketer, to distribute to supermarkets in the Western US a new type of seedless watermelon, bred by Syngenta. In 2004, Syngenta plans to introduce the first products from its biotechnology research program. Syngenta plans to enter the animal feed sector with a phytase enzyme and to launch a cotton plant resistant to certain insects. In some developing countries and emerging economies, such as Asia and parts of Eastern Europe, Syngenta has single sales teams to market its crop protection products and seeds within growing programs. The company sees its NPN project as a possible blueprint for a series of programs that will tie seed genetics to crop protection. Projects such as NPN can also provide a basis for growing systems embracing not only seeds for crops with specific traits but also the management of diseases and of pest resistance. The company's new insect control technology, called vegetative insecticidal protein, and the second of its two new biotech products, protects cotton and corn crops against insects such as root and leaf worms.

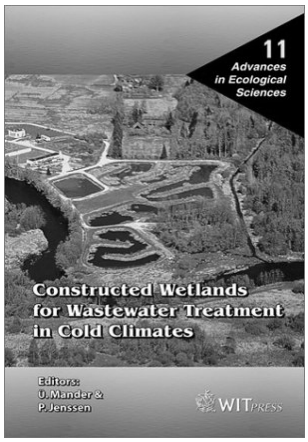
LABORATORY DEVICES: NEW MICROARRAYING PRODUCTS INTRODUCED

Accelr8 Technology Corporation (ACLY) announced the introduction of high-performance microtiter plates. The new products join the company's line of high-performance OptArray microarraying slides. The plates and slides both feature the company's proprietary OptiChem activated surface chemistry, sources were quoted. Accelr8 developed the new products in cooperation with Greiner Bio-One GmbH, a German manufacturer of high quality microtiter plates. Under the production agreement, Accelr8 supplies Greiner with OptiChem-coated glass plates. Greiner then bonds the coated glass to their bottomless polystyrene microtiter plate and packages the finished product. The new products are the first to support high performance microarraying applications in the microplate format. Accelr8's early entry into this application space provides an excellent opportunity to capitalize on industry experts' belief that plate-based microarraying is about to provide a new level of interest in gene and protein arraying. Accelr8's product launch is well-timed, as instrument makers are supporting this industry trend by introducing high-volume arraying and plate scanning capabilities. The new plates close a gap in the rollout of plate-based arraying, leveraging the large investments in high throughput plate-handling robotic systems owned by drug discovery laboratories

NANOGEN, INC.; THREE NEW PRODUCTS LAUNCHED FOR DETECTING GENETIC MUTATIONS

Nanogen, Inc., (NGEN), a provider of molecular diagnostics, announced the availability of three new products for the detection of certain genetic mutations often associated with Alzheimer disease, Canavan disease, and beta thalassemia. Two of the products are analyte specific reagents (ASR) that may be used by laboratories to create and validate tests for identifying mutations linked to Alzheimer and Canavan diseases. These products will be available to research laboratories and high complexity CLIA- certified clinical reference laboratories in the U.S. A research-use-only product for beta thalassemia has been launched in Europe, where the number of people with that genetic mutation is 10 times more than in the U.S. All of the newly released products can be utilized on the NanoChip Molecular Biology Workstation, Nanogen's microarray platform. Nanogen's ApoE ASRs consist of various reagents that may be used by laboratories to develop and validate a test for the detection of ApoE4, the main Apolipoprotein E allele associated with increased risk for Alzheimer disease, sources were quoted.

ULASAN BUKU / *BOOK REVIEWS*

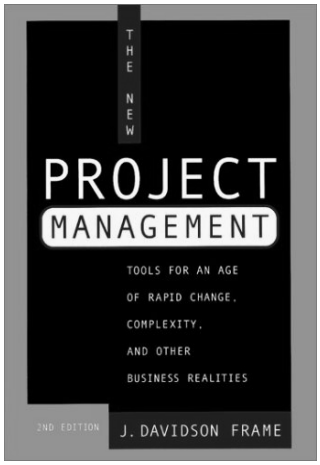


CONSTRUCTED wetlands for wastewater treatment in cold climates. Manden, U. & Jenssen, P.D., eds. Southampton: WIT Press, 2003. (TD756.5.C759 2003)

This volume presents 17 up-to-date contributions focusing on the potential and use of constructed wetlands for wastewater treatment in cold climate areas. The central issues examined are the long-term experiences of such wetlands, optimum design to improve purification efficiency, the intensity of the critical processes of organic matter mineralization and nutrient retention during winter and constructed wetland use for multiple purposes.

CONSUMING behaviour. Desmond , John. Basingstoke: Palgrave, 2003. (HF5415.32.D464 2003)

This text seeks to overcome an imbalance in traditional consumer behavior texts by incorporating biological, sociological, and anthropological theories into the core of the work. The aim is to addresses important issues such as time, space and consumption; consuming needs and values, semiotics, identity, the body, eating disorders and drug-taking. The text looks at consuming behavior in the context of general changes in society through adopting a historical perspective. It seeks to adopt a neutral view of consuming behavior rather than the more traditional adoption of the producers' perspective, and to look at the contemporary issues affecting consuming behavior in today's world.

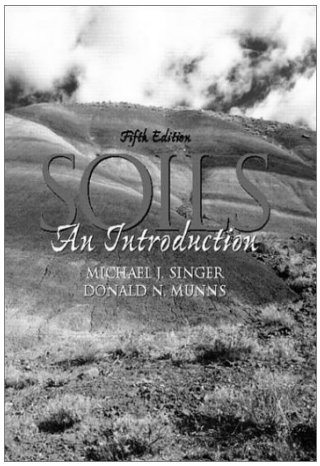


The NEW project management: tools for an age of rapid change, complexity and other business realities. Frame, J. Davidson. 2nd ed. San Francisco: Jossey-Bass Publishers, 2002. (HD69.P75F813 2002)

In a business environment where complexity, chaos, and uncertainty dominate, the old tried-and-true methods of managing projects no longer work well. Whether undertaking conventional projects in construction or the defense industry or pursuing information-age projects in such areas as information systems, finance, or research and development, many project managers have discovered that conventional wisdom is only marginally relevant to them in these turbulent times. This book examines the new realities of project management: managing risks; maintaining quality of goods and services; outsourcing; satisfying customers; and communicating with managers, customers, vendors, and staff. It also outlines the new skills which today's managers must have in order to be successful such as establishing and maintaining the project support office, new techniques for scheduling-including critical chain and time-boxed scheduling-and bridging the business-technology gap when developing project requirements. It is good for professional especially managers.

MANAGEMENT: leading people and organizations in the 21st century. Dessler, Gary. Upper Saddle River: Prentice-Hall, 2002. (HD31.D476 2002 f)

The book provides readers with a practical and concrete explanation of the concepts and techniques they will need as managers in today's new organizations. Globalization, deregulation, and technological advances mean that today's organizations have to be more competitive than ever before and be ready to respond quickly to change if they are to thrive in this intensely competitive new environment. To achieve this responsiveness and competitiveness, new management methods and philosophies have emerged, such as boundaryless organizations, team-based structures, Internet-based managing, scenario planning, and commitment building. Managing—leading people and organizations and 21st century businesses—will depend on maintaining open, communicative, and responsive organizations, in a large part by relying on human capital. The sequence of chapters in this book follows the familiar "planning, organizing, leading, controlling" process format, and the contents and continuing themes stress the leading-edge management concepts and techniques readers will need to lead today's and tomorrow's organizations.

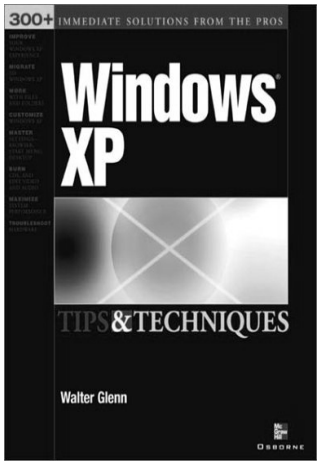


SOILS: an introduction. Singer, Michael J. & Munns, Donald N. 5th ed. Upper Saddle River: Prentice Hall, 2002. (S591.S6181 2002)

Soils: an introduction provides readers with a fresh approach to the study of soils. Covering all major topics, the text utilizes a unique “building the pedon” model to provide readers with a single soil concept upon which to build and learn. The goal is to help readers understand the parts that contribute to the whole soil individual and then appreciate how those parts function together.

PORTABLE MBA in management. Cohen, Allan R. 2nd ed. New York: John Wiley & Sons, 2002. (HD31.C679 2002)

This new addition to the "Portable MBA" series presents an executive management guide to issues such as teamwork, change, and leadership. Part 1 addresses personal and interpersonal needs such as leadership styles and methods, career development, and power and politics from ethical and strategic viewpoints. Part 2 examines needs at the organizational level, including organizational design, human resource management, and diversity. The book combines both conceptual and practical material. The diagnostic questions posed in the power and politics section provide an excellent tool for managers to assess the ethical implications of their actions.

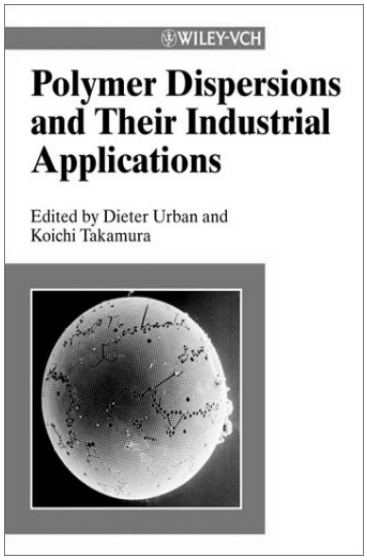


WINDOWS XP: tips and techniques. Glenn, Walter and White, Rowena. New York: McGraw-Hill/Osborne, 2002. (QA76.76.P4G558 2002)

This text explains updates techniques for installing and configuring the latest version of Windows. The authors identify new features in both the home and professional editions. Topics include organizing the desktop, running applications, printing and faxing, networking, working remotely and offline, setting Internet options, using Windows media player, editing the registry, and backing up and restoring Windows. This book is useful for anybody using Windows XP.

EXPORT/import procedures and documentation. Johnson, Thomas E. 4th ed. AMACOM, 2002. (fHF1416.5.J69 2002)

This book focuses on the procedures for exporting and importing and the relevant documentation. Although the procedures and documents generally arise from legal requirements in the United States or foreign countries, I have tried to present the information in a practical, non-technical manner. This book may be of help to freight forwarders, customs brokers, transportation carriers and others, but it is primarily intended for manufacturers who are exporting their own products or importing raw materials or components or for importers of finished goods. Since readers of this book will have varying levels of expertise, I have tried to discuss the subject at an intermediate level. Hopefully, this book will be not only a useful training tool for beginners but also a reference work for more experienced exporters and importers as new situations arise.

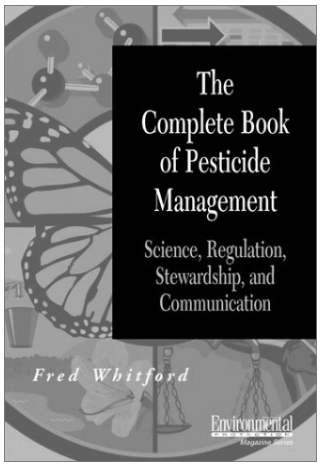


POLYMER dispersions and their industrial applications. Urban, Dieter & Takamura, Koichi, eds. Weinheim: Wiley-VCH, 2002. (QD382.W3P783 2002)

This book discusses the world of aqueous polymer dispersions from the viewpoint of how they are applied. For a better understanding it starts with a general description of the synthesis of polymer dispersions and their characterization. The following chapters are dedicated to a wide variety of applications, including history, modern processes and typical formulations and performance.

HANDBOOK for restoring tidal wetlands. Zedler, Joy B., ed. Boca Raton: CRC Press, 2001. (QH75.H236 2001)

The book provides a broad-based compilation of case studies and principles, information that authoritatively guides the management of tidal wetland restoration sites. Thoroughly illustrated with more than 170 figures and tables, the book covers a full range of topics. These topics include the conceptual planning of coastal wetlands restoration; strategies for the manipulation of hydrology and soils; the re-establishment of vegetation and assemblages of fishes and invertebrates and the process of assessing, monitoring and sustaining restored wetlands.

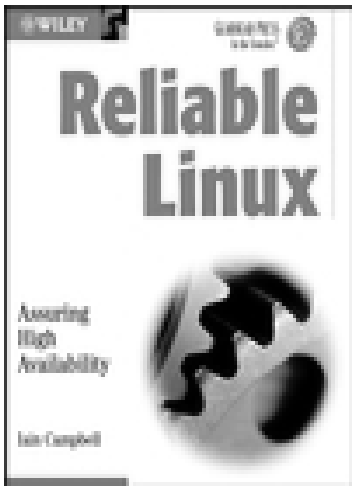


The COMPLETE book of pesticide management: science, regulation, stewardship, and communication. Whitford, Fred, ed. Warerendale: Wiley-Interscience, 2002. (RA1270.P4C737 2002)

This book offers an exhaustive guide to the history, uses, and future of pesticide management. Aiming to be both technically sound and easy to understand, this volume contains 18 chapters covering the history of pesticide regulation, human health risk assessment, epidemiology, ecological risk assessments, water quality risk assessment, product development and registration, pesticide labels, liabilities and lawsuits, environmental site assessments, occupational use of pesticides, protective equipment, employee communication, emergencies, insurance, educating the community, workforce, and customers; risk communication, and the future of pesticide use. Engineers, scientists, toxicologists, industrial hygienists, and extension and commercial application industry professionals, as well as students of these fields, will find this book to be an indispensable resource.

POLARIMETRIC doppler weather radar: principles and applications. Bringi, V.N. & Chandrasekar, V. Cambridge: Cambridge University Press, 2001. (QC973.5.B858 2001)

This book provides a detailed introduction to the principles of Doppler and polarimetric radar, focusing in particular on their use in the analysis of weather systems. The design features and operation of practical radar systems are highlighted throughout the book in order to illustrate important theoretical foundations. The book will be of great value to graduate students of electrical engineering and atmospheric science as well as to practitioners involved in the applications of polarimetric radar systems.

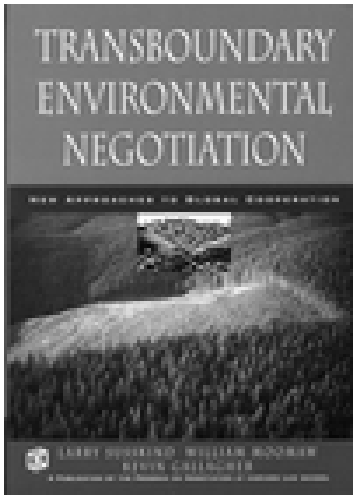


RELIABLE Linux: assuring high availability. Campbell, Iain. New York: John Wiley & Sons, 2002. (QA76.76.P4C188 2002)

This book shows system administrators, managers, and developers how to scale up Linux to run on large server systems in order to maintain high availability for e-commerce applications. It brings readers quickly up to speed on Linux 2.4, the latest version, and its new enterprise features, providing detailed instructions on analyzing, setting up, and maintaining robust Linux servers that can operate reliably with little or no downtime. Readers will learn about risk analysis, fault tolerance, configuration, monitoring, backup, and recovery. They'll also get top-notch advice on Linux's new features, including Logical Storage Management (LSM), alternative file systems, and high-availability clusters.

SUSTAINABLE water resources management. Malkina-Pykh, I.G. & Pykh, Y.A. Southampton: WIT Press, 2003. (TC405.M251 2003)

This book provides a broad introduction to the subject and discussing some of the fundamental factors and approaches connected with water sustainability. Written for both advanced undergraduates and first year postgraduates in water resources, technology and planning and such related areas as water economics, water-society links and water impacts on the global environment, it will also be of interest to the many professionals in industries concerned with water technology, management and systems sustainability. Others who will find this volume useful include those active in water project management, water information systems, systems analysis and simulation of water systems.

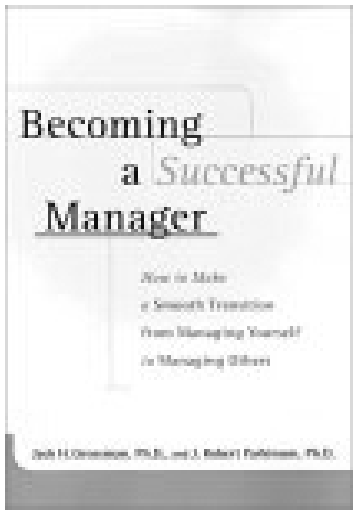


TRANSBOUNDARY environmental negotiation: new approaches to global cooperation. Susskind, Lawrence, Moomaw, William & Gallagher, Kevin, eds. San Francisco: Jossey-Bass, 2002. (K111.E6T772 2002)

Transboundary Environmental Negotiation is an important collection of articles generated by faculty and graduates students at MIT, the Fletcher School of Law and Diplomacy at Tufts University and the Program on Negotiation at Harvard Law School. The contributors emphasize the ways in which global environmental treaty-making can be improved. They highlight new environmental problems that pose difficult global negotiation challenges and suggest new strategies for involving a range of nongovernmental actors in ways that can overcome the obstacles to transboundary environmentalism.

HOUSING policy: an introduction. Balchin, Paul & Rhoden, Maureen. 4th ed. London: Routledge, 2002. (HD7333.A3B174 2002)

Housing Policy: An Introduction provides an accessible introduction by describing policies and explaining their effects, as well as through an analysis of recent changes and their implications, using practical examples. It is ideal for the student tackling housing policy at all levels, but also as a background to current housing policy for researchers and professional practitioners. It provides a strong foundation in housing policy for students taking qualifications in housing, urban studies, social policy and social administration.



BECOMING a successful manager: how to make a smooth transition from managing yourself to managing others. Grossman, Jack H. and Parkinson, J. Robert. New York: Contemporary Books, 2002. (HD38.2.G878 2002)

You have been promoted to manager. What do you do next? Becoming a Successful Manager provides hands-on exercises and advice to help neophyte managers make the difficult transition from managing only themselves to managing others. It shows new managers how to create a positive, productive environment, one that motivates and brings out the best in employees while providing maximum benefit to their employers. Topics include: Creating a healthy culture; Conducting meaningful performance reviews; Delegating responsibilities; Handling harassement and resolving conflicts: and Hiring effective people and more.

MAKLUMAT PENYELIDIKAN DARI USM / *RESEARCH INFORMATION FROM USM*

BIODEGRADATION OF MICROBIAL POLYESTERS P(3HB) AND P(3HB-co-3HV) UNDER THE TROPICAL CLIMATE ENVIRONMENT

Mohamed Isa Abd. Majid and Akmal Djamian Hakam
National Poison Centre
USM Main Campus

ABSTRACT
The biodegradation of poly(3-hydroxybutyrate), P(3HB), and its copolymer poly(3- hydroxybutyrate-co-3-hydroxyvalerate), *P(3HB-co-3HV)* produced by a locally isolated bacteria identified as *Erwinia* sp. USMI-20 were carried out by using soil burial test and immersion test method at various places under the tropical environment in West Sumatra, Indonesia. The isolation of P(3HA)-degrading microorganisms was done by the *in vitro* rapid plate test method and was further characterized by using biochemical reactions. Our results showed that P(3HB) biodegraded at a rate of 3.6 % per week in activated sludge, 1.9% per week in soil, 1.5% per week in lake water and 0.8% per week in Indian Ocean sea water. The degradation rates for *P(3HB-co-3HV)* were 17.8 % per week in activated sludge, 6.7% per week in soil, 3.2 % per week in lake water and 2.7 % per week in Indian Ocean sea water. The biodegradation of both polymers were highest after burial into activated sludge with a half-life ($T_{1/2}$) of 14 weeks and the time for l00 % degradation ($T_{\sim 100\%}$) of 28 weeks for P(3HB), and a $T_{1/2}$ of 3 weeks and $T_{\sim 100\%}$ at 6 weeks for *P(3HB-co-3HV)*. In this study, ten bacteria which were responsible for the biodegradation of P(3HB) and *P(3HB-co-3HV)* film were isolated and identified from the various places studied under the tropical environment. They were *Bacillus* sp. FAAC-2202, *Enterobacter* sp. FAAC-2207 , *Bacillus* sp. FAAC-2209 and *Proteus* sp. FAAC-2203 obtained from activated sludge, *Bacillus* sp. FAAC-2201 and *Alcaligenes* sp. FAAC-2210 from soil, *Alcaligenes* sp. FAAC-2205, *Micrococcus* sp. FAAC-2206 and *Pseudomonas* sp. F AAC-2208 from lake water and *Proteus* sp. FAAC-2204 from Indian Ocean sea water.

HOTEL OCCUPANTS AND OWNERS RESPONSES TO ENERGY SAVING OPPORTUNITIES IN MALAYSIAN HOTELS

Dr. Zaidi bin Abdullah
School of Housing, Building and Planning
USM Main Campus

ABSTRACT
According to the World Environmental Protection Agency, global warming has threatened our living conditions and increased global temperature. The increase in electricity and gas price demanded by Tenaga Nasional Berhad is RM27 .66 billion in August 2000 (Berita Harian , 2000). Alternative fuel like palm oil, landfill biogas, solar and high- voltage direct current program are not solving the problems totally. Malaysian hotels' electricity consumption average 55 million annually and can be cut as much as three billion kilowatt-hours annually with the implementation of energy efficiency opportunities. This study used "Lighting energy savings opportunities in hotel guestrooms: Results from a research study at the Redondo Beach Crowne Plaza" research conducted by Lawrence Berkeley Environmental Technology Division as the basis. This paper examined several products and systems that are used to promote energy efficient lighting in residential, commercial, and industrial applications. The paper also provided hotel owners and occupants' responses towards the use of solar products and energy saving devices.

THE DEVELOPMENT OF GEO-SPATIAL DATABASE FOR INTELLIGENT TRANSPORT SYSTEM (ITS)

Mohd Sanusi S. Ahmad, Ahmad Farhan Mohd Sadullah and Wan Muhd Aminuddin Wan Hussin
School of Civil Engineering
USM Engineering Campus

ABSTRACT
This research is concerned with the development of geo-spatial database that is an essential component of the transportation infrastructure. It is the basis of the transportation planning in the sense that it helps in geo-referencing position, classification of road classes and road attributes. The outcome of this research will formally help the transportation infrastructure planning agencies in the management of integrated geo-spatial data referencing system. The research methodology covers the management of complete spatial coordinated data in the presentation of the high order elements of the transportation infrastructure that also includes on site computer aided geomatic survey. The case study includes the development of geo-spatial database for the Ipoh transportation infrastructure planning. This will help in the process of monitoring and controlling road traffic in real time by means of commercial or private systems. Geo-spatial database will helps the management of transportation system and improves the transportation infrastructure by taking into the consideration the maximum and efficient transportation safety aspects.

APPLICATION OF MUNG BEAN FLOUR IN HEALTH BISCUITS FORMULATION

Prof. Madya Noor Aziah Abdul Aziz and Mohammad Noor Adros Yahya
School of Industrial Technology
USM Main Campus

ABSTRACT
Chemical, physical and quality attribute of three types of cookies namely: a) Control (100% wheat flour), (b) Mung bean (50% wheat flour + 35% mung bean flour + 15% cornflour and (c) Chickpea (50% wheat flour + 35% chickpea flour + 15% cornflour) were investigated. The mungbean and chickpea flour exhibited dough handling properties similar to the control. The three types of cookies differ significantly ($p<0.05$) in terms of ash, protein, crude fibre and total carbohydrate but not in moisture and fat. Chickpea cookies had the highest protein level. RS differ significantly ($p<0.05$) among cookies. Mung bean flour had the highest RS but after baking, chickpea had the highest level of RS. Chickpea cookies had highest diameter, lowest thickness and difference in weight. Spread ratio is highest in chickpea cookies which differ significantly ($p<0.05$) with those from mung bean and control. Textural measurement result indicated significant difference ($p<0.05$) in hardness, fracturability, elasticity, gumminess, adhesiveness and chewiness among all the samples.Chickpea showed the highest value in hardness and fracturability. Sensory evaluation showed there is no significant difference ($p>0.05$) in colour, aroma and fracturability. Chickpea cookies had the best flavour and acceptability and differ significantly ($p<0.05$) than the control cookies.

DETECTION BY IN SITU HYBRIDIZATION OF SPECIFIC HIGH RISK HPV IN ARCHIVAL TISSUE OF INVASIVE CERVICAL CARCINOMA AND CERVICAL INTRAEPITHELIAL NEOPLASIA USING SPECIFIC BIOTYNYLATED HPV DNA PROBE IN CONJUNCTION WITH P53 RB GENE PROTEIN EXPRESSION

Nor Hayati Othman and M. Madhavan
School of Medical Sciences
USM Health Campus

ABSTRACT
Immunohistochemical methods is a practical technique in identifying tumour suppressor gene at protein level. High p53 index is statistically significant only in the invasive squamous cancers. Between p53 and Rb, Rb protein index is a better marker for prediction of prognosis and understanding cervical cancer biological behaviour. Coupling both tumour suppressor markers in analyzing cervical lesions could yield a stronger prediction on the biological behaviour of the cervical lesions. The Malays seems to have higher prevalence in HSll., and SCC compared to the Chinese probably due to lack of awareness in cervical screening programme.

ATHLETIC TRAINING AND PSYCHOLOGICAL PREDICTORS OF INJURY: A CASE STUDY OF MALAYSIAN PROFESSIONAL FOOTBALL PLAYERS INVOLVED IN MALAYSIAN FOOTBALL LEAGUE.

Assoc. Prof. Dr. N. Kumaraswamy, Prof. Rabindarjeet Singh and Mohad Anizu bin Mohd Nor
School Medical Sciences
USM Health Campus

ABSTRACT
Sport psychology deals with many aspects, which are important in sports and games. Injury is one of the common things one can observe in most of the sport and games. Injuries occur either by accident or intentionally. There are many reasons one can think of injuries occurring and that psychological aspect is considered more important. Psychological predictors, psychological impacts, and psychological aspects of rehabilitation are vital to know. Therefore, the objective of the study is to determine *psychological predictors* leading to *athletic injury* with focusing to Malaysian football players involved in Malaysian Professional Football League. A descriptive method of research was used to determine the *psychological predictors* of injury among the selected state team players. A pilot study has been carried out to test the validity and reliability of the questionnaire. Cluster sampling was used to get the actual number of subjects. Based on this sampling method, all teams were clustered into five groups (North, South, East, West and East Malaysia). From these five groups, two teams from each cluster have randomly picked up as a subject (25 players each team x 10 teams = 250 players).. Questionnaires, observation, and interview were the instruments that being used in determining psychological predictors of injury. For statistical analysis, Multiple Logistic Regression was used to identify the psychological predictors of injuries by using the Statistical Package for Social Science (SPSS) version 9.0 for windows. The results of this study has showed that most of the Malaysian professional football players scored higher in neuroticism, and lower in agreeableness and conscientiousness. The subjects were also found experiencing anxiety with poor *self-esteem* and *mental toughness* as well.

THE EFFECT OF ACUTE AND CHRONIC PHYSICAL ACTIVITY AND NET ENERGY BALANCE ON PLASMA LEPTIN CONCENTRATION IN YOUNG ADULTS

Harbindar Jeet Singh
School Medical Science
USM Health Campus

ABSTRACT

Leptin, a 16 amino acid product of ob gene, is thought to play an essential role in the regulation of adiposity. Physical activity forms an important tool in the management of weight regulation. The exact influence of intense physical activity on plasma leptin concentration is unknown. It is also unclear if the influence of an acute bout of physical activity on serum leptin levels is the same in active and sedentary individuals. This study therefore investigated the effects of exercise on plasma leptin concentration in active and non-active young adults.

This study investigated the effects of exercise on plasma leptin concentration in active and non-active young adults. Active subjects (n=10) consisted of the national junior football players and non-active subjects consisted of college students who did not take part in regular physical activity. The subjects were matched closely for age, race, body mass index (BMI) and % body fat. Overnight fasting blood samples were collected before and immediately after a 45-minute bout of exercise. Lipid profiles and plasma leptin levels were estimated in all blood samples. In addition, skinfold thickness measurements and dietary records were obtained from all the subjects to estimate the % body fat and energy balance respectively.

All data analysed using SPSS and are presented as mean ± SEM. No statistically significant differences were found in BMI, % body fat, total energy balance, lipid profiles or plasma leptin concentrations between the two groups. Plasma leptin concentration did not change significantly immediately following exercise although mean leptin concentrations appear to increase slightly post-exercise.

In conclusion, an acute bout of exercise does not decrease plasma leptin concentration if anything there appears a trend towards a slight rise in plasma leptin. This may be a consequent of its decreased clearance during exercise. Similarly, energy intake or balance did not significantly alter plasma leptin levels in both the active and non-active young individuals. However, further studies are required to confirm these findings.

EVALUATION OF MICROMECHANICAL PROPERTIES OF ADVANCED POLYMER COMPOSITES

Azhar Abu Bakar and F. R. Jones
School of Industrial Technology
USM Main Campus

ABSTRACT

A new methodology for the prediction of stress transfer in the single fibre fragmentation test, known as the Plasticity Effect Model (PEM), has been used. A new data reduction technique, known as the Cumulative Stress Transfer Function or CSTF technique that takes the different damage events observed during fragmentation test into account, was used to obtain a measure of fibre-matrix adhesion from the fragmentation test. The effect of carbon fibre surface treatment on the interface of micro-composites properties has been studied using the CSTF technique. It was found that CSTF technique could predict fibre-matrix adhesion in single fibre fragmentation test more accurately than the conventional data reduction technique specimens. In this study, a resin system that is used commercially has been used to produce fragmentation test specimens. An advanced composite system used in commercial applications has been prepared with carbon fibre with differing surface finish. The interface dominant mechanical properties of the unidirectional materials have been assessed. Thus, interlaminar shear strength, transverse strength and modulus as well as unidirectional tensile strength and modulus have all been measured. The relationship between interface quality and composite performance is attempted. It was found that the correlation between the properties of micro- and macro-composite is good.

HEAVY METALS REMOVAL BY SULFATE-REDUCING BACTERIA

Wan Mustaffa Wan Din and Uyub Abdul Manaf
Centre for Marine and Coastal Study
USM Main Campus

ABSTRACT

Sulfate-reducing bacteria was enrich from soil samples using modified medium B . (Postgate, 1984). Soil samples collected from Kuala Juru and Sungai Pinang, Pulau Pinang mangrove swamp area. The identified group known as acetate oxidation, non acetate oxidation (lactate oxidation) and autothroph consortium. All the three consortiumm shows their ability to remove zinc and cadmium heavy metal added to the medium. Although the removal mechanism still unidentified, the heavy metal removal ability was different according to consortium, age of culture, type and concentration of heavy metal.

PERKHIDMATAN KESEDARAN KEMASKINI / *CURRENT AWARENESS SERVICE*

ADHESIVES

1) HETEROCYCLIC-based epoxy-terminated structural adhesive. II. Curing, adhesive strength, and thermal stability. Sankar, Bhuniya and Sukumar, Maiti. *Journal of applied polymer science.* 2002: *86*(14), 3520-3526.
2) The LEACHING kinetics of acetone in an acetone-polyurethane adhesive waste. Font, R., *et al. Journal of applied polymer science.* 2002: *85*(9), 1945-1955.
3) SOLVENT-free radiation-curable polyacrylate pressure-sensitive adhesive systems. Czech, Z. and Milker, R. *Journal of applied polymer science.* 2003: *87*(2), 182-191.

AGRICULTURE

4) BIOLOGICAL control of bacterial speck of tomato under field conditions at several locations in North America. Wilson, M., *et al. Phytopathology.* 2002: *92*(12), 1284-1292.
5) HERBICIDE effects of essential oils. Tworkoski, Thomas. *Weed science.* 2002: *50*(4), 425-431.
6) NONCHEMICAL management of soil borne pests in fresh market vegetable production systems. Chellemi, D.O. *Phytopathology.* 2002: *92*(12), 1367-1372.
7) The STARCH industry - its commercial potential. Tan, S.L., *et al. The planter.* 2002: *78*(918), 485-494.

AQUACULTURE

8) HEAVY metal concentrations in water and tiger prawn (enaeus monodon) from grow-out farms in Sabah, North Borneo. Mohammed Iqbal Hashmi, *et al. Food chemistry.* 2002: *79(*151-156*)*
9) INFLUENCE of pesticide-fertilizer combination on food intake, growth, and conversion efficiencies of oreochromis mossambicus. Palanivelu, V., *et al. Bulletin of environmental contamination and toxicology.* 2002: *69*(6), 908-913.
10) RAPID loss of lampricide from catfish and rainbow trout following treatment. Dawson, Verdel K., *et al. Journal of agricultural and food chemistry.* 2002: *50*(23), 6780-6785.
11) ROLE of feed ingredients in the bromophenol content of cultured prawns. Whitfield, Frank B., *et al. Food chemistry.* 2002: *79*(3), 355-365.
12) WILL one get away? To prevent its genetically modified salmon devastating wild populations if they escaped, a US company plans to make them all sterile females. Cohen, Philip. *New scientist.* 2002: *175*(2360), 12-13.

BEVERAGES

13) CONTROL of nutritional labels in beverages with added vitamins: screening of β-carotene and ascorbic acid contents. Rodriguez-Comesana, M., *et al. Food chemistry.* 2002: *79*(2), 141-144.

BIOTECHNOLOGY

14) ASIA'S biotech tiger. Liu, Edison. *New scientist.* 2002: *175*(2360), 54-57.
15) FORTIFYING plants through biotechnology. D'Aquino, Rita. *Chemical engineering progress.* 2002: *98*(10), 10-13, 15.
16) GENOMICS moves on: Companies that focused on gene sequencing and function amassed financial and intellectual wealth but now strive to be sustainable businesses. Thayer, Ann M. *Chemical & engineering news.* 2002: *80*(41), 25-26, 28-30, 32-34, 36.
17) The GREAT Mexican maize scandal. Pearce, Fred. *New scientist.* 2002: *174*(2347), 14-16.
18) MINING the genome: Methods sift through thousands of compounds, gene products to find promising prospects. Borman, Stuart A. *Chemical & engineering news.* 2002: *80*(41), 47-50.

CHEMICALS AND CHEMISTRY

19) COMPUTER learning hits its stride: Online educational systems, software, and molecular modeling are a boon for teaching chemistry, from high school to graduate school. Wilson, Elizabeth K. *Chemical & engineering news.* 2002: *80*(37), 35-39.

20) CONVERSION of soybean oil into ion exchange resins: Removal of copper (II), nickel (II), and cobalt (II) ions from dilute aqueous solution using carboxylate-containing resin. Liu, Z.S. and Erhan, S.Z. *Journal of applied polymer science.* 2002: *84*(13), 2386-2396.
21) GASES of a lesser nobility: After 40 years, noble-gas chemistry is much less in vogue but can still yield surprising discoveries. Dagani, Ron. *Chemical & engineering news.* 2002: *80*(40), 27-29.
22) NITROGENASE keeps surprising: Ligand missing from earlier structures revealed in iron-molybdenum cofactor. Yarnell, Amanda. *Chemical & engineering news.* 2002: *80*(36), 9.

COMPUTERS AND ELECTRONICS

23) PHONE safety debate reignites: The latest evidence suggests that cell phone radiation can damage human cells. Graham-Rowe, Duncan. *New scientist.* 2002: *174*(2349), 16.
24) The TABLET PC strives to redefine portable computing. Karagiannis, Konstantinos. *PC magazine*. 2002: *21*(21), 32-34, 36, 38, 40.

CONTRUCTION INDUSTRY

25) ENVIRONMENTAL performance evaluation (EPE) for construction. Tam, C.M., *et al. Building research & information.* 2002: *30*(5), 349-361.
26) MIX & match: Concrete batching plant innovator ORU is being reinvigorated under its new IMER ownership. O'Sullivan, Brian. *International construction.* 2002: *41*(9), 15-16.
27) SINGAPORE'S construction: Moving toward a knowledge-based industry. Ofori, George. *Building research & information.* 2002: *30*(6), 401-412.
28) SWEDISH construction culture, quality management and collaborative practice. Brochner, Jan, *et al. Building research & information.* 2002: *30*(6), 392-400.

DAIRY

29) The EFFECTS of certain factors on the properties of yoghurt made from ewe's milk. Bonczar, G., *et al. Food chemistry.* 2002: *79*(1), 85-91.
30) MANUFACTURE of fresh soft white cheese (domiati-type) from ultrafiltered goats' milk. Mohamed A. Mehaia. *Food chemistry.* 2002: *79*(4), 445-452.
31) RHEOLOGICAL properties of yoghurt made with milk submitted to manothermosonication. Vercet, Antonio, *et al. Journal of agricultural and food chemistry.* 2002: *50*(21), 6165-6171.

ENERGY SOURCES

32) PULLING power: They're out there somewhere… we can feel their irresistible pull. Nowak, Rachel. *New scientist.* 2002: *175*(2361), 42-45.
33) SECRET plan to revive British nuclear power industry. Edwards, Rob. *New scientist.* 2002: *175*(2350), 14-15.

ENVIRONMENTAL PROTECTION

34) CHANGING trends in sulfur emissions in Asia: Implications for acid deposition, air pollution, and climate. Carmichael, Gregory R., *et al. Environmental science & technology.* 2002: *36*(22), 4707-4713.
35) GREEN foundations: It's time to make the concrete jungle emulate the real thing. Pearce, Fred. *New scientist.* 2002: *175*(2351), 39-40.
36) IMPLEMENTING environmental policies in developing countries through decentralization: the case of protected areas in Bahia, Brazil. De Oliveira, Jose Antonio Puppim. *World development.* 2002: *30*(10), 1713-1736.
37) INDUSTRIAL ecology: A chemical engineering challenge. Allen, David T. and Butner, R. Scott. *Chemical engineering progress.* 2002: *98*(11), 40-45
38) OCEANIC biogeochemical controls on global dynamics of persistent organic pollutants. Dachs, Jordi, *et al. Environmental science & technology.* 2002: *36*(20), 4229-4237.
39) OCCURRENCE of shell deformities in green-lipped mussel perna viridis (linnaeus) collected from Malaysian coastal waters. Yap, C.K., *et al. Bulletin of environmental contamination and toxicology.* 2002: *69*(6), 877-884.
40) OUTSOURCING environmental compliance. Blocki, Stephen W. *Chemical engineering progress.* 2002: *98*(10), 42-46.
41) PREPARE for the miscellaneous organic NESHAP. Hanna, Toby and Weiss, Kenneth. *Chemical engineering progress.* 2002: *98*(8), 44-49.
42) The ROAD from Rio: In 1992, we thought we could change the world. Edwards, Rob. *New scientist.* 2002: *175* (2356), 30-36.

FOOD

Fish and marine products

43) ALTERNATIVE strategies for PCB risk reduction from contaminated seafood: options for children as susceptible populations. Judd, N.L., *et al. Bulletin of environmental contamination and toxicology.* 2002: *69*(6), 847-854.
44) BIOGENIC amines in jeotkals, Korean salted and fermented fish products. Mah, Jae-Hyung, *et al. Food Chemistry.* 2002: *79*(2), 239-243.
45) CHITOSAN as an edible invisible film for quality preservation of herring and atlantic cod. Jeon, You-Jin, *et al. Journal of agricultural and food chemistry.* 2002: *50*(18), 5167-5178.

Fruits, vegetables and nuts

46) ANTIOXIDANT and antiproliferative activities of common vegetables. Chu, Yi-Fang, *et al. Journal of agricultural and food chemistry.* 2002: *50*(23), 6910-6916.
47) ANTIOXIDANT compounds from bananas (Musa Cavendish), Someya, Shinichi, *et al. Food chemistry.* 2002: *79*(3), 351-354.
48) CHARACTERIZATION of the soluble allergenic proteins of cashew nut (anacardium occidentale L.). Teuber, Suzanne S., *et al. Journal of agricultural and food chemistry.* 2002: *50*(22), 6543-6549.
49) CHARACTERIZATION of volatiles in costa Rican guava [psidium friedrichsthalianum (berg) niedenzu] fruit. Pino, Jorge A., *et al. Journal of agricultural and food chemistry.* 2002: *50*(21), 6023-6026.
50) EFFECT of processing techniques at industrial scale on orange juice antioxidant and beneficial health compounds. Gil-Izquierdo, Angel, *et al. Journal of agricultural and food chemistry.* 2002: *50*(18), 5107-5114.
51) EFFECTS of maturity and processing variables on heat penetration times, firmness, and drained weight of diced tomatoes (halley bos 3155 CV). Ma, Wendy H. and Barrett, Diane M. *Journal of processing preservation.* 2002: *26* (2), 75-89.
52) PESTICIDE multiresidue analysis in fresh and canned peaches using solid phase extraction and gas chromatography techniques. Danis, T., *et al. Bulletin of environmental contamination and toxicology.* 2002: *69*(5), 674-681.
53) PHYSICAL pre-treatment of plums (prunus domestica). Part 1. Modeling the kinetics of drying. Di Matteo, Marisa, *et al. Food chemistry.* 2002: *79*(2), 227-232.

Meat products

54) SO simple, almost anyone can do it. Westphal, Sylvia Pagan. *New scientist.* 2002: *175*(2356), 16-17.

FOOD INDUSTRY

55) DETERMINATION of hydroxymethylfurfural in commercial jams and in fruit-based infant foods.Rada-Mendoza, Maite, *et al. Food chemistry.* 2002: *79*(4), 513-516.
56) FAST and casual: Today's food service trends. Sloan, A. Elizabeth. *Food technology.* 2002: *56*(9), 34-36, 38, 40, 42, 44-54.
57) FORMULATING foods for diabetics. Mermelstein, Neil H. *Food technology.* 2002: *56*(10), 42-44.

FOOD MICROBIOLOGY

58) ACRYLAMIDE in foods. Giese, James. *Food technology.* 2002: *56*(10), 71-74.
59) ACTIVATION of remaining key enzymes in dried under-fermented cocoa beans and its effect on aroma precursor formation. Misnawi, *et al. Food chemistry.* 2002: *78*(4), 407-417.
60) AGRICULTURAL trade, development and toxic risk. Dasgupta, Susmita, *et al. World development.* 2002: *30*(8), 1401-1412.
61) PESTICIDE residue analysis of infant formula in India. Mishra, R., *et al. Bulletin of environmental contamination and toxicology.* 2002: *69*(5), 667-673.

FOOD TECHNOLOGY

62) CATCHING up with diabetes. Ohr, Linda Milo. *Food technology.* 2002: *56*(9), 87-92.
63) CONSUMER acceptance of genetically modified foods. Lusk, Jayson L. and Sullivan, Patrick. *Food technology.* 2002: 56(10), 32-37.
64) DETERMINING the safety of bioengineered microorganisms. Rowlands, J. Craig. *Food technology.* 2002: *56*(10), 28-31.
65) EFFECT of storage on resistant starch content of processed ready-to-eat foods. Namratha, J., *et al. Food chemistry.* 2002: *79*(3), 395-400.
66) FOOD preservatives: Antimicrobials, antioxidants, and metal chelators keep food fresh. Dalton, Louisa. *Chemical & engineering news.* 2002: *80*(45), 40.
67) LOOKS good enough to eat? So tuck in. Dixon, Nicola. *New scientist.* 2002: *175*(2356), 18.

INDUSTRIAL WASTES

68) The GLOBAL distribution of acidifying wet deposition. Rodhe, Henning, *et al. Environmental science & technology.* 2002: *36*(20), 4382-4388.
69) POTENTIAL method for reducing emissions of polycyclic aromatic hydrocarbons from the incineration of biological sludge for the terephthalic acid manufacturing industry. Wang, Lin-Chi, *et al. Environmental science & technology.* 2002: *36*(15), 3420-3425.
70) REMOVAL of cadmium and zinc from aqueous solutions using red mud. Gupta, Vinod K. and Sharma, Saurabh. *Environmental science & technology.* 2002: *36*(16), 3612-3617.

INFORMATION TECHNOLOGY

71) INFORMATION technology for development: from charity to sustainability. Guice, Jon and Eischen, Kyle. *Development.* 2002: *45*(4), 29-34.
72) LIFE'S a sim and then you're deleted. Brooks, Michael. *New scientist.* 2002: *175*(2353), 48-49.
73) SOCIAL development, information and knowledge: whatever happened to communication? Hamelink, Cees J. *Development*. 2002: *45*(4), 5-9.
74) STOLEN code: To many programmers, America's laws on software patents are a disaster. Grossman, Wendy M. *New scientist.* 2002: *175*(2362), 36-39.

MACHINERY & EQUIPMENT

75) ULTRASOUND-coming over loud and clear. Noble, Tom. *Chemical engineering progress.* 2002: *98*(9), 10-12.

MANAGEMENT

76) An EXPLORATION of two competing perspectives on informational contexts in top management strategic issue interpretation. Kuvaas, Bard. *Journal of management studies.* 2002: *39*(7), 977-1001.
77) WORK context and the definition of self: how organizational care influences organization-based self esteem. McAllister, Daniel J. and Bigley, Gregory A. *Academy of management journal.* 2002: *45*(5), 894-904.

MARKETING AND TRADE

78) TAX incentives for business investment: a primer for policy makers in developing countries. Zee, Howell H., *et al. World development.* 2000: *30*(9), 1497-1516.

MATERIALS ENGINEERING

79) NANOSCALE electronics: Bustling research is producing sophisticated laboratory demonstrations, but commercialization of nanometer-sized devices remains a ways off. Jacoby, Mitch. *Chemical & engineering news.* 2002: *80*(39), 38-43.

MEDICINAL PLANTS

80) ANTIOXIDANT properties of several medicinal mushrooms. Mau, Jeng-Leun, *et al. Journal of agricultural and food chemistry.* 2002: *50*(21), 6072-6077.
81) REGULATION drugs from plants stir debate: Technology promises huge benefits but also raises a number of new risks. Hileman, Bette. *Chemical & engineering news.* 2002: *80*(32), 22-25.

OFFICE AND BUSINESS BUILDINGS

82) EFFECT of mix retention and curing on low-cement walling blocks. Kerali, A.G. and Thomas, T.H. *Building research & information.* 2002: *30*(5), 362-366.

OILS AND FATS

83) FACTORS affecting pre-concentration of tocopherols and tocotrienols from palm fatty acid distillate by lipase-catalysed hydrolysis. Chu, B.S., *et al. Food chemistry.* 2002: *79*(1), 55-59.

PAINTS AND COATINGS

84) AUTOMOTIVE coatings: Paint companies offer new technologies and new products for both the bold and the cautious of the automotive industry. Tullo, Alexander H. *Chemical & engineering news.* 2002: *80*(42), 27-30.
85) DARK clouds over white pigment: Last year brutal for TiO2 despite massive consolidation in the industry. Tullo, Alex. *Chemical & engineering news.* 2002: *80*(42), 35.
86) EFFECT of different polymers on the efficiency of water-borne methyl amine adduct as corrosion inhibitor for surface coatings. Badran, Badran M., et al. *Journal of applied polymer science*. 2002: *85*(4), 879-885.
87) SYNTHESIS of novel reactive coalescing agents and their application in a latex coating. Lahtinen, Maarit, *et al. Journal of applied polymer science.* 2003: *87*(4), 610-615.

PALM OIL

88) GENETIC manipulation of the oil palm - challenges and prospects. Ravigadevi, Sambanthamurthi, *et al. The planter.* 2002: *78*(919), 547-562.

89) VALUE additions to oil palm. Yusof Basiron. *The planter*. 2002: *78*(918), 479-482.

PEST AND PEST CONTROL

90) BUG sprays: Formulations for killing and repelling insects include natural and synthetic products. Jacoby, Mitch. *Chemical & engineering news.* 2002: *80*(31), 35.

PETROCHEMICALS AND PETROLEUM

91) The WEST Falmouth oil spill after thirty years: The persistence of petroleum hydrocarbons in marsh sediments. Reddy, Christopher M., *et al. Environmental science & technology*. 2002: *36*(22),

PHARMACEUTICALS

92) BEYOND hatch-Waxman: Legislative action seeks to close loopholes in U.S. law that delay entry of generics into the market. Rouhi, A. Maureen. *Chemical & engineering news.* 2002: *80*(38), 53, 55-57, 59.

93) DRUGS will soon taste like candy. Westphal, Sylvia Pagan. *New scientist.* 2002: *175*(2350), 12.

94) GENERIC tide is rising: Expiring patent protections and pressures on makers of brand-name drugs bode well for the generic pharmaceutical industry. Rouhi, A. Maureen. *Chemical & engineering news.* 2002: *80*(38), 37-38, 40, 42-44, 46-51.

95) GENERICS next wave: Biopharmaceuticals. Rouhi, A. Maureen. *Chemical & engineering news*. 2002: *80*(38), 61-62, 64-65.

96) PAYING attention to unmet needs: Start-up, nonprofits are developing tools to fight diseases afflicting poor nations. Rouhi, A. Maureen. *Chemical & engineering news.* 2002: *80*(38), 67-68, 70-72, 74, 76.

97) SIGNED, sealed, and delivered: A seal of approval for dietary supplements and ingredients can mean different things. Reisch, Marc S. *Chemical & engineering news.* 2002: *80*(40), 14-16.

PLASTICS AND POLYMERS

98) ADDITIVE masterbatches make polyolefins degrade. Leaversuch, Robert. *Plastics technology.* 2002: *48*(10), 60-61.

99) DEGRADABLE polymers in a living environment: Where do you end up? Vert, Michel, *et al. Polymer international.* 2002: *51*(10), 840-844.

100) The EFFECT of elastomeric nano-particles on the mechanical properties and crystallization behavior of polypropylene. Zhang, Manli, *et al. Polymer.* 2002: *43*(19), 5133-5138.

101) EFFECTS of processing parameters and graft-copoly(propylene/maleic anhydride) on mechanical properties of thermoplastic natural rubber composites reinforced with wood fibres. Sameni, J.K., *et al. Plastics, rubber and composites.* 2002: *31*(4), 162-166.

102) EVOLUTION of interactions between water and native corn starch as a function of moisture content. Brouillet-Fourmann, S., *et al. Journal of applied polymer science*. 2002: *86*(11), 2860-2865.

103) EXTRUDED co-continuous polyester-polyalkene-carbon black composites influence of polyester glass transition on electrical properties. Pillin, I., *et al. Plastics, rubber and composites.* 2002: *31*(7), 300-306.

104) GUIDELINES for dryer design based on results from non-fickian model. Vinjamur, Madhu and Cairncross, Richard A. *Journal of applied polymer science.* 2003: *87*(3), 477-486.

105) IMPACT resistance of fibrous glass reinforced plastics using polycarbonate-polydimethylsiloxane block copolymer. Okamoto, Masaya. *Journal of applied polymer science.* 2002: *86*(5), 1123-1127.

106) INFLUENCE of compatibilizers on mechanical properties, crystallization, and morphology of polypropylene/scrap rubber dust blends. Phinyocheep, P., *et al. Journal of applied polymer science.* 2002: *86*(1), 148-159.

107) MECHANICAL properties and recyclability of thermoplastic elastomer composites of white rice husk ash-ethylene/ propylene/diene terpolymer-polypropylene. Siriwardena, S., *et al. Plastics, rubber and composites.* 2002: *31*(4), 167-176.

108) NEW advances in poly(ethylene terephthalate) polymerization and degradation. MacDonald, W.A. *Polymer international.* 2002: *51*(10), 923-930.

109) WATER-vapor-permeable polyurethane resin. Chwang, C.P., *et al. Journal of applied polymer science.* 2002: *86*(8), 2002-2010.

110) OIL resistance controlled by phase morphology in natural rubber/nitrile rubber blends. Sirisinha, Chakrit, *et al. Journal of applied polymer science.* 2003: *87*(1), 83-89.

111) OPTIMIZATION of a commercial brake pad formulation. Lu, Yafei, *et al. Journal of applied polymer science.* 2002: *84*(13), 2498-2504.

112) POE alloys replace liquid plasticizers in high-performance flexible PVC. Schut, Jan H. *Plastics technology.* 2002: *48* (10), 45-47.

113) PVDF latex foam composites provide high flame resistance. Sherman, Lilli Manolis. *Plastics technology.* 2002: *48* (11), 47, 49.
114) SURFACE structures of solvent-cast films prepared from poly(ethylene oxide)-segmented nylons. Mochizuki, Akira, *et al. Journal of applied polymer science.* 2002: *86*(1), 10-16.
115) SYNTHESIS and evaluation of sucrose-containing polymeric hydrogels for oral drug delivery. Shantha, K.L. and Harding, D.R.K. *Journal of applied polymer science.* 2002: *84*(14), 2597-2604.
116) SYNTHESIS of novel amphiphilic star-shaped poly(ε-caprolactone)-block-poly(N-(2-hydroxypropyl)methacrylamide) by combination of ring-opening and chain transfer polymerization. Lele, B.S. and Leroux, J.-C. *Polymer.* 2002: *43* (21), 5595-5606.

PUBLIC HEALTH

117) The AGE-related eye disease study (AREDS). Hammond, Billy R. and Johnson, Mary Ann. *Nutrition reviews.* 2002: *60*(9), 283-288.
118) CHECKING HIV: Researchers say immune cells secrete small proteins that confer resistance to virus. Long, Janice and Dalton, Louisa Wray. *Chemical & engineering news.* 2002: *80*(39), 7
119) The HAPPY fat: Are we eating our way into a collective depression? Small, Meredith F. *New scientist.* 2002: *175* (2357), 34, 36-37.
120) DIETARY intake of essential minor and trace elements from Asian diets. Iyengar, G. Venkatesh. *et al. Food and nutrition bulletin.* 2002: *23*(3), 124-128.
121) POSSIBLE use of spreads as a FOODlet for improving the diets of infants and young children. Briend, Andre. *Food and nutrition bulletin.* 2002: *23*(3), 239-243.

RECYCLING

122) ECOLOGICAL aspects of the manufacture and application of highly pure liquid substances. Ryabenko, E.A. *et al. Journal of applied polymer science.* 2002: *85*(4), 906-910.
123) EFFECTS of reprocessing on the structure and mechanical properties of poly(trimethylene terephthalate). Ramiro, J., *et al. Journal of applied polymer science.* 2002: *86*(11), 2775-2780.
124) ENERGY absorption capability of recycled plastic bottles. Muller, Mark K. and Majerus, John N. *Polymer engineering and science.* 2002: *42*(7), 1580-1589.
125) RECYCLING of blends of acrylonitrile-butadiene-styrenee (ABS) and polyamide. Liu, Xiaodong, *et al. Journal of applied polymer science.* 2002: *86*(10), 2535-2543.

RESEARCH AND DEVELOPMENT

126) ACADEMIC R&D spending surged upward in 2000: But support for academic chemical research grew at half the rate of total R&D funding. Orlando, Thomas and Herring, Janine. *Chemical & engineering news.* 2002: *80*(43), 41-49.
127) EFFECTS of ABS rubber particles on rheology, melt failure, and thermoforming. Lee, Je Kyun, *et al. Polymer engineering and science.* 2002: *42*(7), 1541-1557
128) MICROSCOPIST chemist: Transmission electron microscopy has evolved into a powerful tool for chemistry research. Jacoby, Mitch. *Chemical & engineering news*. 2002: 80(31), 26-29, 31-32.
129) SCHOOL-industry partnerships. Freemantle, Michael. *Chemical & engineering news.* 2002: *80*(44), 34-37.
130) Wanted: bloodsuckers. Clayton, Julie. *New scientist.* 2002: *175*(2351), 42, 44-45.
131) A YEAR of recovery: Strong growth in patents and journal abstracts in 2001 reverses previous year's declines. Holzle, Markus. *Chemical & engineering news.* 2002: *80*(43), 60-63.

RUBBER

132) CHEMISTRY of the vulcanization and protection of elastomers: a review of the achievements. Coran A.Y. *Journal of applied polymer science.* 2003: *87*(1), 24-30.
133) IMPROVEMENT of the compatibility of natural rubber/ethylene-propylene diene monomer rubber blends via natural rubber epoxidation. El Sayed, A. Mounir and Afifi, H. *Journal of applied polymer science.* 2002: *86*(11), 2816-2819.
134) INFLUENCES of trans-polyoctylene rubber on the physical properties and phase morphology of natural rubber/ acrylonitrile-butadiene rubber blends. Nah, Changwoon., *et al. Journal of applied polymer science.* 2002: *86*(1), 125-134.
135) KINETIC investigations of acrylic-polyurethane composite latex. Kukanja, Dolores, *et al. Journal of applied polymer science.* 2002: *84*(14), 2639-2649.
136) MECHANICAL properties of natural rubber filled with flyash. Hundiwale, D.G., *et al. Journal of applied polymer science*. 2002: 85(5), 995-1001.
137) PHYSICAL studies of foamed reinforced rubber composites. Part I. Mechanical properties of foamed ethylene-propylene-diene terpolymer and nitrile-butadiene rubber composites. Amy El Lawindy, *et al. Polymer international.* 2002: *51*(7), 601-606.

138) PROCESSING characteristics and physicomechanical properties of natural rubber and liquid natural rubber blends. Okieimen, F.E. and Akinlabi, A.K. *Journal of applied polymer science.* 2002: *85*(5), 1070-1076.
139) REINFORCEMENT of natural rubber. Bokobza, Liliane and Rapoport, Oliver. *Journal of applied polymer science.* 2002: *85*(11), 2301-2316.
140) SCISSION and recombination efficiency of hybrid crosslinks in natural rubber. Farid, A.S. *Plastics, rubber and composites.* 2002: *31*(5), 205-211.
141) STUDY on foaming water-swellable EPDM rubber. Sun, Xiaohong, *et al. Journal of applied polymer science.* 2002: *86*(14), 3712-3717.
142) STUDY on polypropylene/natural rubber blend with polystyrene-modified natural rubber as compatibilizer. Azanam S. Hashim and Ong, S.K. *Polymer international.* 2002: *51*(7), 611-616.
143) THERMOPLASTIC dynamic vulcanisates containing LDPE, rubber, and thermochemically reclaimed ground tyre rubber. Radheshkumar, C. and Karger-Kocsis, J. *Plastics, rubber and composites.* 2002: *31*(3), 99-105.

SOYBEAN AND SOYBEAN PRODUCTS

144) ISOFLAVONES in soy-based foods consumed in Brazil: Level, distribution, and estimated intake. Genovese, Maria Ines and Lajolo, Franco M. *Journal of agricultural and food chemistry.* 2002: *50*(21), 5987-5993.

SUGAR AND SWEETENERS

145) ANTIMUTAGENIC effect of various honeys and sugars against Trp-p-1. Wang, Xiao-Hong, *et al. Journal of agricultural and food chemistry.* 2002: *50*(23), 6923-6928.
146) IDENTIFICATION and quantification of antioxidant components of honeys from various floral sources. Gheldof, Nele, *et al. Journal of agricultural and food chemistry.* 2002: *50*(21), 5870-5877.
147) A PROCEDURE to identify a honey type. Popek, S. *Food chemistry.* 2002: *79*(3), 401-406.

TEXTILE INDUSTRY

148) EFFECT of chemical modification of cotton fabrics on dyeing properties. Micheal, M.N., *et at. Journal of applied polymer science.* 2002: *85*(9), 1897-1903.

WATER RESOURCES

149) AUTOMATIC improvements: Installing an integrated control system can improve sludge dewatering performance and cut costs. Pramanik, Amit, *et al. Water environment & technology.* 2002: *14*(10), 46-50.
150) PHOTODEGRADATION of triazine herbicides in aqueous solutions and natural waters. Evgenidou, E. and Fytianos, K. *Journal of agricultural and food chemistry.* 2002: *50*(22), 6423-6427.
151) QUANTITATIVE application of fecal sterols using gas chromatography—mass spectrometry to investigate fecal pollution in tropical waters: Western Malaysia and Mekong Delta, Vietnam. Isobe, Kei O., *et al. Environmental science & technology.* 2002: *36*(21), 4497-4507.
152) QUENCHING the world's thirst: Setting bold targets for getting clean water to the world's poorest is one of the summit's great achievements. Pearce, Fred. *New scientist*. 2002: *175*(2359), 10-11.
153) TiO2-BASED photocatalytic degradation of 2-chlorophenol adsorbed on hydrophobic clay. Mogyorosi, Karoly, *et al. Environmental science & technology*. 2002: *36*(18), 3618-3624.

All articles in the Current Awareness Service List are available in the Universiti Sains Malaysia Library

PEMBAYARAN FOTOKOPI

Harga bayaran untuk membuat fotokopi bagi ahli MIDAS adalah seperti berikut:

(a) Bayaran minima RM10.00 untuk 10 muka surat pertama.
(b) Bayaran tambahan RM1.00 bagi setiap muka surat seterusnya.
(c) Tiada caj perkhidmatan dikenakan.

Sila alamatkan semua permintaan kepada:

MIDAS
Perpustakaan
Universiti Sains Malaysia
11800 USM
Pulau Pinang
Tel.: 04-6533888 ext. 3723 or 3596
Fax: 04-6571526
E-mail: midas@notes.usm.my

PHOTOCOPYING CHARGES

Photocopying charges for MIDAS members are as follows:

(a) Minimum charges of RM10.00 for the first 10 pages.
(b) Additional charge of RM1.00 per page thereafter.
(c) There will be no service charge.

Please address all requests to:

MIDAS
Perpustakaan
Universiti Sains Malaysia
11800 USM
Pulau Pinang
Tel.: 04-6533888 ext. 3723 or 3596
Fax: 04-6571526
E-mail: midas@notes.usm.my

BORANG PERMINTAAN UNTUK
SENARAI PERKHIDMATAN KESEDARAN KINI
REQUEST FORM FOR CURRENT AWARENESS SERVICE LIST

MIDAS
Perpustakaan,
Universiti Sains Malaysia
11800 USM,
Pulau Pinang

Sila hantar kepada saya fotokopi bagi perkara-perkara berikut: (Tulis hanya nombor artikel yang dikehendaki di ruang bawah.)
Please send me the photocopies of the following: (Please state only the article number of the articles requested in the space below.)

MIDAS Keluaran: Bulan: Tahun:
Bulletin *Issue:* _____ *Month:* _____ *Year:* _____

_____
_____
_____
_____
_____
_____
_____
_____
_____

☐ Saya bersetuju akan membayar harga fotokopi untuk bahan-bahan yang tersebut di atas.
I agree to pay for photocopying charges for the above mentioned materials.

☐ Sila kirim bahan-bahan tersebut serta invoisnya kepada saya.
Please send me the requested materials and invoice.

Tandatangan/*Signature*: _____

Nama/*Name*: _____

No. Ahli/*Membership No.*: _____

Nama Syarikat/*Company Name*: _____

Alamat Syarikat/*Company Address*: _____
_____
_____

KEPADA / *TO* :

MIDAS
Perpustakaan
Universiti Sains Malaysia

MIDAS BULLETIN
Jil. 31, Bil.2, Apr-Jun 2003

Diterbitkan oleh / *Published by*

PERPUSTAKAAN
UNIVERSITI SAINS MALAYSIA
11800 MINDEN
PULAU PINANG