SULIT

AKADEMI SAINS MALAYSIA

LAPORAN TAHUNAN 2001

ANNUAL REPORT

SULIT

Laporan Tahunan

2001

Annual Report

Akademi Sains Malaysia
Academy of Sciences Malaysia
902-4, Jalan Tun Ismail
50480 Kuala Lumpur
Malaysia

Tel: 603-2694 9898
Fax: 603-26945858
E-mail: samsudin@akademisains.gov.my

© Akademi Sains Malaysia 2001.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise without the prior permission of the Copyright owner.

Design by: Academy of Sciences Malaysia
Printed by: Absolute Media Corporation (M) Sdn Bhd
(Tel: 03-9648270)

Kandungan/Contents

Laporan Presiden – 1
President's Report

Fungsi – 15
Functions

Fellow Kehormat – 18
Honorary Fellows

Fellow Kanan – 19
Senior Fellows

Fellow Baru – 20
New Fellows

Senarai Fellow – 21
List of Fellows

Ahli Majlis – 24
Council Members

Mesyuarat Majlis – 25
Council Meetings

Jawatankuasa Kerja dan Program – 26
Working Committees and Programmes

Carta Organisasi – 31
Organization Chart

ACARA UTAMA
HIGHLIGHTS

Mesyuarat Agung Tahunan Ke Enam Akademi Sains Malaysia – 35
Academy of Sciences Malaysia Sixth Annual General Meeting

Majlis Makan Malam Tahunan ASM Ketujuh 2001 – 38
ASM Seventh Annual Dinner 2001

Majlis Makan Malam Khas – 40
ASM Special Dinner

AKTIVITI-AKTIVITI
ACTIVITIES

Aktiviti-aktiviti – 45
Activities

Nasihat kepada Kerajaan – 46
Advice to the Government

Program Kecemerlangan Sains – 47
Science Excellence Programme

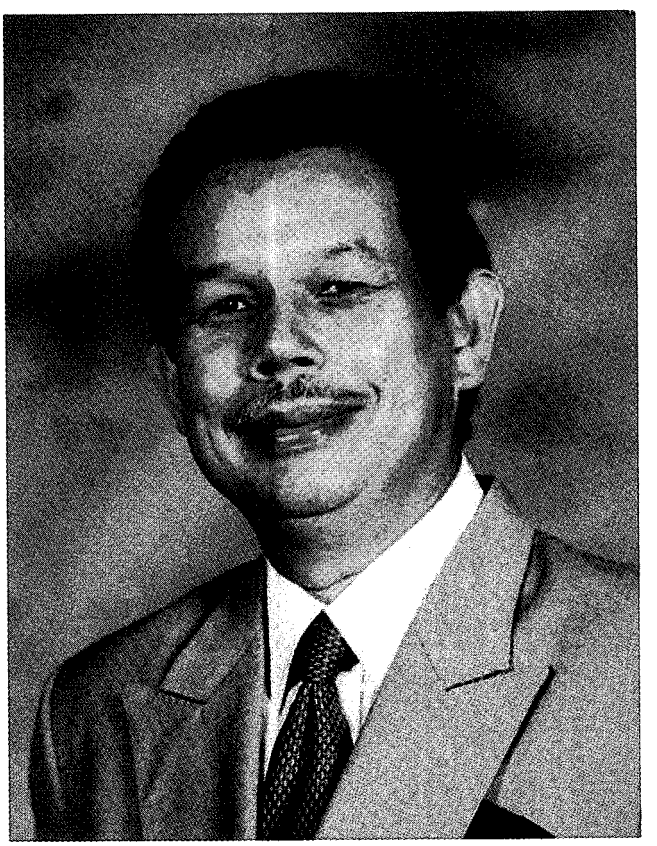
Program Kesedaran Sains – 53
Science Awareness Programme

Program Antarabangsa – 57
International Programme

Penerbitan – 75
Publications

PENYATA KEWANGAN
STATEMENT OF ACCOUNTS

Laporan Presiden/*President's Report*



Tan Sri Datuk Dr Zaharudin Idrus FASc
President
Academy of Sciences Malaysia

Tahun 2001 merupakan tahun pertama bagi saya selaku Presiden, Akademi Sains Malaysia (ASM). Saya merasa bangga dapat membentangkan laporan tahunan untuk tahun 2001 yang menjelaskan rancangan masa hadapan ASM serta aktiviti dan kegiatannya setakat ini.

Abad ke-21 - adalah satu abad yang penuh dengan kemajuan saintifik dan ini secara langsung menjelaskan kepada kita perlunya Malaysia sebagai sebuah negara untuk menangani sains dan teknologi (S&T) bagi memastikan produktiviti berada pada tahap yang tinggi dan mempunyai daya saing yang

2001 marked my first year, as the President of the Academy of Sciences Malaysia and it is with pride that I present this report outlining the Academy's outlook towards the future and the strides it has made thus far.

The 21st Century - a momentous advent in scientific endeavour and adventure, unveils for Malaysia an unprecedented emphasis to harness science and technology (S&T) for productivity-driven growth and competitive advantage. In this century, even more than in the last, science and

tinggi. Dalam abad ini sains dan teknologi akan mempengaruhi arus ekonomi dan kehidupan masyarakat. Louis Pasteur, seorang ahli sains Perancis yang terkenal pernah berkata, 'Pencapaian Sains adalah merupakan imej tertinggi sesebuah negara, kerana negara tersebut akan berada ditahap terunggul dari sudut pemikiran dan kebijaksanaan'. Dalam usaha kita mewujudkan asas yang kukuh bagi mencapai masyarakat maju dari sudut sains dan teknologi menjelang tahun 2020, pelaburan kearah kecemerlangan sains, peningkatan kapasiti dan keupayaan S&T serta penyaluran maklumat S&T kepada rakyat jelata secara lebih efektif, adalah amat penting.

ASM telah mengenalpasti peri pentingnya sains, kejuruteraan dan teknologi (SET) bagi menjana kemakmuran dan kualiti penghidupan di masa akan datang dan bukan hanya setakat penting untuk menyumbang kepada ekonomi yang kompetitif. Kecemerlangan sains, kejuruteraan dan teknologi merupakan kayu ukur bagi kewujudan masyarakat maju dan matang yang menghargai ilmu dan manfaat yang dibawanya.

Memandangkan persekitaran global yang dinamik, ASM sedar betapa pentingnya bagi ASM bertindak segera menyahut cabaran serta menyesuaikan diri dalam arus perubahan. Akademi perlu sedia menerima idea dan usaha-usaha baru untuk memenuhi tanggungjawab terhadap masyarakat. Dalam hubungan ini, kita sentiasa berusaha untuk lebih inovatif dalam cara berfikir dan juga bekerja. Pada tahun ini, kita ingin melihat pendekatan yang inovatif ini dalam dua aspek utama. Pertama sekali adalah dalam

technology will shape the economy and the society in which we live. Louis Pasteur, a famous French scientist once said, 'Science is the highest pesonification of the nation because that nation will remain the first which carries the furthest the works of thought and intelligence'. As we lay the foundation for the attainment of a scientific and technologically advanced society by the year 2020, investing in scientific excellence, the enhancement of S&T capacity and capabilities as well as the effective communication of science and technology to the public is imperative.

The Academy of Sciences Malaysia recognizes that science, engineering and technology (SET) are key drivers of future prosperity and quality of life. They are not just important because of their contribution to our future economic competitiveness. Excellence in science, engineering and technology is a mark of a developed and mature society which values knowledge in its own right as well as the material benefits that it brings.

Given the rapidly changing global environment, the Academy realizes that it must be very quick to respond to challenges and adapt to changes. It must be receptive to new ideas and endeavours in order to fulfil greater calls on society. Therefore we constantly strive to be innovative in the way we think and work. We hope to see this greatly evident in two particular areas this year: First in stirring an interest and increasing indulgence in SET among

menggalakkan minat dan penceburan SET di kalangan generasi muda - generasi akan datang. Untuk memainkan peranan ini, Akademi perlu sentiasa berada di hadapan terutamanya dalam mengutarakan SET kepada masyarakat. Aspek kedua adalah dalam menyelaras dan mempelopori kerjasama dan hubungan antarabangsa. Akademi berada pada kedudukan yang baik untuk mempelopori pembentukan kerjasama dan hubungan antarabangsa disebabkan ianya mempunyai hubungan antarabangsa yang mantap melalui hubungan dengan pelbagai organisasi serantau seperti 'Science Council of Asia (SCA)', 'the Federation of Asian Scientific Academies and Societies (FASAS)', 'ASEAN Council of Academies of Sciences and Engineering (ASEAN-CASE)'; organisasi antarabangsa seperti 'Inter-Academy Panel (IAP)', 'International Council for Science (ICSU)' and the 'Third World Academy of Sciences (TWAS)'. Tambahan lagi, Akademi telah menandatangani memorandum persefahaman dan kerjasama dua hala dengan beberapa akademi lain di dunia termasuk 'Royal Society of the UK'. Memang tidak dapat dinafikan bahawa peranan Akademi dalam kerjasama dan hubungan antarabangsa adalah amat penting disebabkan usaha ini akan membantu memperkukuhkan kapasiti dan keupayaan SET negara, memper-kembangkan bidang penyelidikan dan pembangunan melalui pertukaran idea dan sumber yang efektif; membolehkan kita sentiasa berada dalam tahap terkini dengan perkembangan S&T global serta membolehkan kita membuat perbandingan taraf S&T Malaysia berbanding taraf antarabangsa. Dalam hubungan ini saya yakin Akademi akan lebih aktif dan

the young - the future generation of the nation. In order to play this role, the Academy has to be on the cutting-edge of presenting the relevance of SET to society.

The second would be in coordinating and initiating international collaborations and networks. The Academy is well positioned to assume leadership in establishing international collaborations since it has very strong international linkages through its association with the various regional organizations such as the Science Council of Asia (SCA), the Federation of Asian Scientific Academies and Societies (FASAS), ASEAN Council of Academies of Science and Engineering (ASEAN-CASE); International organizations such as the Inter-Academy Panel (IAP), International Council for Science (ICSU) and the Third World Academy of Sciences (TWAS). In addition, the Academy has Memoranda of Understanding (MOUs) and bilateral co-operations with other academies around the world including the distinguished Royal Society of the UK. I cannot overemphasize the role of the Academy in the area of international collaborations as it will serve to strengthen the nation's SET capacity and capability; Enhance R&D through effective exchange of ideas and resources; Enable us to keep abreast with S&T developments globally as well as allow for benchmarking of Malaysian S&T against global standards. Therefore, I foresee the Academy becoming more active and effective in



efektif dalam mempelopori kerjasama dan hubungan antarabangsa. Dalam merealisasikan usaha ini, kita menyeru masyarakat saintifik Malaysia, sektor awam dan sektor swasta untuk mengambil kesempatan melalui hubungan dan jaringan antarabangsa yang sedia dibina oleh Akademi untuk merealisasikan sinergi melalui sokongan institusi-institusi lain, pembiayaan kewangan, meningkatkan kapasiti dan keupayaan S&T serta mendapatkan informasi ke arah membina satu asas S&T yang bertaraf antarabangsa di Malaysia.

Dalam era ekonomi berasaskan pengetahuan (K-ekonomi), di mana sumbangan daripada pelbagai sektor masyarakat adalah sangat penting dan perlu diberikan keprihatinan yang sewajarnya, Akademi memainkan peranan yang penting dalam konteks sebagai penasihat menyumbang idea dan pendapat bagi kemajuan S&T negara. Akademi mempunyai kedudukan dan kebolehan yang unik untuk membawa kedua-dua sektor awam dan sektor swasta ke meja rundingan. Kekuatan ini perlu diperkembangkan untuk mencapai manfaat maksima. Menurut Rancangan Malaysia ke-lapan (2001-2005), pembangunan berdasarkan S&T dijangka akan menyumbang kepada lebih daripada satu pertiga sasaran pertumbuhan ekonomi. Memandangkan kepada unjuran ini, Akademi sedia maklum bahawa penjalinan kerjasama yang lebih mantap antara masyarakat SET dan industri ke arah mengoptimumkan aplikasi teknologi canggih dan terkini, amat diperlukan.

Di sini saya ingin mengemukakan sedikit sebanyak aktiviti-aktiviti dan pencapaian Akademi baru-baru ini:

the area of spearheading international collaborations. In doing so, we wish to see the Malaysian scientific community, the public and private sector taking advantage of the Academy's strong international links and networks to realize synergies of institutional support, funding, S&T capacity & capability as well as information access towards establishing a world-class S&T base in Malaysia.

In the knowledge driven economy where the contributions from the various sectors of society are very important and must be harnessed accordingly, the Academy plays a key role in the S&T advisory system of the nation. The Academy is in a unique position to bring both the public and private sector into consultation. This is a strength that must be capitalized upon. According to the Eighth Malaysia Plan (2001-2005), S&T-based development is expected to contribute more than one-third of the economic growth target. In cognisance of this, the Academy sees the need for fostering greater cooperation between the SET community and industries towards optimising the application of new and improved technology.

At this juncture, I wish to briefly highlight some of the Academy's recent activities and achievements:

Projek ASM di bawah Rancangan Malaysia Ke-lapan (2001-2005)

Saya dengan sukacitanya ingin melaporkan bahawa di bawah Rancangan Malaysia Ke-lapan (RM8) projek-projek ASM yang berikut telah diluluskan:

- Penubuhan Pusat Sumber Sains dan Teknologi Kebangsaan (NSTRC) sebagai satu projek pembangunan infrastruktur - kerja-kerja awal pecah tanah dan kelulusan rasmi bagi pelan bangunan sedang berjalan dan bangunan dijangka akan siap dalam tahun 2003.

- Program Penyelidikan Malaysia di Antartika - Akademi mengetuai satu Jawatankuasa Petugas mengenai Projek R&D di Antartika. Di bawah RM8, Kementerian Sains, Teknologi dan Alam Sekitar telah meluluskan peruntukan sejumlah RM5 juta bagi projek ini.

- Program Hadiah Nobel Malaysia - Akademi yang mengetuai satu Jawatankuasa Petugas bagi Program Pemenang Hadiah Nobel, telah diberi peruntukan sebanyak RM2.5 juta di bawah RM8 untuk menjalankan kajian dan merangka program nasional ke arah kecemerlangan sains dan melahirkan seorang Pemenang Hadiah Nobel dari Malaysia menjelang tahun 2020.

ASM Project under the Eighth Malaysia Plan (2001-2005)

I am pleased to report that under the Eighth Malaysia Plan (RM8), the following ASM projects have been approved:

- *The National Science and Technology Resource Centre (NSTRC) as an infrastructure development project - initial earthworks and formal approval for building plans are underway and the building is expected to be completed in 2003.*

- *Malaysian R&D Projects in Antarctica - The Academy heads the Task Force on Malaysian R&D Projects in the Antarctica and under the RM8, the Ministry of Science, Technology and the Environment has approved a RM5 million funding specifically dedicated for this project.*

- *The Malaysian Nobel Laureate programme - The Academy which heads a Task Force on the Malaysian Nobel Laureate programme has been allocated - funding amounting to RM2.5 million under the RM8 to undertake a study and to develop a national programme towards achieving excellence in science and towards producing a Malaysian Nobel Laureate by 2020.*

Mesyuarat Agung Tahunan
Mesyuarat Agung Tahunan yang keenam telah diadakan pada 27 April 2001. Akademi telah melantik lapan orang Fellow baru dan ini menjadikan jumlah Fellow sehingga kini seramai 90 orang. Akademi juga telah melantik ahli Jawatankuasa Eksekutif dan ahli Majlis. Academician Tan Sri Datuk Dr Mohd Rashdan Baba FASc telah dilantik sebagai Fellow Kanan Akademi yang keenam.

Annual General Meeting
The Sixth Annual General Meeting was successfully held on 27 April 2001. The Academy elected eight new Fellows bringing the total to 90. It also elected its Exco and Council members. Academician Tan Sri Datuk Dr Mohd Rashdan Baba FASc was elected as the sixth Senior Fellow of the Academy.

Nasihat kepada Kerajaan
Dalam memenuhi peranannya untuk memberi nasihat kepada kerajaan berhubung dengan bidang sains, kejuruteraan dan teknologi, Akademi telah membentangkan deraf Kertas Polisi S&T, yang dihasilkan berdasarkan laporan kajian semula Polisi Sains dan Teknologi Kebangsaan kepada Majlis Penyelidikan dan Kemajuan Sains Negara (MPKSN). Kementerian Sains, Teknologi dan Alam Sekitar akan menyediakan Kertas Polisi untuk dibentangkan kepada Kabinet. Akademi juga terlibat sebagai penasihat di dalam kajian mengenai Program Pemetaan Teknologi Kebangsaan (NTMP II) yang sedang dijalankan oleh Rundingan Industri Malaysia (PriMA).

Advice to Government
In fulfilling its role to provide independent advice to the Government on matters related to science, engineering and technology the Academy has presented a draft S&T policy paper which was formulated from the report of the review of the National Science and Technology Policy to the National Council for Scientific Research and Development (MPKSN). The Ministry of Science, Technology and the Environment is expected to prepare the final policy paper for presentation to the Cabinet. The Academy is also acting as an advisor to the study of the National Technology Mapping Programme II (NTMP II) which is being conducted by Rundingan Industri Malaysia (PRiMA).

Budaya Kecemerlangan Sains
Akademi telah menganjurkan banyak aktiviti sepanjang tahun lalu di bawah Program Budaya Kecemerlangan Sains. Antaranya, yang utama adalah dua buah Syarahan di bawah aktiviti 'ASM Eminent Persons Lectures' yang dibentangkan oleh Academician Tan Sri

Culture of Excellence
The Academy has organized many activities under the Culture of Excellence Programme throughout last year. Among the highlights of the activities are two ASM Eminent Persons Lectures delivered by Academician Tan Sri Datuk Dr Omar Abdul Rahman

Dr Augustine S.H. Ong FASc. Syarahan-syarahan ini bertajuk: 'Technology Management Best Practice in Malaysia-Imperatives for the K-economy' and 'The War of Oils: Its Aftermath and Future Strategy'.

Akademi juga telah bekerjasama dengan Kementerian Pertanian dan Kementerian Perusahaan Utama dalam penganjuran Seminar Kebangsaan berhubung 'Agroforestry' yang bertema 'NAP3-Getting Agroforestry Moving'. Hasil daripada seminar tersebut adalah merupakan draf Strategi dan Pelan Tindakan Nasional untuk 'agro-forestry'. Seterusnya, di bawah program 'ASM Discussion Series', satu ceramah telah diberikan oleh En Arvind Chatbar, Pengarah, Pusat Inovasi Serantau, Majlis Penyelidikan Kebangsaan Kanada di Ottawa, bertajuk 'Transforming Scientists into Technoprenuers: The Canadian Experience'. Beliau telah berkongsi pengalamannya tentang faktor-faktor persekitaran luaran yang menggerakkan Majlis Penyelidikan Nasional ke arah memulakan usaha untuk mentransformasikan ahli sains kepada usahawan.

ASM telah juga menganjurkan Forum bertajuk 'Creativity and Innovation: Laying the Foundation for a Creative Thinking Nation' pada 24 Mac 2001. Matlamat forum ini adalah untuk menyediakan satu platform bagi perbincangan umum ke arah pembentukan rangka kerja nasional bagi mempromosikan kreativiti dan inovasi di kalangan rakyat Malaysia. Secara am, forum ini bersetuju bahawa negara perlu mewujudkan satu persekitaran yang boleh menggalakkan kreativiti dan

FASc and Academician Tan Sri Dr Augustine S.H. Ong FASc. The lectures were entitled 'Technology Management Best Practice in Malaysia - Imperatives for the K-Economy' and 'The War of Oils: Its Aftermath and Future Strategy' respectively.

The Academy also co-organized a National Seminar on Agroforestry themed 'NAP3 - Getting Agroforestry Moving' with the Ministry of Agriculture and the Ministry of Primary Industry. The outcome of the Seminar was a draft national strategy and plan of action for agro-forestry. Under the ASM Discussion Series programme, a talk was given by Mr Arvind Chatbar, Director, Regional Innovation Centre, National Research Council (NRC) of Canada in Ottawa, on 'Transforming Scientists into Technoprenuers: The Canadian Experience'. He outlined the external environment that drives NRC into launching the initiatives to transform their scientists into entrepreneurs.

The Academy of Sciences Malaysia organized a Forum on 'Creativity and Innovation: Laying the Foundation for a Creative Thinking Nation' on 24 March 2001. The objective of the forum was to provide a platform for public discussion towards the formulation of the national framework to promote creativity and innovation among Malaysians. In general, the forum agreed that the country needed to establish a proper environment to allow creativity to flourish and to harness its

keupayaan inovatif ke arah mencapai kemajuan.

Di bawah Geran Penyelidikan Perubatan Dr Ranjeet Bhagwan Singh, beberapa aktiviti telah dianjurkan dengan jayanya sepanjang 2001. Syarahan Memorial 2001 bertajuk 'Living with the killers', telah disampaikan oleh Pemenang Hadiah Nobel, Prof Peter Doherty, Pengarah, Jabatan Imunologi, Hospital Penyelidikan St. Jude Children, USA. Beliau juga telah memberikan Syarahan Umum bertajuk 'How to deal with virus infections'. Satu Dialog Saintifik antara Prof Peter Doherty dan para penyelidik sains perubatan di Malaysia, telah diadakan di Universiti Putra Malaysia. Satu lagi aktiviti di bawah program ini adalah bengkel teknikal bertajuk 'Clinical Applications of Real Time PCR'. Dua pakar dari USA, iaitu Dr Hasnah Hamdan dan Dr Maurice Exner, telah dijemput untuk mengendalikan bengkel tersebut.

Program Kesedaran Sains

Meningkatkan kesedaran sains dan kefahaman tentang peranan sains dan teknologi amat penting dalam menentukan kemajuan nasional dalam era K-ekonomi ini. Sepanjang 2001, Akademi telah mengendalikan banyak aktiviti yang menarik dan bermanfaat di bawah program kesedaran sains ini terutamanya dalam bidang pendidikan sains dan matematik. Satu seminar untuk menilai 'Science Education Quality Improvement Project' (SEQIP) telah dianjurkan oleh Akademi dengan kerjasama Pusat Perkembangan Kurikulum, Kementerian Pendidikan.

innovative potential towards national developments.

The Dr Ranjeet Bhagwan Singh Medical Trust fund has successfully organised a number of activities throughout 2001. This year the Dr Ranjeet Bhagwan Singh Memorial Lecture on 'Living with the Killers' was presented by Nobel Laureate Prof Dr Peter Doherty, Chairman, Department of Immunology, St. Jude Children Research Hospital, USA who also delivered a public lecture on 'How to deal with virus infection'. A scientific dialogue between Prof Peter Doherty and Malaysian medical science researchers was conducted at Universiti Putra Malaysia. Another activity under the programme was a technical workshop 'Clinical Applications of Real Time PCR'. Two experts from USA, Dr Hasnah Hamdan and Dr Maurice Exner, were invited to conduct the workshop.

Public Awareness & Understanding of S&T

Increasing the nation's awareness and understanding on science and technology is very important in ensuring national development in this K-economy era. Throughout the year, the Academy has organized many interesting and beneficial activities under this Science Awareness Programme especially in the areas of science and mathematics education. A Seminar to evaluate SEQIP or Science Education Quality Improvement Project was organized by the Academy and the

Seminar ini dikendalikan oleh kumpulan SEQIP dari Indonesia. Seminar ini telah merumuskan bahawa sistem SEQIP adalah baik dan efektif bagi meningkatkan kualiti pengajaran dan pembelajaran sains dan boleh diubahsuai untuk diterapkan ke dalam sistem pendidikan Malaysia.
Satu bengkel untuk membincang cadangan menubuhkan Institut bagi Guru Matematik dan Sains Malaysia (TIMS) juga telah diadakan dengan kerjasama Pusat Perkembangan Kurikulum.

Bengkel ini mengesyorkan agar satu jawatankuasa sementara yang dianggotai oleh wakil daripada ASM, Kementerian Pendidikan dan Universiti-universiti tempatan diwujudkan sebagai langkah awal dalam menubuhkan TIMS.

Program Antarabangsa
Di bawah Program Antarabangsa, Akademi terlibat secara aktif dalam banyak mesyuarat dan persidangan antarabangsa. Tahun ini Akademi telah menghantar delegasinya ke Mesir dan berkesempatan menerima ramai tetamu antarabangsa sepanjang tahun. Aktiviti paling utama yang diadakan di bawah program antarabangsa adalah Persidangan Antarabangsa tentang Pendidikan Sains dan Matematik bagi Sekolah Rendah dan Menengah 2001. Persidangan ini telah dianjurkan oleh Akademi dengan kerjasama Kementerian Pendidikan dan 'International Council for Science (ICSU)' dengan kerjasama 'InterAcademy Panel of World Science Academies (IAP)' dan Kementerian Sains, Teknologi dan Alam Sekitar. Tema

Curriculum Development Centre, Ministry of Education. It was conducted by SEQIP team from Indonesia. The Seminar concluded that the SEQIP system was found to be good and effective in improving the quality of science teaching and learning and can be adapted for implementation in Malaysia's education system.

A workshop to discuss the proposed establishment of Teachers Institute for Mathematics and Science Malaysia (TIMS) was also organized in collaboration with the Curriculum Development Centre. The workshop suggested forming a Pro-tem Committee comprising of Academy of Sciences Malaysia, Ministry of Education and Universities to initiate the establishment of TIMS.

International Programme
Under the International Programme the Academy has been actively involved in many international meetings and conferences. This year the Academy sent its delegation to Egypt and was privileged to host many important international visitors throughout the year.

The highlight of the year under the International Programme was the International Conference on Primary and Secondary Schools Science and Mathematics Education 2001 which was organized with the Ministry of Education and the International Council for Science (ICSU) in collaboration with the InterAcademy Panel of World Science Academies (IAP) and the Ministry of Science, Technology and the Environment. The theme of the

persidangan adalah 'Pendidikan Sains dan Matematik: Menyahut cabaran-Cabaran K-ekonomi'. Persidangan ini telah bersetuju dengan sebulat suara bahawa satu pendekatan inovatif terhadap pengajaran dan pembelajaran sains dan matematik amat diperlukan di sekolah rendah dan menengah. Satu persetujuan juga disuarakan terhadap penubuhan Institut bagi Guru Matematik dan Sains Malaysia (TIMS) dan pembentukan satu jaringan serantau di kalangan semua guru sains dan matematik , para pendidik dan ahli sains. Satu Pameran dan Pertandingan Sains dan Matematik Kebangsaan juga telah dianjurkan sempena persidangan ini. Pertandingan telah dibuka kepada semua guru sains dan matematik yang telah menghasilkan kit pengajaran yang inovatif untuk mengajar sains dan matematik di sekolah, secara lebih berkesan.

Fellow-Fellow akademi juga terlibat secara aktif dalam banyak mesyuarat dan persidangan antarabangsa. Naib Presiden, Academician Dato' Ir Lee Yee Cheong FASc, telah menghadiri Bengkel IAP tentang pembinaan kapasiti untuk Akademi di Afrika yang diadakan di Trieste, Itali dan telah berkongsi pengalaman penubuhan ASM. Beliau juga telah menghadiri 'United Nation Commission for Sustainable Development-9 (UNCSD-9) Multi-Stakeholders Dialogue' di New York. Akademi juga menghantar satu delegasi seramai 4 orang ke Persidangan pertama Majlis Sains Asia (SCA) di Bangkok. Academician Tan Sri Datuk Dr Omar

Conference was 'Science and Mathematics Education: Responding to the challenges of the K-economy'. The Conference agreed unanimously that there is an urgent need for an innovative teaching and learning in science and mathematics to be implemented in both primary and secondary schools. It also agreed with the proposal to establish a Teachers Institute for Mathematics and Science Malaysia (TIMS) and to establish a regional network among all science and mathematics teachers, educators and scientists. A National Science and Mathematics Exhibition and Competition were also organized in conjunction with the Conference. The competition was opened to science and mathematics teachers who have developed innovative educational kits to augment their teaching of science and mathematics in school.

The Academy's Fellows also have been actively involved in many international meetings and conferences. The Vice President, Academician Dato' Ir Lee Yee Cheong FASc attended the IAP Workshop on Capacity Building for Academies in Africa which was held in Trieste, Italy to present the Academy's experience in establishing the Academy of Sciences Malaysia. He also attended the United Nation Commission for Sustainable Development-9 (UNCSD-9) Multi-Stakeholders Dialogue in New York. The Academy also sent a four-member delegation to the First SCA Conference in Bangkok. Academician

telah menyampaikan satu syarahan khas bertajuk 'Sustainable Development" A Vision for Asia'. Dato' Dr Ariffin Aton FASc telah menghadiri Persidangan Dunia berhubung S&T di Manila. Dato' Dr Salleh Mohd Nor FASc sebagai Pengerusi Jawatankuasa Petugas Program Antartika, telah menghadiri persidangan '40 years: The Antarctica Treaty System in the 21st Century' di Wilton Park, West Sussex, United Kingdom.

Akademi juga telah menganjurkan seminar bertajuk 'Sustainable Development: A Blue print for a Greener Asia' dengan objektif untuk membincang dan mendapatkan input untuk kertas kerja tersebut. Akademi juga telah menandatangani dua memorandum persefahaman (MOUs). Satu daripadanya adalah dengan Akademi Sains dan Kemanusiaan Berlin-Branderburg dan yang satu lagi dengan 'China Yangtze Three Gorges project Corporation (CTGPC)'.

Terdapat banyak lagi aktiviti-aktiviti dimana Akademi terlibat dan ini akan dihuraikan dalam laporan seterusnya.

Penerbitan

Bagi tahun 2001, Akademi telah menerima 200 penerbitan daripada pelbagai organisasi tempatan dan luar negara. Akademi telah mengedarkan lebih kurang 1,000 naskah Buletin dan 1,000 naskah Laporan Tahunan di dalam dan luar negara.

Begitulah antara aktiviti-aktiviti Akademi bagi tahun 2001. Saya juga ingin menarik perhatian pembaca sekalian kepada aspek merangsang penyelidikan dalam bidang sains asas.

Tan Sri Datuk Dr Omar presented a special lecture on the topic of 'Sustainable Development: A Vision for Asia. Dato' Dr Ariffin Aton FASc attended the World Conference on S&T in Manila while Dato' Dr Salleh Mohd Nor FASc as the Chairman of the ASM Task Force on Antarctica attended the Conference on '40 Years: The Antarctica Treaty System in the 21st Century' in Wilton Park, West Sussex, United Kingdom.

The Academy organised a seminar on Sustainable Development: A Blue Print for a Greener Asia with the objective to discuss and provide input into the paper with the same title. The Academy also signed two MOUs. One MOU was signed with the Berlin-Brandenburg Academy of Sciences and Humanities and another with he China Yangtze three Gorges Project Corporation (CTGPC).

There are many other activities which the Academy participated in which will be outlined in the accompanying report.

Publication

For the year under review the Academy received 200 publications from various organizations locally and abroad. The Academy circulated about 1000 newsletters and 1000 Annual Reports locally and abroad.

Having reported on the Academy's activities for the past year, I wish to briefly draw your attention to the key area of mobilizing basic sciences research.

Dalam melaksanakan peranannya untuk menyemai budaya kecemerlangan dalam sains, kejuruteraan dan teknologi, akademi ingin menegaskan bahawa aspek kemantapan penyelidikan dalam sains asas tidak boleh diabaikan. Dalam keghairahan menumpukan perhatian kepada aplikasi komersial, penjanaan produk baru, perkhidmatan, kerja dan kekayaan, aspek asas seharusnya diberi tumpuan dan sokongan yang jitu. Kemantapan dalam penyelidikan sains asas penting dalam menyahut cabaran Perdana Menteri kepada komuniti saintifik untuk menghasilkan seorang pemenang Hadiah Nobel di kalangan ahli sains di Malaysia. Maka Akademi memegang kuat kepada tanggapan bahawa perkembangan kapasiti dalam bidang sains asas adalah mustahak dan harus seiring dengan fokus ke atas sains gunaan dan teknologi utama. Oleh yang demikian, Akademi akan menggalakkan kecemerlangan dalam sains asas dengan menguatkan rangka kerjasama bagi penyelidikan sains asas sebagai salah satu cara memulihkan penekanan dan sokongan bagi penyelidikan sains asas.

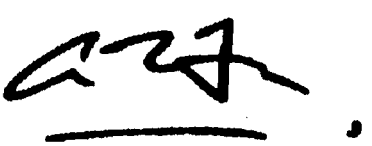
Sebelum mengakhiri laporan ini, saya ingin merakamkan setinggi-tinggi penghargaan kepada semua Fellow Akademi di atas sokongan dan penglibatan mereka dalam aktiviti-aktiviti Akademi serta kepada semua

In playing its role in inculcating a culture of excellence in science, engineering & technology the Academy wishes to emphasize the need for solid basic sciences research. The current trend seems to show that higher education and research in basic sciences have received a negligible share of total available resources from domestic and foreign sources. While much emphasis has been placed on commercial applications, creation of new products, services, jobs and wealth; the basic sciences should have been given due priority and support. Development of the area of basic sciences is essential for all research in the applied sciences and for long-term sustainable development. Development of the area of basic sciences research is more vital in view of the Prime Minister's challenge to the scientific community to produce a Malaysian Nobel Laureate by the year 2020 as the Nobel Prizes are given to breakthroughs in basic sciences. Consequently, the Academy views capacity building in the basic sciences as vital and should be in tandem with the emphasis on applied sciences and key technologies. Therefore the Academy will seek to promote excellence in basic sciences by strengthening the framework of research cooperation in the basic sciences as a means of seeing a resurgence of emphasis and support for basic sciences research.

In closing, I would like to record my since appreciation and gratitude to all

pegawai dan kakitangan Akademi di atas dedikasi dan komitmen mereka. Saya juga ingin mengucapkan terima kasih kepada semua pihak yang bekerjasama dengan Akademi dalam menjayakan aktivitinya - sumbangan anda sangat dihargai. Secara keseluruhannya saya bersyukur kerana Tahun 2001 adalah merupakan tahun yang produktif untuk Akademi dan semoga kita akan lebih berjaya dalam mengharungi cabaran yang bakal mendatang ditahun 2002.

Fellows of the Academy for their support and participation in our activities and also to all staff members for their dedication and commitment. Last but not least, I also wish to thank all those who network and collaborate with the Academy of Sciences in carrying out its activities - your contribution and support have gone a long way in facilitating the Academy's activities. The year has been a busy and productive one and we can all look forward to greater challenges and achievements in 2002.



Tan Sri Datuk Dr Zaharudin Idrus FASc
Presiden, Akademi Sains Malaysia
President, Academy of Sciences Malaysia

Fungsi/*Functions*

- untuk menggalakkan dan merangsang pembangunan sains, kejuruteraan dan teknologi
- untuk mengadakan forum pertukaran pendapat di kalangan ahli sains, jurutera dan ahli teknologi
- untuk menggalakkan kesedaran negara, pemahaman dan penghargaan akan peranan sains, kejuruteraan dan teknologi dalam kemajuan manusia
- untuk menggalakkan daya rekaciptaan di kalangan ahli sains, jurutera dan ahli teknologi
- untuk menggalakkan sifat berdikari negara dalam bidang sains, kejuruteraan dan teknologi
- untuk bertindak sebagai forum untuk mengekalkan di pihak Kerajaan akan pentingnya peranan sains, kejuruteraan dan teknologi dalam proses pembangunan negara dan membawa kepada perhatian ahli sains, jurutera dan ahli teknologi akan keperluan-keperluan pembangunan negara

- *to promote and foster the development of science, engineering and technology*
- *to provide a forum for the interchange of ideas among scientists, engineers and technologies*
- *to promote national awareness, understanding and appreciation of the role of science, engineering and technology in human progress*
- *to promote creativity among scientists, engineers and technologists*
- *to promote national self-reliance in the field of science, engineering and technology*
- *to act as a forum for maintaining awareness on the part of the Government of the significance of the role of science, engineering and technology in the development process of the nation and for bringing national development needs to the attention of scientists, engineers and technologists*

- untuk menganalisa masalah-masalah tertentu negara dan mengenalpasti di mana sains, kejuruteraan dan teknologi dapat memberi sumbangan kepada penyelesaian masalah dengan membuat syor-syor kepada Kerajaan

- untuk sentiasa mengambil perhatian tentang perkembangan sains, kejuruteraan dan teknologi serta mengenalpasti perkembangan-perkembangan yang relevan dengan keperluan negara dan membawa kepada perhatian Kerajaan akan perkembangannya

- untuk menyediakan laporan-laporan, kertas-kertas atau dokumen-dokumen lain berhubungan dengan dasar sains, kejuruteraan dan teknologi negara dan membuat syor-syor yang perlu kepada Kerajaan

- untuk mendayausahakan dan membiayai kajian pelbagai disiplin yang berkaitan serta keperluan pemahaman yang lebih baik tentang implikasi-implikasi social dan ekonomi tentang sains, kejuru kejuruteraan dan teknologi

- untuk menggalakkan penyelidikan dan pembangunan pendidikan serta latihan tenaga manusia yang sesuai dalam bidang saintifik, kejuruteraan dan teknologi

- untuk mengadakan dan mengekalkan hubungan antara Akademi dan badan-badan luar negeri yang mempunyai objektif yang hampir serupa dengan objektif Akademi

- *to analyze particular national problems and identify where science, engineering and technology can contribute to their solution and accordingly to make recommendations to the Government*

- *to keep in touch with developments in science, engineering and technology and identify those developments which are relevant to national needs and to bring such developments to the attention of the Government*

- *to prepare reports, papers or other documents relating to the national science, engineering and technology policy and make the necessary recommendations to the Government*

- *to initiate and sponsor multi-disciplinary studies related to and necessary for the better understanding of the social and economic implications of science, engineering and technology*

- *to encourage research and development and education and training of the appropriate scientific, engineering and technical manpower*

- *to establish and maintain relations between the Academy and overseas bodies having the objectives in science, engineering and technology as the Academy*

- untuk melakukan apa-apa perkara lain dalam bidang sains, kejuruteraan dan teknologi sebagaimana yang diminta oleh Kerajaan dari semasa ke semasa
- untuk melakukan apa-apa tindakan lain yang konsisten dengan Akta Akademi Sains 1994 sebagaimana yang dikehendaki untuk meningkatkan kemajuan sains, kejuruteraan dan teknologi di Malaysia dan kebajikan serta taraf Akademi

- *to advise on matters related to science, engineering and technology as may be requested by the Government from time to time*
- *to do such other acts which are consistent with this Act as may be required in order to further the advancement of science, engineering and technology in Malaysia and the welfare and status of the Academy*

Fellow Kehormat/*Honorary Fellow*

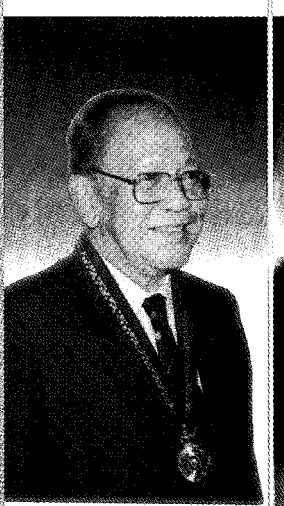


YAB Dato' Seri Dr Mahathir Mohamad
Perdana Menteri Malaysia/
Prime Minister of Malaysia

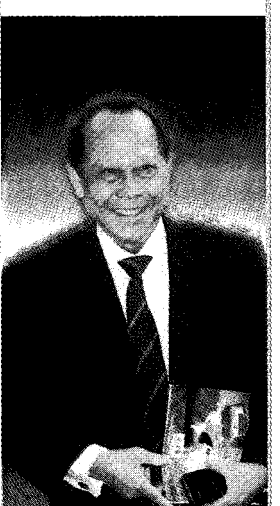
Fellow Kanan/*Senior Fellows*



Academician
Tan Sri Datuk
Dr Omar Abdul
Rahman FASc



Academician
Dato' Ir Lee Yee
Cheong FASc



Academician
Tan Sri Datuk
Dr Augustine S.H.
Ong FASc



Academician
Dr M.K. Rajakumar
FASc



Academician
Tan Sri Dr B.C.
Sekhar FASc

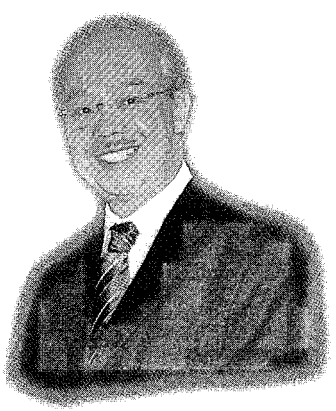


Academician
Tan Sri Dato' Dr
Mohd. Rashdan
Hj Baba FASc

Fellow Baru/*New Fellows*



Prof Dato' Dr Sheikh
Omar Abd Rahman FASc



Dato' Dr A. Bakar Jaafar FASc



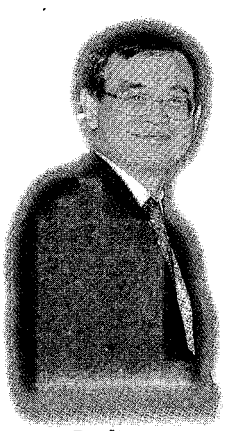
Prof Ir Dr Mashkuri Hj Yaacob FASc



Dr Saharan Hj Anang FASc



Prof Dr Mohd Nordin
Hj Hassan FASc



Prof Dr
Cheong Soon-Keng FASc



Dr Rajanaidu Nookiah FASc



Prof Dr Yap Sook Fan FASc

Senarai Fellow/*List of Fellows*

Sains Perubatan/*Medical Sciences*

1) Academician Dr M.K. Rajakumar FASc
2) Professor Dr Looi Lai Meng FASc
3) Dato' Dr M. Jegathesan FASc
4) Prof Dato' Dr Khalid Abdul Kadir FASc
5) Tan Sri Dato' Dr Haji Abdul Majid Ismail FASc
6) Dato' Dr Lim Kee Jin FASc
7) Datuk Dr Hussein Awang FASc
8) Datuk Dr G. Sreenevasan FASc
9) Prof Dr Mak Joon Wah FASc
10) Dato' Dr Yahya Awang FASc
11) Datuk Dr Keshmahinder Singh FASc
12) Dato' Dr N. Arumugasamy FASc
13) Prof Dr Lam Sai Kit FASc
14) Tan Sri Dato' Dr Abu Bakar Sulaiman FASc
15) YB Tan Sri Dato' Haji Musa Mohamad FASc
16) Prof Dato' Paduka Dr Mustaffa Embong FASc
17) Prof Puan Sri Datin Dr Nafisah bt Hj Nik Mohd Adeeb FASc
18) Prof Dato' Dr Hashim Yaacob FASc
19) Prof Dr Cheong Soon-Keng FASc
20) Prof Dr Yap Sook Fan FASc

Sains Biologi/*Biological Sciences*

1) Prof Emeritus Dr Chin Hoong Fong FASc
2) Tan Sri Datuk Dr Ahmad Zaharudin Idrus FASc
3) Tan Sri Dato' Dr Syed Jalaludin Syed Salim FASc
4) Prof Dato' Dr Zakri Abdul Hamid FASc
5) Dr Yong Hoi Sen FASc
6) Dato' Dr Salleh Mohd.Nor FASc
7) Prof Dr Abdul Latif Ibrahim FASc
8) Prof Emeritus Dato' Dr Ahmad Nawawi Hj Ayob FASc
9) Tan Sri Dato' Dr Ahmad Mustaffa Babjee FASc
10) Dr Francis S.P. Ng FASc
11) Prof Dr Ho Yin Wan FASc

12) Prof Dr Koh Chong Lek FASc
13) Prof Dr Mak Chai @ Mak Lian Fong FASc
14) Prof Dr Yap Han Heng FASc
15) Prof Dr Mohd Nordin Hj Hassan FASc
16) Dr Rajanaidu Nookiah FASc
17) Prof Dato' Dr Sheikh Omar Abdul Rahman FASc

Sains Kejuruteraan/*Engineering Sciences*

1) Academician Dato' Ir Lee Yee Cheong FASc
2) Tan Sri Ir J.G. Daniel FASc
3) Dato' Ikmal Hisham Albakri FASc
4) Tan Sri Dato' Ir Abu Zarim Haji Omar FASc
5) Tan Sri Dato' Ir Haji Shahrizaila Abdullah FASc
6) Dato' Dr Muhammad Ridzuan Haji Salleh FASc
7) Tan Sri Dato' Ir Muhammad Yusuff Muhammad Yunus FASc
8) Ir Hong Lee Pee FASc
9) Mr Hijjas Kasturi FASc
10) Ir K. Kumarasivam FASc
11) Dato' Ir Hj Ahmad Zaidee Hj Laidin FASc
12) Dato' Dr Mohd Ariffin Hj. Aton FASc
13) Dr Ting Wen Hui FASc
14) Dato' Dr Abu Bakar Jaafar FASc

Matematik dan Sains Fizik/*Mathematical and Physical Sciences*

1) Dato' Dr Chatar Singh FASc
2) Tan Sri Dato' Dr Ahmad Tajuddin Ali FASc
3) Prof Dato' Dr Mohd Sham Mohd Sani FASc
4) Datuk Dr R. Ratnalingam FASc
5) Mr Fateh Chand FASc
6) Prof Dr Shaharir Mohd Zain FASc
7) Dr Chia Swee Ping FASc
8) Dr Fon Wai Chu FASc

Sains Kimia/*Chemical Sciences*

1) Academician Tan Sri Datuk Dr Augustine S.H. Ong FASc
2) Academician Tan Sri B.C. Sekhar FASc

3) Dr Haji Badri Muhammad FASc
4) Dr V.G. Kumar Das FASc
5) Dr Ng Soon FASc
6) Dr Ho Chee Cheong FASc

Teknologi Maklumat/*Information Technology*

1) YM Tengku Datuk Dr Mohd Azzman Shariffadeen Tengku Ibrahim FASc
2) Dato' Ir Dr Mohamad Zawawi Ismail FASc
3) Tan Sri Dato' Ir Shamsuddin Abdul Kadir FASc
4) Tuan Haji Ismail Sulaiman FASc
5) Prof Emeritus Dato' Dr Tan Wang Seng FASc
6) Dr Mohamed Arif Nun FASc
7) Dr Mohamad Awang Lah FASc
8) Dr Mohamad Zahran Dato' Sheikh Abdul Halim FASc
9) Prof Dr Zaharin Yusoff FASc
10) Prof Ir Dr Zainul Abidin Md Shariff FASc
11) Prof Dr Mashkuri Yaacob FASc

Pembangunan Sains & Teknologi dan Industri/ *Science & Technology Development and Industry*

1) Academician Tan Sri Datuk Dr Haji Omar Abdul Rahman FASc
2) Academician Tan Sri Dato' Dr Mohd Rashdan Haji Baba FASc
3) Tan Sri Dato' (Dr) Haji Ani Arope FASc
4) Tan Sri Dato' Dr Mohamed Yusof Hashim FASc
5) Tan Sri Dato' Ir Wan A. Rahman Hj Wan Yaacob FASc
6) Datuk Dr S.M. Alhady FASc
7) Datuk Dr Abdul Aziz S.A. Kadir FASc
8) Datuk Yong Poh Kon FASc
9) Mr T. Ananda Krishnan FASc
10) Datuk Dr Yusuf Basiron FASc
11) Datuk Alladin Hashim FASc
12) Prof Dato' Dr Mazlan Othman FASc
13) Tuan Hj Ir Mohamed Zohari Mohamed Shaharun FASc

Ahli Majlis/*Council Members*

Presiden/*President*	Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc (1995-28 April 2001) Tan Sri Datuk Dr Ahmad Zaharudin Idrus FASc (w.e.f. 28 April 2001)
Naib Presiden/*Vice President*	Academician Dato' Ir Lee Yee Cheong FASc
Setiausaha Agung/*Secretary General*	Dato' Dr Salleh Mohd Nor FASc
Bendahari Kehormat/*Honorary Treasurer*	Academician Tan Sri Datuk Dr Augustine S.H. Ong FASc
Ahli Majlis/*Members of Council*	Prof Dato' Dr Zakri Abdul Hamid FASc (resigned in April 2001) Datuk Dr Abdul Aziz S.A. Kadir FASc Encik Fatch Chand FASc Prof Dr Looi Lai Meng FASc Dato' Dr Ikmal Hisham Albakri FASc Dr Ho Chee Cheong FASc Prof Datuk Paduka Dr Mustafa Limbong FASc Ir K. Kumarasivam FASc (until 28 April 2001) Dr Chia Swee Ping FASc (until 28 April 2001) Prof Dr Abdul Latiff Ibrahim FASc (until 28 April 2001) Dr Mohamed Arif Nun FASc Dato' Dr Mohd Ariffin Hj. Aton FASc Datuk Dr Yusuf Basiron FASc (April 2001-April 2002)) Dato' Dr Mohamad Zawawi Ismail FASc Datuk Ir Dr Hj Ahmad Zaidee Laidin FASc Dr Yong Hoi Sen FASc

Mesyuarat Majlis/*Council Meetings*

Bagi tahun berakhir pada 31 Disember 2001, Majlis telah bermesyuarat tujuh (7) kali seperti berikut:

- 26 Januari 2001
- 2 Mac 2001
- 26 Mei 2001
- 14 Julai 2001
- 29 September 2001
- 24 November 2001
- 29 Disember 2001

Pada mesyuarat ini, Majlis telah membincangkan isu-isu berikut:

- Kajian Semula Belanjawan 2000, Belanjawan 2001 dan aktiviti
- Kuiz Sains Nasional 2001
- Geran Perubatan Dr Ranjeet Bhagwan Singh dan Syarahan Memorial
- Aktiviti-aktiviti ASM di bawah 5 program utama
- Projek Antartika

For the year ending 31st December 2001, the Council met seven (7) times as follows:

- *26th January 2001*
- *2nd March 2001*
- *26th May 2001*
- *24th July 2001*
- *29th September 2001*
- *24th November 2001*
- *29th December 2001*

At these meetings, the Council deliberated on the following issues:

- *2000 Budget Review and 2001 Budget and Programme of Activities*
- *National Science Quiz 2001*
- *Dr Ranjeet Bhagwan Singh Research Grant and Memorial Lecture*
- *ASM activities under 5 main program*
- *Project on Antarctica*

Jawatankuasa Kerja dan Program/ *Working and Programme Committees*

Untuk membantu dalam pentadbitran dan operasi Akademi, Majlis telah menubuhkan beberapa Jawatankuasa yang bertanggungjawab untuk menjalankan beberapa fungsi dan tanggungjawab. Dalam tahun 2001 Jawatankuasa-jawatankuasa adalah seperti berikut:

To assist its management and operation of the Academy, the Council has set up various committees which are responsible for carrying out specific functions and responsibilities. In 2001, the following committees were operational:

JAWATANKUASA EKSEKUTIF/*EXECUTIVE COMMITTEE*

Presiden/*President*	Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc (1995-April 2001) Tan Sri Datuk Dr Zaharudin Idrus FASc (w.e.f. April 2001)
Naib Presiden/*Vice President*	Academician Dato' Ir Lee Yee Cheong FASc
Setiausaha Agung/ *Secretary General*	Dato' Dr Salleh Mohd Nor FASc
Bendahari Kehormat/ *Honorary Treasurer*	Academician Tan Sri Datuk Dr Augustine S.H. Ong FASc

JAWATANKUASA KEWANGAN/*FINANCE COMMITTEE*

Pengerusi/*Chairman*	Academician Tan Sri Datuk Dr Augustine S.H. Ong FASc

JAWATANKUASA HAL EHWAL ANTARABANGSA/ *INTERNATIONAL AFFAIRS COMMITTEE*

Pengerusi/*Chairman*	Academician Dato' Ir Lee Yee Cheong FASc

KUMPULAN ANTARABANGSA DAN ISU STRATEGIK/ *INTERNATIONAL AND STRATEGIC ISSUES (ISI) GROUP*

Pengerusi/*Chairman*	Tan Sri Datuk Dr Ahmad Zaharudin Idrus FASc (w.e.f. April 2001)
Setiausaha/*Secretary*	Dato' Dr Salleh Mohd Nor FASc
Ahli/*Members*	Academician Dato' Ir Lee Yee Cheong FASc Tan Sri Dato' Ir Shahrizaila Abdullah FASc Prof Dato' Dr Mohd Zawawi Ismail FASc YM Tengku Datuk Dr Mohd Azzman Shariffadeen Tengku Ibrahim FASc Prof Dato' Dr Sham Sani FASc Encik Fateh Chand FASc Dr Yong Hoi Sen FASc

JAWATANKUASA KEAHLIAN/ *MEMBERSHIP COMMITTEE*

Pengerusi/*Chairman*	Tan Sri Datuk Dr Ahmad Zaharudin Idrus FASc (w.e.f. April 2001)
Setiausaha/*Secretary*	Dato' Dr Salleh Mohd Nor FASc
SAINS PERUBATAN/*MEDICAL SCIENCES* **Pengerusi/*Chairman***	Prof Dr Looi Lai Meng FASc
SAINS KEJURUTERAAN/ *ENGINEERING SCIENCES* **Pengerusi/*Chairman***	Dato' Dr Ikmal Hisham Albakri FASc
SAINS BIOLOGI/*BIOLOGICAL SCIENCES* **Pengerusi/*Chairman***	Dr Yong Hoi Sen FASc
SAINS MATEMATIK & FIZIKAL/ *MATHEMATICAL & PHYSICAL SCIENCES* **Pengerusi/*Chairman***	En Fateh Chand FASc
SAINS KIMIA/*CHEMICAL SCIENCES* **Pengerusi/*Chairman***	Tan Sri Dato' Dr Augustine S.H. Ong FASc
TEKNOLOGI MAKLUMAT/ *INFORMATION TECHNOLOGY* **Pengerusi/*Chairman***	Dr Mohd Arif Nun FASc
PEMBANGUNAN S&T DAN INDUSTRI/*S&T DEVELOPMENT AND INDUSTRY* **Pengerusi/*Chairman***	Datuk Dr Abdul Aziz S.A. Kadir FASc

JAWATANKUASA PROGRAM/
PROGRAMME COMMITTEE

Pengerusi Koordinator/ *Coordinating Chairman*	Tan Sri Datuk Dr Ahmad Zaharudin Idrus FASc (w.e.f. 28 April 2001)

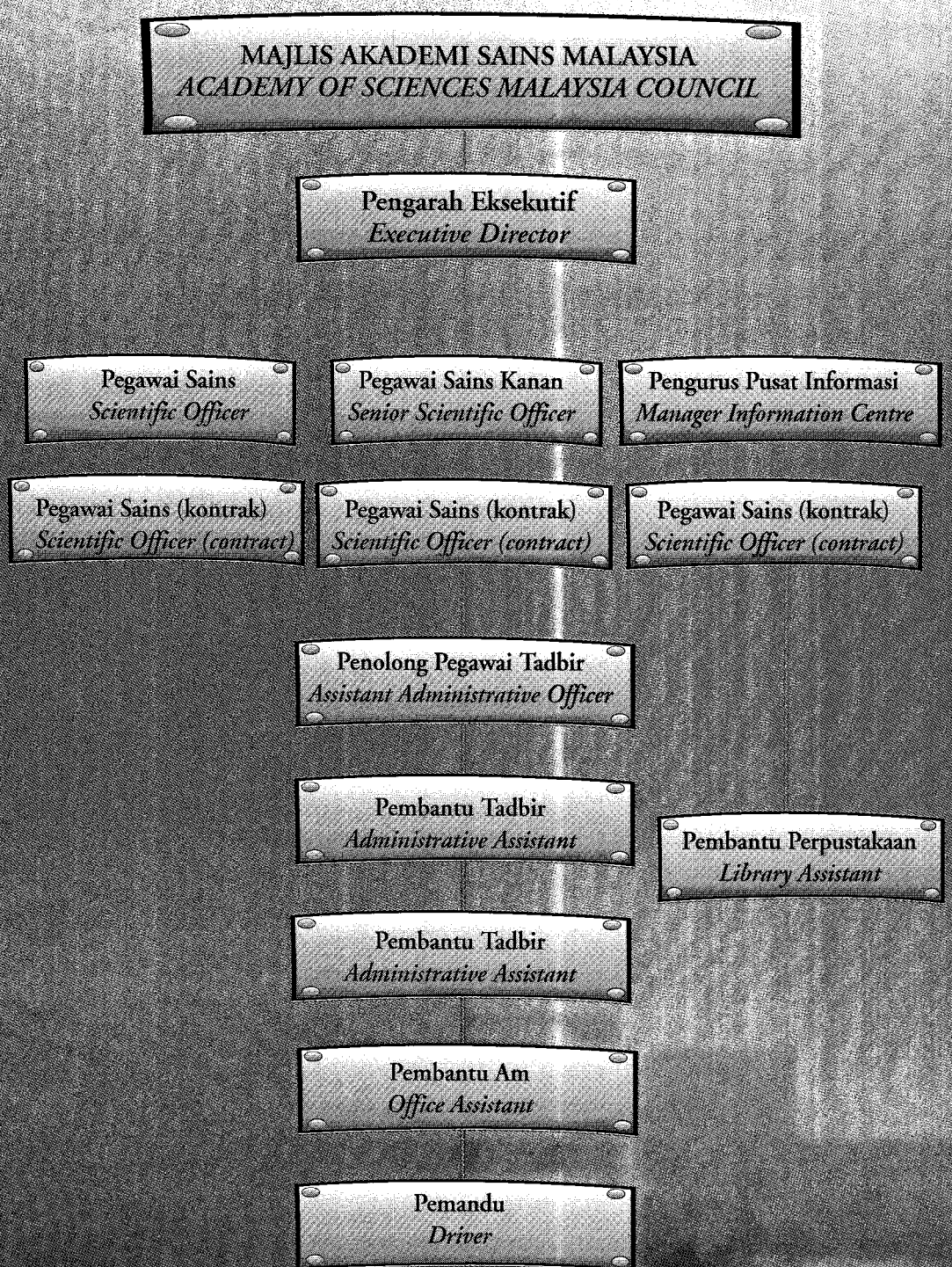
JAWATANKUASA KERJA/
WORKING COMMITTEE

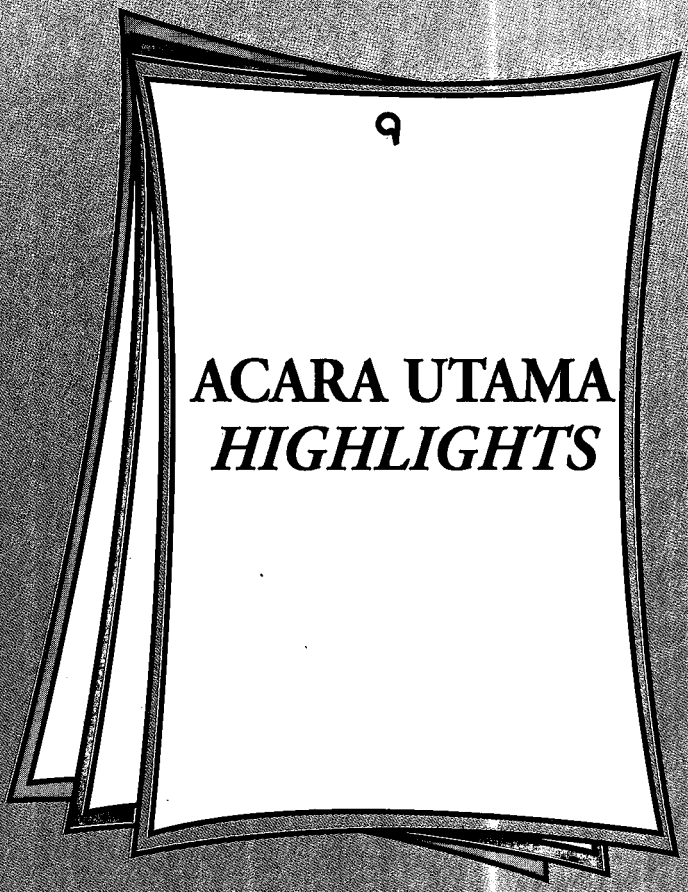
NASIHAT KEPADA KERAJAAN/*ADVICE TO GOVERNMENT*	
Pengerusi Koordinator/ *Coordinating Chairman*	Tan Sri Datuk Dr Ahmad Zaharudin Idrus FASc (w.e.f 28 April 2001)
PENDIDIKAN SAINS/ ***SCIENCES EDUCATION*** **Pengerusi/*Chairman***	Dato' Ir Hj Ahmad Zaidee Hj Laidin FASc
PERTANIAN DAN SEKTOR BERASASKAN SUMBER/ ***AGRICULTURE AND RESOURCE BASED SECTORS*** **Pengerusi/*Chairman***	Datuk Dr Abdul Aziz S.A Kadir FASc
BIODIVERSITI/*BIODIVERSITY* **Pengerusi/*Chairman***	Dato' Dr Salleh Mohd Nor FASc
PENGURUSAN SUMBER ASLI/*NATURAL RESOURCES MANAGEMENT* **Pengerusi/*Chairman***	Encik Fatch Chand FASc
KESEDARAN DAN KEFAHAMAN AWAM MENGENAI S&T/ ***PUBLIC S&T AWARENESS, UNDERSTANDING AND LEADERSHIP*** **Pengerusi/*Chairman***	Dr Ho Chee Cheong FASc
BUDAYA KECEMERLANGAN/ANUGERAH S&T/PROGRAM NOBEL LAUREATE/*CULTURE OF EXCELLENCE/SET AWARDS/NOBEL LAUREATE PROGRAM* **Pengerusi/*Chairman***	Dato' Dr Salleh Mohd Nor FASc
SUMBANGAN KEPADA PEMBANGUNAN INDUSTRI –MENINGKATKAN KEUPAYAAN TEKNOLOGI/ ***CONTRIBUTION TO INDUSTRIAL DEVELOPMENT – ENHANCING TECHNOLOGICAL CAPABILITY*** **Pengerusi/*Chairman***	Dato' Dr Ariffin Aton FASc

TEKNOLOGI MAKLUMAT/ *INFORMATION TECHNOLOGY* Pengerusi/*Chairman*	Dato' Dr Ir Mohd Zawawi Ismail FASc
PENERBITAN/*PUBLICATION* Pengerusi/*Chairman*	Dr Yong Hoi Sen FASc
ALAM SEKITAR& SUMBER SEMULAJADI/ *ENVIRONMENT & NATURAL RESOURCES* Pengerusi/*Chairman*	Encik Fateh Chand FASc
TABUNG AMANAH PERUBATAN DR RANJEET BHAGWAN SINGH/ *DR RANJEET BHAGWAN SINGH MEDICAL RESEARCH FUND* Pengerusi/*Chairman*	Prof Dr Looi Lai Meng FASc
TASK FORCE P&P MALAYSIA DI ANTARTIKA/*MALAYSIAN TASK FORCE ON MALAYSIAN R&D IN ANTARCTICA* Pengerusi/*Chairman*	Dato' Dr Salleh Mohd Nor FASc
JAWATANKUASA PENCALONAN AHLI/ *SEARCH COMMITTEE* Pengerusi/*Chairman*	Dato' Dr Salleh Mohd Nor FASc
'TASK FORCE' PROJEK TAMAN BOTANI/*TASK FORCE ON NATIONAL BOTANIC GARDEN* Pengerusi/*Chairman*	Dato' Dr Salleh Mohd Nor FASc
PANEL SAINTIFIK PROGRAM PERTUKARAN DENGAN ROYAL SOCIETY DAN KOSEF/ *SCIENTIFIC PANEL FOR EXCHANGE PROGRAM WITH ROYAL SOCIETY AND KOSEF* Pengerusi/*Chairman*	Tan Sri Dato' Dr Syed Jalaludin Syed Salim FASc
DIVISYEN SAINS PERUBATAN/ *MEDICAL SCIENCES DIVISION* Pengerusi/*Chairman*	Tan Sri Dato' Dr Abu Bakar Sulaiman FASc

Divisyen Sains Kejuruteraan/ *Engineering Sciences Division* **Pengerusi/*Chairman***	Tan Sri Ir J.G. Daniel FASc
'Task Force' mengenai Sustainable Development/ *Task Force on Sustainable Development* **Pengerusi/*Chairman***	Prof Dr Mohd Nordin Hj Hassan FASc
Polisi S&T dan Pengurusan/ *S&T Policy and Management* **Pengerusi/*Chairman***	Dato' Dr Yusof Basiron FASc

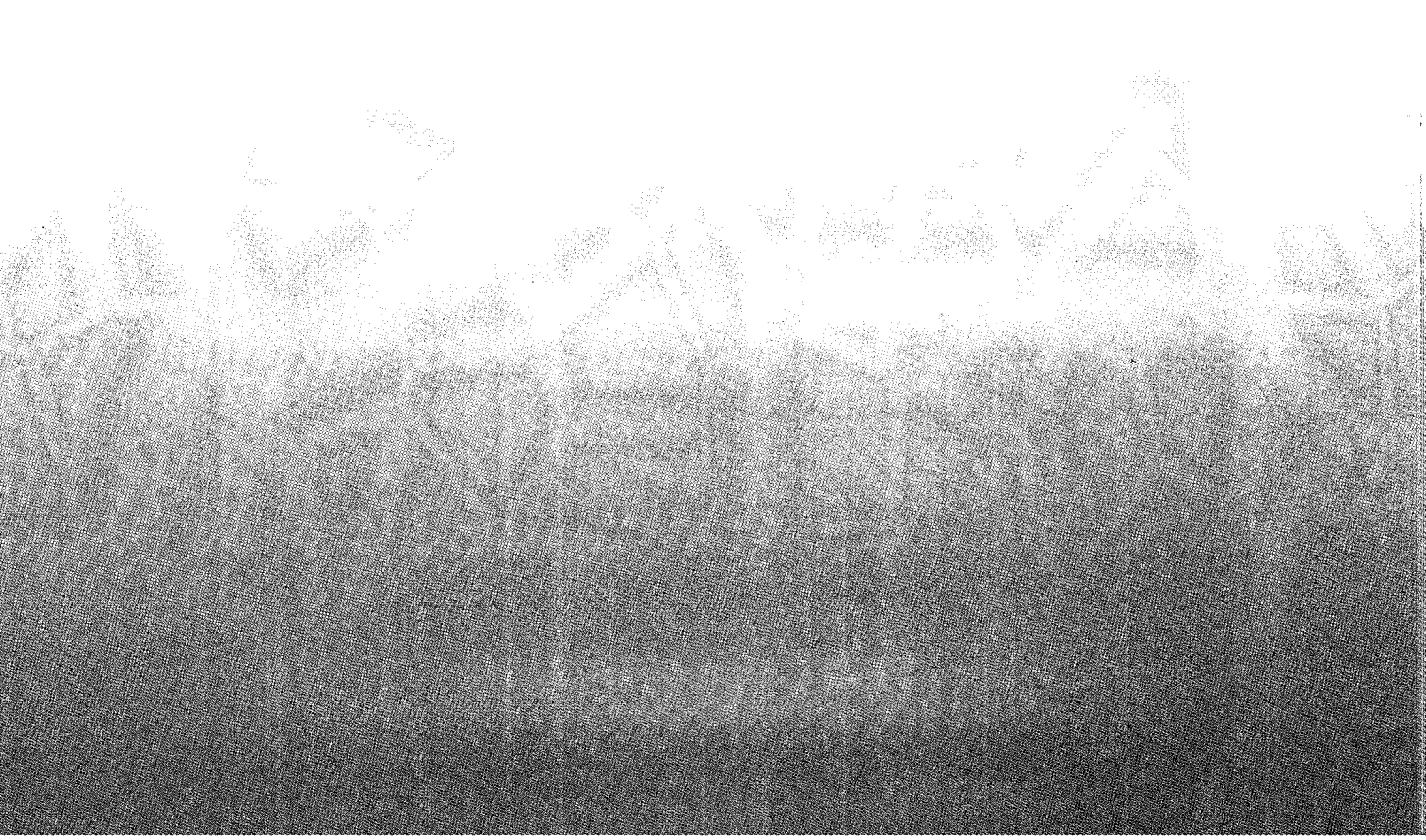
Carta Organisasi/*Organization Chart*





๑

ACARA UTAMA
HIGHLIGHTS



Mesyuarat Agung Tahunan Ke Enam Akademi Sains Malaysia

Academy of Sciences Malaysia Sixth Annual General Meeting

Akademi Sains Malaysia mengadakan Mesyuarat Agung Tahunannya yang ke enam di Asia-Europe Institute, Universiti Malaya pada 27 April 2001 dengan dipengerusikan oleh Presiden. Seramai 35 orang Fellow menghadiri mesyuarat tersebut.

Presiden Akademi, Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc menyampaikan ucapan aluannya dan Ucapan Presiden.

Mesyuarat membincangkan dan perkara-perkara berikut:

⇒ Laporan Tahunan 2000 dan Penyata Akaun berakhir pada 31 Disember 2000.

⇒ Pemilihan lapan Fellow baru:
- Prof Dr Yap Sook Fan (Sains Perubatan)
- Prof Dr Cheong Soon Keng (Sains Perubatan)
- Prof Dr Mohd Nordin Hassan (Sains Hayat)
- Dr Rajanaidu Nookiah (Sains Hayat)
- Prof Dato' Dr Sheikh Omar Abdul Rahman (Sains Hayat)
- Prof Dr Mashkuri Yaacob (Teknologi Maklumat)
- Dato' Dr Abu Bakar Jaafar (Sains Kejuruteraan)
- Dr Saharan Hj Anang (Pembangunan S&T dan Industri)

The Academy of Sciences Malaysia held its Sixth Annual General Meeting (AGM) at the Asia-Europe Institute, University of Malaya on 27 April 2001 with the President in the Chair. Thirty-five Fellows attended the AGM.

The President of the Academy, Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc presented his welcoming speech and the Presidential Address.

The meeting discussed and approved the following:

⇒ *2000 Annual Report and Statement of Accounts ending 31 December 2000.*

⇒ *Election of eight new Fellows of the Academy:*
- *Prof Dr Yap Sook Fan (Medical Sciences)*
- *Prof Dr Cheong Soon Keng (Medical Sciences)*
- *Prof Dr Mohd Nordin Hassan (Biological Sciences)*
- *Dr Rajanaidu Nookiah (Biological Sciences)*
- *Prof Dato' Dr Sheikh Omar Abdul Rahman (Biological Sciences)*
- *Prof Dr Mashkuri Yaacob (Information Technology)*
- *Dato' Dr Abu Bakar Jaafar (Enginering Sciences)*
- *Dr Saharan Hj Anang (S&T Development and Industry)*

⇒ Perlantikan Exco dan Ahli Majlis ASM 2001

PRESIDEN:
Tan Sri Datuk Dr Ahmad Zaharudin Idrus FASc

NAIB PRESIDEN :
Academician Dato' Ir Lee Yee Cheong FASc

SETIAUSAHA AGUNG:
Dato' Dr Salleh Mohd Nor FASc

BENDAHARI KEHORMAT:
Academician Tan Sri Datuk Dr Augustine S.H. Ong FASc

AHLI MAJLIS:
Dr Arif Nun FASc
Prof Dr Ho Chee Cheong FASc
Prof Dato' Paduka Mustaffa Embong FASc
Datuk Ahmad Zaidee Laidin FASc
Dr Yong Hoi Sen FASc
Dato' Ir Dr Mohamad Zawawi Ismail FASc

⇒ *Election of Exco and ASM Council Members 2001*

PRESIDENT:
Tan Sri Datuk Dr Ahmad Zaharudin Idrus FASc

VICE PRESIDENT:
Academician Dato' Ir Lee Yee Cheong FASc

SECRETARY GENERAL:
Dato' Dr Salleh Mohd Nor FASc

TREASURER:
Academician Tan Sri Datuk Dr Augustine S.H. Ong FASc

MEMBERS OF COUNCIL:
Dr Arif Nun FASc
Prof Dr Ho Chee Cheong FASc
Prof Dato' Paduka Mustaffa Embong FASc
Datuk Ahmad Zaidee Laidin FASc
Dr Yong Hoi Sen FASc
Dato' Ir Dr Mohamad Zawawi Ismail FASc

Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc menyerahkan tugas sebagai Presiden ASM kepada Tan Sri Datuk Dr Ahmad Zaharudin Idrus FASc
Handing over President's post between Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc and Tan Sri Datuk Dr Ahmad Zaharudin Idrus FASc



Exco Akademi bersama Presiden ASM semasa Mesyuarat Agung Tahunan ke 6
Exco's of the Academy with the New President's during the 6th ASM Annual Geneal Meeting

Semasa mesyuarat Presiden telah mengumumkan Tan Sri Dato' Dr Mohd. Rashdan Baba FASc telah dipilih sebagai Fellow Kanan ASM. Pemilihan telah dibuat berdasarkan cadangan Jawatankuasa Khas yang dipengerusikan oleh Tan Sri Halim Ali. Turut diumumkan bahawa DYMM Yang Dipertuan Agung telah memperkenankan perlantikkan Tan Sri Datuk Dr Ahmad Zaharudin Idrus FASc sebagai Presiden baru Akademi bagi tempoh April 2001 hingga April 2004.

Tan Sri Datuk Dr Ahmad Zaharudin Idrus FASc, Presiden baru ASM telah menyampaikan ucapan sulung beliau di Mesyuarat Agung Tahunan.

During the AGM the President announced that Tan Sri Dato' Dr Mohd. Rashdan Baba was elected as ASM Senior Fellow. The election was based on recommendations of a Special Committee chaired by Tan Sri Halim Ali. It was also informed that DYMM Yang Dipertuan Agong has consented to the appointment of Tan Sri Datuk Dr Ahmad Zaharudin Idrus FASc as the new President of the Academy for the period of April 2001 to April 2004.

Tan Sri Datuk Dr Ahmad Zaharudin Idrus FASc, the Academy's new President gave his inception speech at the AGM.

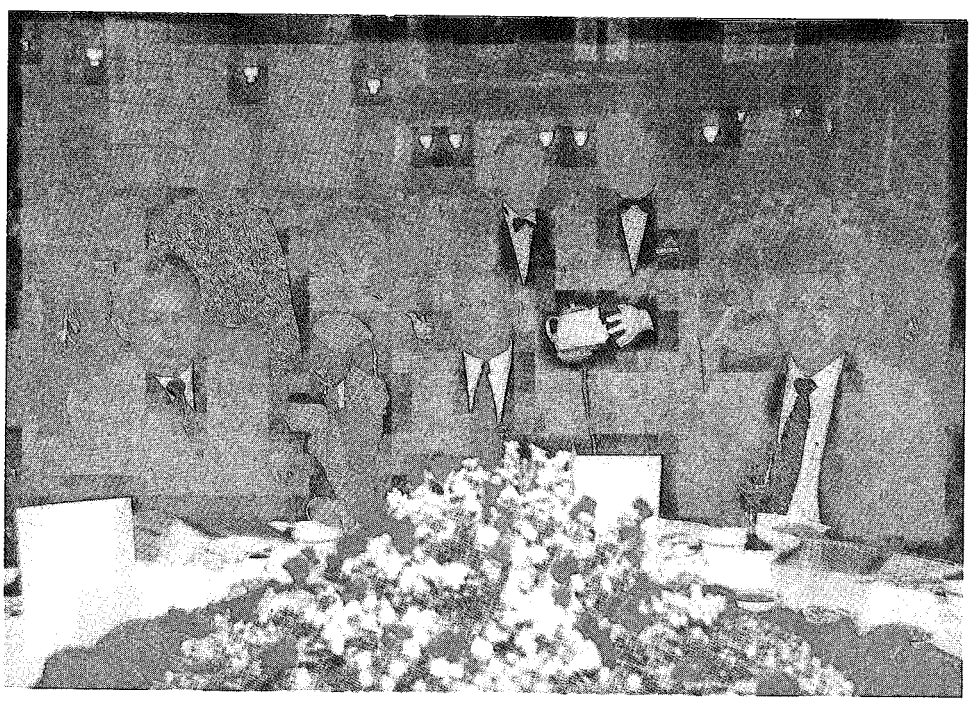
Majlis Makan Malam Tahunan ASM Ketujuh 2001
ASM Seventh Annual Dinner 2001

Akademi Sains Malaysia menganjurkan Jamuan Makan Malam yang ketujuh pada 22 Oktober 2001 di Grand Ballroom, Sunway Lagoon Resort Hotel. Majlis di hadiri oleh YB Menteri Sains, Teknologi dan Alam Sekitar, Dato' Seri Law Hieng Ding.

Seramai lebih kurang 660 orang tetamu yang terdiri dari Fellow Akademi, ketua dan pegawai kanan kementerian dan agensi kerajaan serta para peserta dan Persidangan Antarabangsa Pendidikan Sains dan Matematik Rendah dan Menengah 2001 menghadiri Jamuan Makan Malam tersebut.

The Academy of Sciences Malaysia held its seventh Annual Dinner 2001 on 22 October 2001 at the Grand Ballroom, Sunway Lagoon Resort Hotel. The dinner was graced by the Hon Minister of Science, Technology and the Environment, Dato' Seri Law Hieng Ding.

Some 660 guests comprising of Fellows of the Academy, Heads and Senior Officials of Government Ministries and Agencies, and participants of the International Conference on Primary and Secondary Schools Science and Mathematics Education 2001 (ICPSM2001).



Tetamu Kehormat YB Dato' Seri Law Hieng Ding bersama YB Dato' Zainal Dahalan dan Tan Sri Datuk Dr Ahmad Zaharudin Idrus FASc menghadiri Majlis Makan Malam Tahunan ASM
Honorary Guests YB Dato' Seri Law Hieng Ding with YB Dato' Zainal Dahalan and Tan Sri Datuk Dr ahmad Zaharudin Idrus FASc attending the ASM Annual Dinner

Presiden ASM menyampaikan ucapan alu-aluan disusuli dengan ucapan oleh YB Menteri. Di antara yang diutarakan di dalam ucapan YB Menteri adalah kepentingan sains dan teknologi bagi memastikan negara mampu mengadaptasi K-ekonomi. YB Menteri juga mendorong rakyat Malaysia untuk meningkatkan usaha bagi mempercepatkan pembangunan sains dan teknologi, dengan tahap komitmen yang tinggi kepada pengetahuan, inovasi dan kecemerlangan.

Salah satu acara kemuncak semasa majlis makan malam tersebut adalah penyampaian Sijil Fellow Kanan oleh YB Menteri kepada Tan Sri Dato' Dr Mohd. Rashdan Baba FASc. Sijil diterima oleh anak perempuan beliau. Para pemenang Pertandingan Peralatan Pengajaran dan Pembelajaran Inovatif Sains dan Matematik turut menerima hadiah masing-masing daripada YB Menteri.

YB Menteri juga menyampaikan Sijil Fellow kepada lapan orang Fellow baru Akademi. Mereka adalah:

◊ Prof Dr Yap Sook Fan FASc
◊ Prof Dr Cheong Soon Keng FASc
◊ Dato' Dr A. Bakar Jaafar FASc
◊ Prof Dr Mohd Nordin Hj Hassan FASc
◊ Dr Rajanaidu Nookiah FASc
◊ Prof Dato' Dr Sheikh Omar Abd Rahman FASc
◊ Prof Ir Dr Mashkuri Hj Yaacob FASc
◊ Dr Saharan Hj Anang FASc

The President of ASM presented a welcoming speech followed by a speech from the Minister. The highlights of the Minister's speech were the importance of science and technology in transforming the nation to adapt to the K-economy. The Minister urged all Malaysians to accelerate their endeavour to enhance the development of S&T, with the highest level of commitment to knowledge, innovation and excellence.

One of the highlights of the dinner event was the presentation of Senior Fellow Certificate by YB Minister to Tan Sri Dato' Dr Mohd. Rashdan Baba FASc. His daughter, Dr Rashylda Rashdan accepted the certificate on behalf of Tan Sri Rashdan FASc. The winners of the National Exhibition and Competition of Science and Mathematics Innovative Teaching and Learning Kits 2001 also received their prizes from the Hon Minister.

The Minister also presented Fellowship Certificates to eight newly elected Fellows of the Academy. They are:

◊ *Prof Dr Yap Sook Fan FASc*
◊ *Prof Dr Cheong Soon Keng FASc*
◊ *Dato' Dr A. Bakar Jaafar FASc*
◊ *Prof Dr Mohd Nordin Hj Hassan FASc*
◊ *Dr Rajanaidu Nookiah FASc*
◊ *Prof Dato' Dr Sheikh Omar Abd Rahman FASc*
◊ *Prof Ir Dr Mashkuri Hj Yaacob FASc*
◊ *Dr Saharan Hj Anang FASc*

Majlis Makan Malam Khas
ASM Special Dinner

Akademi Sains Malaysia menganjurkan satu Majlis Makan Malam Khas pada 5 Jun 2001 di Sheraton Imperial Hotel, Kuala Lumpur bagi meraikan Presiden Akademi yang akan mengundur diri iaitu Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc serta Presiden baru Akademi, Tan Sri Datuk Dr Ahmad Zaharudin Idrus FASc. Tetamu kehormat di Jamuan Makan Malam tersebut adalah YB Menteri Sains, Teknologi dan Alam Sekitar, Dato' Seri Law Hieng Ding. Diantara orang kenamaan yang turut hadir adalah Duta-duta dari Republik Rakyat China, Sweden, Republik Kyrgyz dan Datuk Ng Kam Chiu, Ketua Setiausaha Kementerian Sains, Teknologi dan Alam Sekitar. Seramai lebih kurang 80 orang tetamu hadir di majlis tersebut. Acara kemuncak di malam itu adalah ucapan oleh Academician Tan Sri Omar dan Tan Sri Datuk Dr Ahmad Zaharudin. Dalam ucapannya, Tan Sri Omar mengenang kembali tahun-tahun beliau sebagai Presiden Pertama Akademi dari 1995 – 2001. Beliau juga menyentuh mengenai konsep persaraan dalam konteks K-ekonomi. Menurut beliau 'K-workers' akan terus bekerja melepasi waktu persaraan samada mereka akan terus mengajar, atau menjalankan penyelidikan, atau

The Academy organized a Special Dinner on 5 June 2001 at the Sheraton Imperial Hotel, Kuala Lumpur to honor the outgoing President of the Academy, Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc and the new President of the Academy Tan Sri Datuk Dr Ahmad Zaharudin Idrus FASc. The dinner was graced by the Hon. Minister of Science, Technology and the Environment, Dato' Seri Law Hieng Ding. Among the other dignitaries who attended the dinner were their Excellencies the Ambassadors from the People's Republic of China, Sweden, Republic of Kyrgyz and Datuk Ng Kam Chiu, Secretary General of the Ministry of Science, Technology and the Environment.

About 80 invited guests attended the dinner. The highlights of the evening were the speeches of Academician Tan Sri Omar and Tan Sri Datuk Dr Ahmad Zaharudin. In his speech, Academician Tan Sri Omar fondly recalled the years he served as the Founding President of the Academy from 1995–2001. He also touched on the concept of retirement in K-Economy. K-Workers would continue to work past retirement; they continue to teach, do research, and provide consultation or giving input into businesses. Academician Tan Sri Omar also stressed that the Academy really

memberi khidmat rundingan atau input kepada perniagaan. Academician Tan Sri Omar juga menekankan bahawa Akademi amat memerlukan sokongan penuh, sumbangan dan penglibatan dari semua Fellow untuk Akademi terus melaksanakan fungsi-fungsinya dengan efektif.Ucapan Tan Sri Datuk Dr Ahmad Zaharudin menekankan kepentingan penerapan sains sebagai sebahagian dari kebudayaan kita dimana 'Sains Untuk Semua' patut menjadi salah satu teras utama Akademi. Beliau juga menekankan bahawa Akademi harus menonjolkan sumbangan komuniti SET di negara ini dan dengan perubahan persekitaran global, Akademi harus bertindak dan menyesuaikan diri serta bersikap terbuka terhadap idea dan usaha baru serta mengambil bahagian secara aktif dalam P&P antarabangsa. Majlis Makan Malam diakhiri dengan penyerahan tugas daripada Presiden yang akan mengundurkan diri, Academician Tan Sri Omar kepada Presiden baru, Tan Sri Ahmad Zaharudin serta penyampaian cenderamata.

needs the full support, contribution and participation from all Fellows for it to continue carrying out its functions effectively.

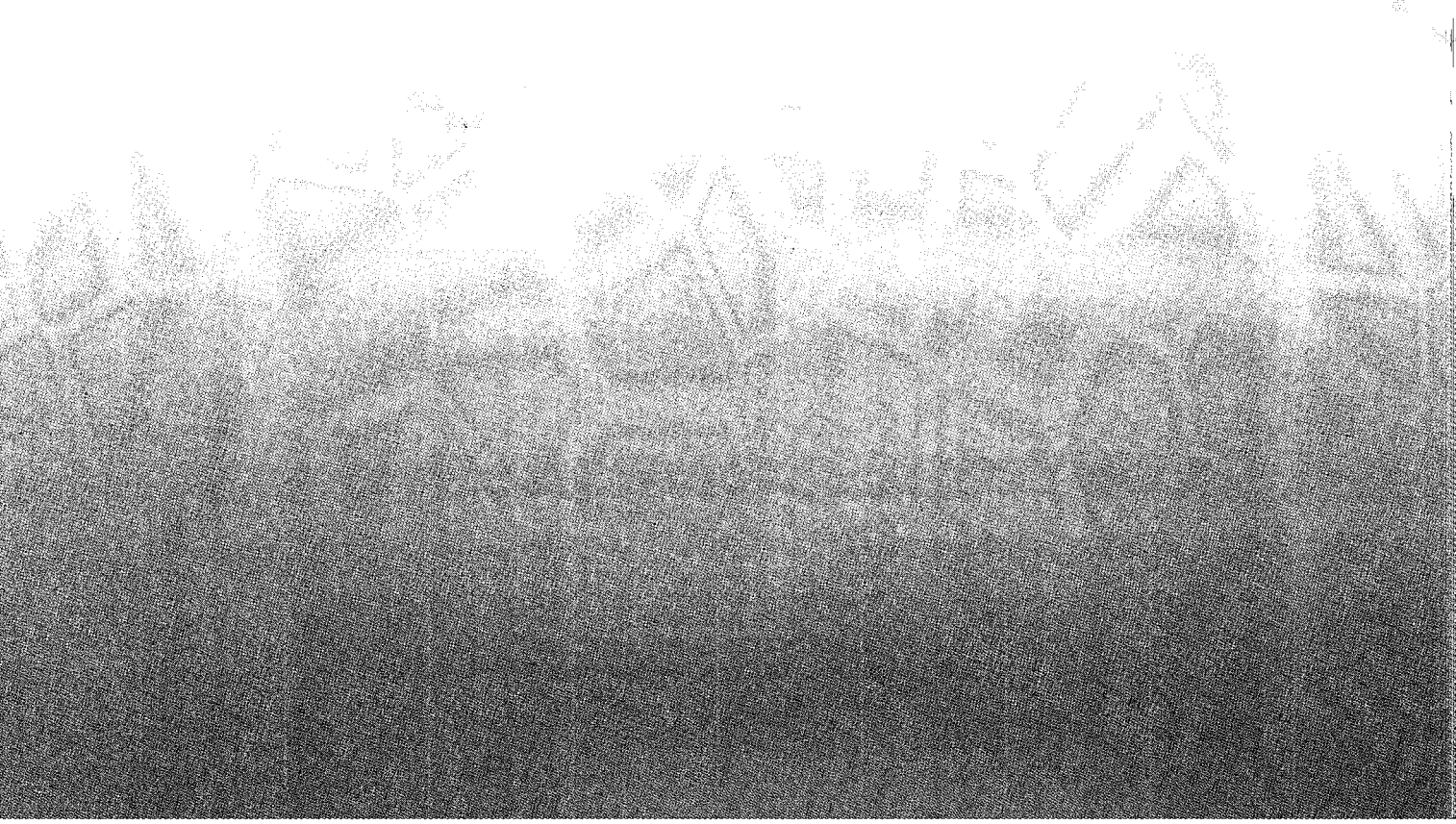
Tan Sri Datuk Dr Ahmad Zaharudin's speech highlighted the importance of promoting science as part of our culture where 'Science for All' should be one of the major thrusts of the Academy. He also stressed that the Academy should highlight the contribution of SET community in this country and given the changing global environment, the Academy needed to react and adapt and be receptive to new ideas and endeavours and to participate actively in international R&D.

The dinner concluded with the handing over of duties from the outgoing President, Academician Tan Sri Omar to the new President, Tan Sri Zaharudin and presentation of souvenir.



๑

AKTIVITI-AKTIVITI
ACTIVITIES



AKTIVITI-AKTIVITI

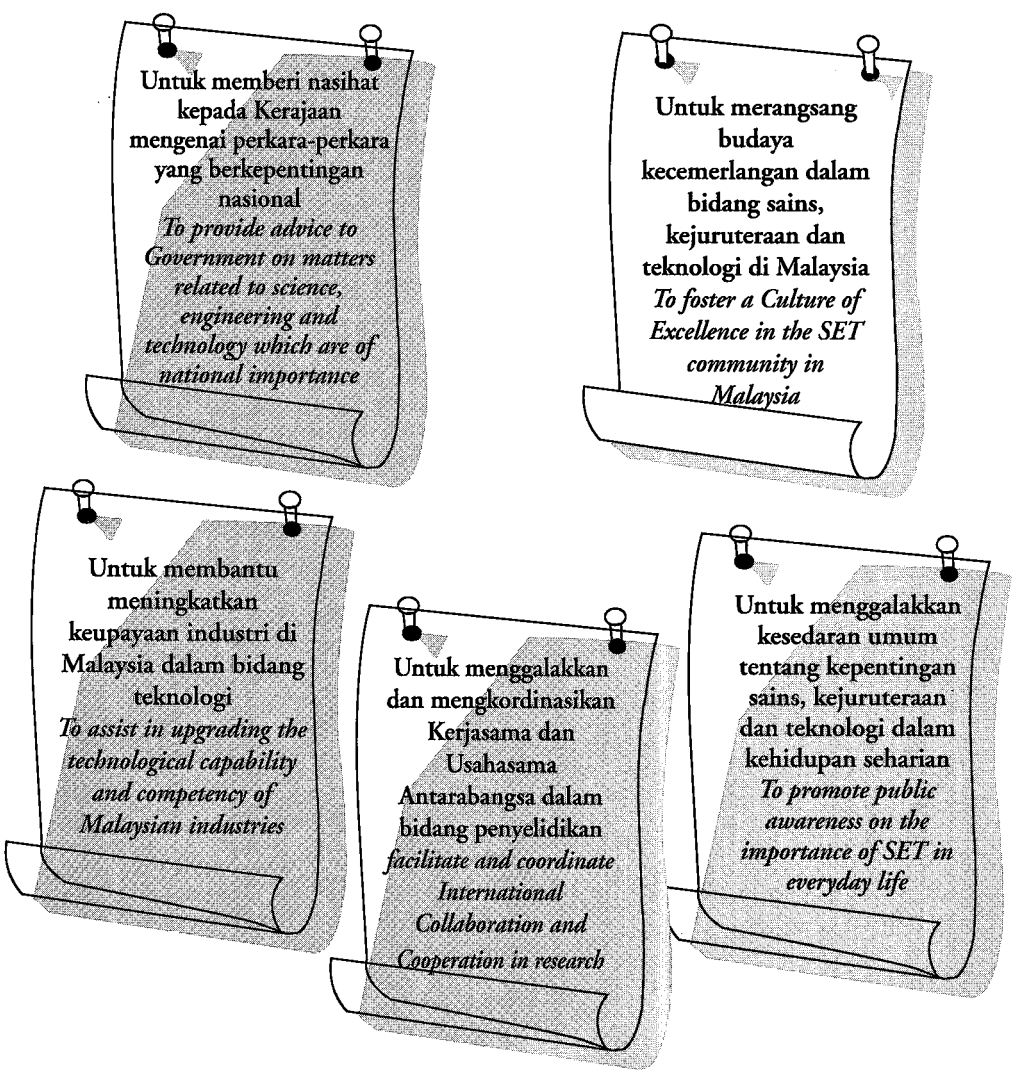
Akademi Sains Malaysia, yang ditubuhkan enam tahun lalu, telah diamanahkan dengan misi 'untuk mencapai, menggalak, serta meningkatkan kecemerlangan dalam bidang sains, kejuruteraan dan teknologi khusus untuk kemajuan dan pembangunan negara dan juga untuk kebaikan manusia sejagat'.

Akademi menjalankan aktivitinya berdasarkan kerangka misinya:

ACTIVITIES

The Academy of Sciences Malaysia, established six years ago, has been entrusted with the mission "to pursue, encourage and enhance excellence in the fields of science, engineering and technology for the development of the nation and the benefit of mankind".

Within the framework of the Academy's mission, it organized its activities based on the following thrust areas:



NASIHAT KEPADA KERAJAAN

Salah satu daripada peranan penting Akademi adalah memberi nasihat kepada Kerajaan mengenai perkara yang berkaitan dengan bidang sains, kejuruteraan dan teknologi. Pada tahun 2001, Akademi telah menjalankan aktiviti berikut :

Kajian Semula Polisi Sains dan Teknologi Kebangsaan

Kajian Semula Polisi Sains dan Teknologi Kebangsaan telah disiapkan pada tahun lepas. Deraf kertas polisi yang dirangka dari laporan kajian semula telah pun dimajukan kepada Majlis Penyelidikan dan Kemajuan Sains Negara (MPKSN) pada 10 Julai 2001. Lanjutan dari itu, Kementerian Sains, Teknologi dan Alam Sekitar akan menyediakan kertas polisi yang akhir untuk dibentangkan kepada Kabinet.

National Technology Mapping Programme II

National Technology Mapping Programme II (NTMP II) yang dilaksanakan oleh Rundingan Industri Malaysia (PRiMA) telah memajukan deraf pertama kepada Unit Perancang Ekonomi (UPE) pada bulan Oktober 2001. Akademi Sains Malaysia yang menjadi penasihat kepada kajian tersebut telah menganjurkan tiga mensyuarat dengan pakar-pakar dari PRiMA untuk membincangkan mengenai laporan tersebut. Ini adalah untuk memastikan laporan akhir kepada UPE akan memenuhi objektifnya terutamanya dari perspektif S&T.

ADVICE TO THE GOVERNMENT

One of the main roles of the Academy is to advise the Government on matters related to science, engineering and technology which are of national importance from time to time. In 2001, the Academy has carried out a number of tasks.

Review of the National Science and Technology Policy

The review of the National Science and Technology Policy has been completed last year. The draft policy paper which was formulated from the report of the review has been presented to Majlis Penyelidikan dan Kemajuan Sains Negara (MPKSN) on 10 July 2001. Consequently, the Ministry of Science, Technology and the Environment is expected to prepare the final policy paper for presentation to the Cabinet.

National Technology Mapping Programme II

The National Technology Mapping Programme II (NTMP II) is conducted by Rundingan Industri Malaysia (PRiMA). The first draft has been submitted to the Economic Planning Unit (EPU) in October, 2001. Academy of Sciences Malaysia being the Advisor to the study has organized three meetings with the expert teams from PRiMA to discuss and comment on the report. This is to ensure that the final report to EPU will meet the national objectives especially from the S&T perspectives.

PROGRAM KECEMERLANGAN SAINS

Objektif Program Kecemerlangan Sains adalah untuk menanam Budaya Cemerlang di dalam bidang sains, kejuruteraan dan teknologi di Malaysia. Akademi telah menganjurkan banyak aktiviti menarik di bawah program in disepanjang tahun 2001.

ASM Eminent Persons Lecture

Akademi Sains Malaysia menganjurkan Syarahan ASM Eminent Person yang kedua pada 28 April 2001 di Asia-Europe Institute, Universiti Malaya, Kuala Lumpur. Syarahan yang bertajuk 'Technology Management Best Practice in Malaysia – Imperatives for the K-Economy' disampaikan oleh Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc. Seramai lebih kurang 200 orang tetamu yang terdiri dari peneraju industri, pengurus sains dan teknologi, para penyelidik, pensyarah universiti, saintis dan wakil-wakil dari kementerian dan agensi yang berkaitan telah menghadiri syarahan tersebut.

Syarahan tersebut merangkumi topik-topik berikut:

- Technology Management Best Practice in Malaysia – the past and the present
- Embracing the K-Economy
- The Challenges for the Academy of Sciences Malaysia

SCIENCE EXCELLENCE PROGRAMME

The objective of the Science Excellence Programme is to inculcate a Culture of Excellence in the fields of science, engineering and technology in Malaysia. The Academy organized many activities under this programme throughout 2001.

ASM Eminent Persons Lecture

The Academy organized its second ASM Eminent Person Lecture on 28th April 2001 at Asia-Europe Institute, University of Malaya, Kuala Lumpur. The lecture entitled "Technology Management Best Practice in Malaysia – Imperatives for the K-Economy" was presented by Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc. About 200 guests comprising captains of industries, science and technology managers, researchers, university lecturers, scientists and representatives from relevant ministries and development agencies attended the lecture.

The lecture addressed the following:

- *Technology Management Best Practice in Malaysia – the past and the present*
- *Embracing the K-Economy*
- *The Challenges for the Academy of Sciences Malaysia*



Academician Tan Sri Omar menekankan dalam konteks K-ekonomi dan rangka Sistem Innovasi Nasional ataupun NIS, Akademi akan memainkan peranan meningkatkan fungsinya sebagai penasihat serta menggalakkan dan mengkoordinasikan kerjasama antarabangsa dalam S&T dengan fokus kepada P&P, pembangunan sumber manusia, penggunaan dan pengambilan pengetahuan.

Seminar Kebangsaan Mengenai Agroforestry

Satu Seminar Peringkat Kebangsaan mengenai 'agroforestry' yang bertemakan 'NAP3 – Getting Agroforestry Moving' telah dianjurkan oleh Kementerian Pertanian, Kementerian Perindustrian Utama dan Akademi Sains Malaysia dari 24-26 April 2001. Objektif Seminar adalah untuk menilai contoh dan metodologi dalam 'agroforesty'; menilai insentif dan faktor-faktor yang membolehkan pembangunan 'agroforestry' dan untuk melakar serta mencadangkan strategi dan pelan tindakan bagi 'agroforestry' kepada Kementerian Pertanian. Seminar yang diadakan di Century Mahkota Hotel, Melaka dihadiri oleh lebih kurang 100 peserta. Hasil dari Seminar tersebut adalah satu deraf cadangan bagi satu strategi nasional serta pelan tindakan untuk 'agroforestry'. Laporan akhir akan dimajukan kepada YAB Perdana Menteri dan YB Menteri Pertanian.

Academician Tan Sri Omar highlighted that in the context of K-Economy and the framework of National Innovation System (NIS), the Academy would play the roles of enhanced advisory function and promotion and coordination of international collaboration in S&T focusing on R&D, human resource development, and knowledge acquisition and utilization.

National Seminar on Agroforestry

A National Seminar on agroforestry themed "NAP3 – Getting Agroforestry Moving" was organized by the Ministry of Agriculture, Ministry of Primary Industry and the Academy of Sciences Malaysia from 24 – 26 April 2001. The objectives of the Seminar were to: examine examples and methodologies in agroforestry; examine incentives and enabling factors for agroforestry and draft and recommend strategy and action plan for agroforestry to the Ministry of Agriculture. The Seminar which was held at Century Mahkota Hotel, Melaka was attended by about 100 participants. The outcome of the Seminar was a draft recommendation on national strategy and plan of action for agroforestry and the final report will be presented to the Right Hon Prime Minister and the Hon Minister of Agriculture.

ASM Discussion Series - 'Transforming Scientists Into Technopreneurs: The Canadian Experience'

Dibawah Siri Perbincangan ASM, Mr Arvind Chatbar, Pengarah, Regional Innovation Centre, National Research Council (NRC) of Canada's Regional Innovation Centre, Ottawa telah menyampaikan syarahan bertajuk 'Transforming Scientists into Technoprenuers: The Canadian Experience'. Seramai lebih kurang 50 tetamu yang terdiri dari saintis, pengurus penyelidikan dan penggubal polisi yang mewakili universiti, institusi penyelidikan dan organisasi professional S&T serta agensi kerajaan menghadiri syarahan tersebut. Sesi perbincangan telah dipengerusikan oleh Ir Dato' Ir Dr Mohamad Zawawi Ismail FASc.

Dalam syarahannya, Encik Arvind menggariskan faktor persekitaran yang mendorong NRC untuk melancarkan inisiatif bagi menjadikan saintis sebagai usahawan. Dalam menyahut cabaran K-ekonomi, Kanada telah menekankan kepentingan komponen S&T sebagai kunci kepada kekayaan dimasa hadapan dan ia juga telah menyediakan peruntukan yang banyak kepada S&T untuk memperbaiki infrastruktur S&T serta meningkatkan aktiviti R&D bagi menjana perkembangan ekonomi.

ASM Discussion Series - "Transforming Scientists into Technopreneurs: The Canadian Experience"

Under the ASM Discussion Series programme, a talk was given by Mr Arvind Chatbar, Director, Regional Innovation Centre, National Research Council (NRC) of Canada's Regional Innovation Centre, Ottawa on "Transforming Scientists into Technoprenuers: The Canadian Experience'. About 50 practicing scientists, research managers and policy makers representing universities, research institutions and S&T based professional organizations and government agencies attended the talk. Ir Dato' Ir Dr Mohamad Zawawi Ismail FASc chaired the session.

In his talk, Mr Arvind outlined the external environment that drove NRC into launching the initiatives to transform their scientists into entrepreneurs. In responding to the challenges of K-Economy, Canada has placed emphasis on the S&T component as key to wealth creation in the future and it also provides generous financial allocation to S&T to improve S&T infrastructure and increase R&D activities to create wealth for economic growth.

Forum "Creativity And Innovation: Laying the Foundation for a Creative Thinking Nation"

Akademi Sains Malaysia telah menganjurkan satu Forum mengenai "Creativity and Innovation: Laying the Foundation for a Creative Thinking Nation"pada 24 Mac 2001. Objektif Forum adalah untuk menyediakan satu landasan bagi perbincangan umum ke arah penggubalan rangka penggalakkan kreativiti dan inovasi di kalangan rakyat Malaysia. Forum dipengerusikan oleh Dato' Dr Ir Mohamad Zawawi Ismail FASc. Tiga penceramah diundang untuk memberikan pandangan mereka iaitu Dr Yew Kam Keong; Mr Sachi Anathan dan Mr Arvind Chatbar.

Seramai 38 orang peserta termasuk Fellow Akademi menghadiri forum tersebut. Dalam ucapan pengenalannya, Pengerusi menekankan tentang kaitan yang wujud diantara kreativiti, inovasi dan pertumbuhan ekonomi. Sementara kreativiti adalah pencetusan idea, inovasi adalah perlaksanaan idea tersebut untuk menghasilkan produk dan perkhidmatan baru. Oleh sebab itu inovasi akan menghasilkan momentum baru dalam menjana kekayaan negara.

Ketiga-tiga penceramah mengupas pelbagai isu dari perspektif masing-masing. Dr Yew bercakap mengenai kreativiti sebagai dorongan dalaman atau motivasi individu kearah mencapai matlamat peribadi. Encik Sachi dari INTAN mengupas isu tersebut dari perspektif majikan dan

Forum on "Creativity and Innovation: Laying the Foundation for a Creative Thinking Nation"

The Academy of Sciences Malaysia organized a Forum on "Creativity and Innovation: Laying the Foundation for a Creative Thinking Nation" on 24 March 2001. The objective of the forum was to provide a platform for public discussion towards the formulation of the national framework to promote creativity and innovation among Malaysians. The forum was chaired by Dato Dr Ir Mohamad Zawawi Ismail FASc. Three speakers - Dr Yew Kam Keong; Mr Sachi Anathan and Mr Arvind Chhatbar - were invited to deliver their thoughts.

A total of 38 participants including Fellows of the Academy attended the Forum. In his introductory remark, the Chairman emphasized on the linkages established between creativity, innovation and economic growth. While creativity is the generation of idea, innovation is the implementation of such idea to produce new products and services. Therefore innovations lead to new momentum in the creation of national wealth.

The three speakers addressed the issues from their respective perspectives. Dr Yew spoke about creativity as an internal drive or motivation of an individual towards achieving a personal goal. Mr Sachi of INTAN addressed the issue from an employer's perspectives and on how employers could motivate their employees to be creative. Mr Arvind,

bagaimana mereka boleh mendorong para pekerja mereka untuk menjadi lebih kreatif. Encik Arvind pula mengaitkan kreativiti dan inovasi kekayaan.

Dalam perbincangan susulan, para peserta berpendapat kreativiti adalah satu komponen yang kritikal dalam proses inovasi. Walaubagaimanapun, kreativiti juga melibatkan melakukan sesuatu yang berbeza dan masyarakat umumnya harus boleh menerima perlakuan aneh atau pelik yang selalunya dipertontonkan oleh individu yand kreatif. Secara amnya, forum ini bersetuju bahawa negara kita perlu mengadakan persekitaran yang sesuai yang membolehkan kreativiti itu berkembang serta menjana potensi inovatif kearah pembangunan negara.

attempted to link creativity and innovation with wealth creation.

In the lively discussion that followed, participants were of the views that creativity was a critical component in the process of innovation. However creativity also involves doing things differently and the society must be able to tolerate eccentric behaviours often portrayed by creative individuals. In general, the forum agreed that the country needed to establish a proper environment to allow creativity to flourish and to harness its innovative potential towards national development.

Bengkel Kewartawanan Sains dan Teknologi Ke 9

Dato' Dr Samsudin Tugiman, Pengarah Eksekutif Akademi Sains Malaysia menghadiri bengkel yang dianjurkan bagi wartawan sains bertempat di Hotel Promenade, Kota Kinabalu, Sabah dari 26-28 Julai 2001. Beliau membentangkan kertas bertajuk "Achieving Excellence in SET – Noble Dream Nobel Prize". Tema bengkel adalah "Sains dan Teknologi Penjana Wawasan Negara". Bengkel tersebut dihadiri oleh seramai dua puluh peserta yang terdiri dari warga media Sabah seperti wartawan, editor serta para pegawai dari bidang penyiaran tempatan. Di antara objektf bengkel tersebut adalah untuk lebih memahami dasar dan polisi sains

9th Workshop for Science and Technology Journalists

Dato' Dr Samsudin Tugiman, Executive Director of Academy of Sciences Malaysia attended the workshop for science journalist, held at Promenade Hotel, Kota Kinabalu, Sabah from 26-28 July 2001. He presented a paper on "Achieving Excellence in SET – Noble Dream Nobel Prize". The theme of the workshop was Generating National vision through Science and Technology. The workshop was attended by about 20 participants from the media in Sabah comprising reporters, editors and officers from the local broadcasting network. Among the objectives of the workshop were to understand the national science policy, increase the ability to evaluate the science and technology resources and

negara, meningkatkan keupayaan untuk menilai sumber dan maklumat sains dan teknologi, memberi pendedahan mengenai bidang sains dan teknologi seperti sejarah, struktur, institusi sains dan sebagainya. Bengkel dimoderasi oleh Prof Madya Dr Ahmad Murad Merican dari UiTM.

information, give exposure on science and technology fields including history, structure and scientific institutions. The workshop was moderated by Prof Madya Dr Ahmad Murad Merican of UiTM.

Aktiviti Di Bawah Tabung Amanah Penyelidikan Sains Perubatan Dr Ranjeet Bhagwan Singh

Di bawah Program Syarahan Memorial Dr Ranjeet Bhagwan Singh, satu syarahan mengenai 'Living with the Killers' telah disampaikan oleh Nobel Laureate Prof Dr Peter Doherty, Pengerusi, Department of Immunology, St. Jude Children Research Hospital, USA pada 21 Ogos 2001. Syarahan Memorial tersebut diadakan di Institut Penyelidikan Perubatan, Kuala Lumpur. Prof Dr Peter Doherty turut menyampaikan satu syarahan umum mengenai 'How to deal with virus Infections' pada 20 Ogos 2001 di Universiti Malaya.

Pada 22 Ogos 2001, Prof Dr Peter Doherty telah menghadiri satu dialog saintifik dengan penyelidik sains perubatan Malaysia di Universiti Putra Malaysia. Satu bengkel teknikal turut dianjurkan di UPM pada 26-30 Ogos 2001 mengenai 'Clinical Applications of Real Time PCR'. Seramai 46 peserta telah menghadiri bengkel tersebut. Dua orang pakar dari USA iaitu Dr Hasnah Hamdan dan Dr Maurice Exner mengendalikan bengkel tersebut.

Prof Dr Doherty menerima cendermata daripada Prof Mashkuri, Timbalan Naib Canselor, UM
Prof Dr Doherty receiving a souvenir from Prof Mashkuri, Deputy Vice Chancellor of UM



Pemenang Geran Penyelidikan Dr Ranjeet Bhagwan Singh 2001 bersama YB Datuk Zainal Dahalan dan lain-lain tetamu jemputan
Winners of Dr Ranjeet Bhagwan Singh Research Grant 2001 with YB Datuk Zainal Dahalan and other dignitiries

Dr Ranjeet Bhagwan Singh Medical Trust Fund Activities

-The Dr Ranjeet Bhagwan Singh Memorial Lecture on "Living with the Killers" was presented by Nobel Laureate Prof Dr Peter Doherty, Chairman, Department of Immunology, St. Jude Children Research Hospital, USA on 21 August 2001. The Memorial Lecture was held at the Institute for Medical Research, Kuala Lumpur. Prof Doherty also presented a public lecture on "How to deal with virus infections" on 20 August 2001 at the University of Malaya.

On 22 August 2001, Prof Doherty was invited to a scientific dialogue with the Malaysian medical science researchers at Universiti Putra Malaysia. A technical workshop was held at Universiti Putra Malaysia on 26-30 August 2001 on "Clinical Applications of Real Time PCR". 46 participants attended the workshop. Two experts from U.S.A - Dr Hasnah Hamdan and Dr Maurice Exner were invited to conduct the workshop.

PROGRAM KESEDARAN SAINS

Program Kesedaran Sains ditubuhkan dengan tujuan untuk meningkatkan kesedaran dan kefahaman tentang peranan penting yang dimainkan oleh sains dan teknologi dalam ekonomi Malaysia dan untuk kesejahteraan sosial dan juga untuk menanam budaya sains dikalangan masyarakat kita. Sepanjang tahun 2001, Akademi telah manganjurkan banyak aktiviti yang menarik terutamanya yang berkaitan dengan pendidikan sains dan matematik.

SEQIP Evaluation Seminar

Satu Seminar untuk menilai SEQIP ataupun Science Education Quality Improvement Project diadakan dari 29-30 Januari 2001 di Asia Pacific Development Centre. Ia dianjurkan oleh Akademi Sains Malaysia dan Pusat Perkembangan Kurikulum, Kementerian Pendidikan Malaysia. Seramai 60 peserta yang terdiri dari guru-guru sekolah rendah, pegawai-pegawai sains, pensyarah maktab perguruan, pegawai dari Kementerian Pendidikan serta Fellow Akademi menghadiri seminar tersebut. Seminar tersebut dikendalikan oleh Dr Otto Hammes, Ketua Pasukan SEQIP dan Konsultan Kementerian Pendidikan dan Kebudayaan, Direktorat Pendidikan Rendah, Jakarta; Drs Husaini Wardi, Ketua Bahagian Perancangan Pendidikan Rendah, Kementerian Pendidikan Indonesia dan Drs Sulistiorini, Pelatih Guru SEQIP.

SCIENCE AWARENESS PROGRAMME

The Science Awareness Programme was developed to increase awareness and understanding of the central role which science and technology play in Malaysia's economic and social well-being and also to develop a scientific culture in the society. In 2001, the Academy has organized many activities especially in the area of science and mathematics education.

SEQIP Evaluation Seminar

A Seminar to evaluate SEQIP or Science Education Quality Improvement Project was held from 29-30 January 2001 at the Asia Pacific Development Centre. It was organized by the Academy and the Curriculum Development Centre, Ministry of Education. 60 participants comprising primary science teachers, science officers, lecturers from teachers training colleges, officials from Ministry of Education and Fellows of the Academy attended the Seminar. The Seminar was conducted by Dr Otto Hammes (Team Leader for and Consultant to Ministry of Education and Culture, Directorate for Primary Education, Jakarta), Drs Husaini Wardi (Head of Planning Division of Primary Education, Ministry of National Education Indonesia) and Drs Sulistiorini (SEQIP Teachers Trainer).

SEQIP was initiated from the Indonesian side and is supported by the

SEQIP dimulakan oleh Indonesia dan disokong oleh kerajaan Jerman sebagai sebahagian dari usahasama pembangunannya. Semua tanggungjawab adalah terletak dibawah Kementerian Pendidikan Nasional Indonesia. Bantuan dari Jerman bagi pembangunan sistem dilaksanakan melalui GTZ dibawah kontrak dengan Kementerian Persekutuan untuk Kerjasama Ekonomi.

Matlamat SEQIP adalah untuk meningkatkan kualiti pengajaran sains di sekolah rendah di Indonesia. Projek ini telah menghasilkan komponennya semasa fasa percubaan dari tahun 1994-1996 dan telah berjaya membuktikan bahawa terdapat peningkatan kualiti yang ketara dalam pengajaran sains. Akademi merasakan bahawa SEQIP adalah satu projek yang boleh diadaptasikan kepada sistem pendidikan di Malaysia.

Seminar tersebut merumuskan bahawa sistem SEQIP didapati baik dan berkesan dalam meningkat kualiti pengajaran dan pembelajaran sains dan boleh diadaptasikan untuk dilaksanakan oleh sistem pendidikan Malaysia. Sistem SEQIP yang komprehensif yang tidak hanya bertumpu kepada kit pengajaran dan pembelajaran tetapi juga termasuk latihan guru dan sistem sokongan adalah faktor utama yang melayakkan ia diberi penilaian positif.

German government as part of its development cooperation. All responsibilies lie with the Ministry of National Education in Jakarta. The German support for development of systems was by the GTZ under contract with the Federal Ministry for Economic Cooperation.

The goal of SEQIP is to improve the quality of science teaching in primary schools in Indonesia. The project had developed its components in the try-out phase 1994-1996 and was able to show that significant quality improvement in science teaching was achieved. The Academy feels that SEQIP is one project which can be adapted to Malaysia's education system.

The Seminar concluded that the SEQIP system was good and effective in improving the quality of science teaching and learning and could be adapted for implementation into Malaysia's education system. The comprehensiveness of the system which does not just focus on the teaching and learning kits but also include teacher training and support system is the primary factor which merits positive evaluation.

Bengkel Cadangan Penubuhan Teachers Institute for Mathematics and Science Malaysia (TIMS)

Satu bengkel bagi membincangkan cadangan penubuhan 'Teachers Institute for Mathematics and Science Malaysia' telah diadakan di Dewan Tuanku Asiah, Pusat Perkembangan Kurikulum. Bengkel tersebut dihadiri oleh seramai lebih kurang 80 guru-guru sains dan matematik sekolah rendah dan menengah serta pensyarah maktab perguruan dari seluruh Malaysia. Ahli-ahli panel bengkel tersebut terdiri dari Academician Dato' Ir Lee Yee Cheong FASc, Dato' Dr Abdul Aziz S.A Kadir FASc dan Dato' Dr Samsudin Tugiman dari Akademi Sains Malaysia serta Encik Ahmad Hozi Abdul Rahman dari Pusat Perkembangan Kurikulum. Bengkel tersebut dimoderasi oleh Encik Zainol Badli Budiman dari Bahagian Sekolah, Kementerian Pendidikan Malaysia. Didalam taklimat beliau, Academician Dato' Ir Lee Yee Cheong FASc memberi penerangan dan latarbelakang cadangan penubuhan TIMS. Didalam perbincangan susulan diantara para guru, pensyarah serta ahli-ahli panel, beberapa cadangan dan unjuran diketengahkan. Diantaranya adalah dicadangkan bagi TIMS untuk (i) mengumpulkan guru-guru, pakar-pakar pendidikan sains dan matematik serta penggubal kurikulum untuk bersama menilai keperluan kurikulum dan (ii) memperbaiki peralatan pengajaran dan pembelajaran seperti pelan mengajar, kertas kerja dan modul untuk menyokong perlaksanaan kurikulum yang berjaya,

Workshop on the Establishment of Teachers Institute for Mathematics and Science Malaysia (TIMS)

A workshop to discuss establishment of Teachers Institute for Mathematics and Science Malaysia (TIMS) was held on 18 October 2001 at Dewan Tuanku Asiah, Curriculum Development Centre. The workshop was attended by about 80 primary and secondary schools science and mathematics teachers and lecturers from teachers colleges from all over Malaysia. The panelists of the workshop were Academician Dato' Ir Lee Yee Cheong FASc, Dato' Dr Abdul Aziz SA Kadir FASc, and Dato' Dr Samsudin Tugiman from the Academy and Mr Ahmad Hozi Abdul Rahman from the Curriculum Development Centre. The workshop was moderated by Mr Zainol Badli Budiman from the Schools Division, Ministry of Education. In his briefing, Academician Dato' Ir Lee deliberated on the proposal to establish a Teachers Institute for Mathematics and Science (TIMS). In the ensuing discussion between the teachers and the panelists, a number of recommendations and proposals were put forward. It was proposed for TIMS to bring together teachers, specialists in science and mathematics education and curriculum developers (i) to examine existing curriculum demands and to work on teaching and learning materials such as lesson plans, work sheets and modules to support successful implementation of the curriculum, and (ii) to coordinate the development of a support system of science and mathematics teachers, teacher educators and administrators to provide in-service training and

mengkoordinat pembentukan satu sistem sokongan bagi guru sains dan matematik, pendidik guru serta pentadbir bagi menyediakan latihan dalam perkhidmatan serta orientasi perubahan kurikulum baru serta bahan. Adalah dicadangkan untuk menubuhkan satu Jawatankuasa Pro-tem yang dianggotai oleh Akademi Sains Malaysia, Kementerian Pendidikan serta universiti untuk melaksanakan penubuhan TIMS. Cadangan penubuhan TIMS serta laporan bengkel dibincangkan selanjutnya semasa Persidangan Antarabangsa Pendidikan Sains dan Matematik Sekolah Rendah dan Menengah 2001.

orientation of new curriculum changes and materials. It was suggested to form a Pro-tem Committee comprising Academy of Sciences Malaysia, Ministry of Education and Universities to initiate the establishment of TIMS. The proposal to establish TIMS and the report of the workshop were further deliberated during the International Conference on Primary and Secondary Schools Science and Mathematics Education 2001.

Membantu Meningkatkan Keupayaan Teknologi Industri Malaysia

Satu daripada komponen penting dalam ekonomi negara yang memerlukan input sains, kejuruteraan dan teknologi adalah sektor industri. Pada tahun 2001, Akademi dengan kerjasama Japan Science and Technology Corporation (JST) menganjurkan dua forum industri peringkat tinggi.

- 'Humanoid Robot PINO : Structure and Control' oleh En Fuminori Yamasaki, Penyelidik dari Kitano Symbiotic System Project, ERATO, JST, 6 Julai 2001
- 'Robotic' panelis: En Hashimoto Shuichi, Denso Corp. Japan; Tuan Hj Yahya Ahmad & En Azhar Ahmad, SIRIM Bhd dan Prof Dr Shamsudin Amin, Universiti Teknologi Malaysia, 31 Julai 2001.

Assisting in Upgrading Technological Capability in Malaysian Industry

One important component in the country's economy which needs strong SET input is the industrial sector. In 2001, the Academy, in collaboration with the Japan Science and Technology Corporation (JST) organized two high level industry fora.

- *Humanoid Robot PINO : Structure and Control by Mr Fuminori Yamasaki, Researcher Kitano Symbiotic System Project, ERATO, JST, 6 July 2001*
- *'Robotic' panelist: Mr Hashimoto Shuichi, Denso Corp. Japan; Tuan Hj Yahya Ahmad & Mr Azhar Ahmad, SIRIM Bhd and Prof Dr Shamsudin Amin, Universiti Teknologi Malaysia, 31 July 2001*

PROGRAM ANTARABANGSA

Fokus Program Antarabangsa Akademi adalah pada kerjasama dengan negara-negara ASEAN, Asia, Commonwealth dan Islam. Pada tahun 2001, Akademi bergiat aktif di peringkat regional dan global. Akademi menghadiri banyak mesyuarat dan persidangan antarabangsa. Ia juga menganjurkan satu Persidangan Antarabangsa mengenai pendidikan. Akademi juga menghantar delegasi ke Egypt dan pada masa yang sama berpeluang menjadi hos kepada ramai pelawat penting disepanjang tahun.

International Conference on Primary and Secondary Schools Science and Mathematics Education 2001

Satu Persidangan Antarabangsa Sains dan Matematik Rendah dan Menengah 2001 telah dilaksanakan dengan jayanya pada 22-24 Oktober 2001 di Sunway Pyramid Convention Centre. Persidangan ini dianjurkan oleh Akademi Sains Malaysia, Kementerian Pendidikan Malaysia dan International Council for Science (ICSU) dengan kerjasama Inter Academy Panel of World Science Academies (IAP) dan Kementerian Sains, Teknologi dan Alam Sekitar Malaysia.

Tema Persidangan adalah "Science and Mathematics Education: Responding to the Challenges of K-Economy". Seramai lebih kurang 350 peserta yang terdiri dari guru-guru sains dan matematik, para akademik,

INTERNATIONAL PROGRAMME

The Academy's International Programme focuses on collaboration with ASEAN, Asia, Commonwealth and Islamic countries. In 2001, the Academy has been very active at the regional and global levels. It has been actively involved in many international meetings and conferences. It also organized an International Conference on Education. This year the Academy sent its delegation to Egypt, and was privileged to host many important international visitors throughout the year.

International Conference on Primary and Secondary Schools Science and Mathematics Education 2001

The International Conference on "Primary and Secondary Schools Science and Mathematics Education 2001" was successfully held on 22-24 October 2001 at Sunway Pyramid Convention Centre. The conference was organized by the Academy of Sciences Malaysia, Ministry of Education and International Council for Science (ICSU) in collaboration with the Inter Academy Panel of World Science Academies (IAP) and Ministry of Science, Technology and the Environment, Malaysia.

The theme of the conference was "Science and Mathematics Education: Responding to the Challenges of K-Economy". About 350 science and mathematics teachers and educators,

saintis, ahli matematik dan pegawai-pegawai kerajaan menghadiri persidangan ini. Sebanyak 34 kertas kerja dibentangkan di sesi plenari dan 'parallel'. Di antara penceramah antarabangsa yang hadir adalah dari USA, UK, Thailand, Singapura, Indonesia. Di antara objektif persidangan adalah untuk mengumpulkan 'best-brains' dalam bidang sains dan matematik untuk berkongsi pengalaman dan mempelajari kaedah-kaedah pengajaran dan pembelajaran yang diamalkan negara-negara lain. Persidangan ini juga menjadi satu landasan kepada warga pendidik sains dan matematik untuk bertemu dan bertukar-tukar pendapat dan idea serta menggalakkan rangkaian kerja dalam bidang pendidikan sains dan matematik.

Di majlis pembukaan persidangan tersebut, Pengerusi Jawatankuasa Persidangan, Academician Dato' Ir Lee Yee Cheong FASc menyampaikan ucapan alu-aluan dan pembukaan persidangan. Persidangan ini dirasmikan oleh YB Menteri Pendidikan Malaysia, Tan Sri Dato' Seri Hj Musa Mohamed yang juga turut menyampaikan ucaputama di persidangan tersebut.Persidangan ini bersetuju bahawa perlunya satu sistem pengajaran dan pembelajaran sains dan matematik yang inovatif dilaksanakan di sekolah rendah dan menengah. Persidangan ini juga mencadangkan penubuhan Teachers Institute for Mathematics and Science Malaysia (TIMS) sebagai satu landasan bagi guru sains dan matematik, warga pendidik dan para saintis untuk

scientists, mathematicians and government officials attended the conference. 34 papers were presented during the Conference at the plenary and parallel sessions. The international speakers were from USA, UK, Thailand, Singapore, and Indonesia. Among the objectives of the conference was to gather the 'best-brain' in Science and Mathematics to share their experiences and to explore the teaching-learning methods adopted by different countries. The conference served as the platform for science teachers and educators to meet and exchange ideas and information and promote networking in the areas of science and mathematics education.

At the opening ceremony of the conference, the Chairman of the organizing Committee, Academician Dato' Ir Lee Yee Cheong presented his welcoming speech and opening address. The conference was launched by the Hon Minister of Education Malaysia, Tan Sri Dato' Seri Haji Musa Mohamed FASc.

The Conference agreed unanimously that there was an urgent need for an innovative teaching and learning in science and mathematics to be implemented in both primary and secondary schools. The Conference also agreed with the proposal to establish a Teachers Institute for Mathematics and Science Malaysia (TIMS) as a platform for science and mathematics teachers, educators and concerned scientists to exchange ideas and experiences; best practice and benchmark their performance. It further agreed to

bertukar idea dan pengalaman, kaedah terbaik serta menilai prestasi mereka. Juag dipersetujui untuk mengadakan satu rangkaian kerja serantau dikalangan semua guru sains dan matematik, warga pendidik dan saintis bagi menggalakkan kerjasama serantau dan antarabangsa dalam konteks globalisasi dan demokrasi pendidikan. Diakhir persidangan, para peserta menerima Deklarasi Kuala Lumpur 2001.

Satu Pertandingan dan Pameran Sains dan Matematik turut diadakan serentak dengan persidangan antarabangsa tersebut. Pertandingan itu dibuka kepada guru-guru sains dan matematik yang telah menghasilkan alatan pengajaran dan pembelajaran yang inovatif bagi membantu mereka di sekolah. Petronas dan Japan Science and Technology Corporation telah menaja hadiah pertandingan. Sebanyak 4 kategori telah dipertandingkan iaitu Matematik Rendah dan Menengah, Sains Rendah dan Menengah. Para pemenang pertandingan adalah seperti berikut:

establish a regional network among science and mathematics teachers, educators and scientists to promote collaboration within the region and with other regional and international networks in the light of the globalization and democratization of education. At the end of the Conference, the participants adopted the Kuala Lumpur Declaration 2001.

A National Science and Mathematics Exhibition and Competition were also organized in conjunction with the Conference. The competition was opened to science and mathematics teachers who had developed innovative educational kits to augment their teaching of science and mathematics in school. Petronas and Japan Science and Technology Corporation sponsored the prizes of the competition. There were 4 categories of the Competition Primary Science, Secondary Science, Primary Mathematics and Secondary Mathematics. The winners of the competition were:



Pemenang pertandingan menerima hadiah dari YB Dato' Seri Law Hieng Ding
The winners receiving their prizes from YB Dato' Seri Law Hieng Ding

1) Sains Rendah
Tempat Pertama:
Balkisnah Shaharudin &
Siew Sek Har
MP Tengku Ampuan Afzan,
Kuantan, Pahang
Tempat Kedua:
Kamarudin bin Saari
SK Belukar, Machang, Kelantan

Tempat Ketiga:
Munah Ibrahim, Normah Ali,
Rosnani Ghazali, Asmah Mahmud
& Noraida Mustafa
SK Seri Biram, Pekan, Pahang

2) Sains Menengah
Tempat Pertama:
Nor Azian Mohd Darus &
Samudin Kassan
IPDA, Jitra, Kedah

Tempat Kedua:
Tan Mun Wai
MP Teknik, Kuala Lumpur

Tempat Ketiga:
Lee Mei Leng
SMK(P) Sri Aman, Petaling Jaya

(3) Matematik Rendah
Tempat Pertama:
Ng Sen Hong
SK St John, Bau, Sarawak

Tempat Kedua:
Redzuan bin Radzi, Hjh Aisah
Daon, Fatimah Rozihan Wan
Muhamad, Mazni Sulaiman &
Hjh Jamaliah Hashim
MP Raja Melewar, Seremban,
Negeri Sembilan

Tempat Ketiga:
Khadijah Noordin
SK Sentul (1), Kuala Lumpur

(1) Primary Science
1st Prize:
Balkisnah Shaharudin &
Siew Sek Har
MP Tengku Ampuan Afzan,
Kuantan, Pahang
2nd Prize:
Kamarudin bin Saari
SK Belukar, Machang, Kelantan

3rd Prize:
Munah Ibrahim, Normah Ali,
Rosnani Ghazali, Asmah Mahmud
& Noraida Mustafa
SK Seri Biram, Pekan, Pahang

(2) Secondary Science
1st Prize:
Nor Azian Mohd Darus &
Samudin Kassan
IPDA, Jitra, Kedah

2nd Prize:
Tan Mun Wai
MP Teknik, Kuala Lumpur

3rd Prize:
Lee Mei Leng
SMK(P) Sri Aman, Petaling Jaya

(3) Primary Mathematics
1st Prize
Ng Sen Hong
SK St John, Bau, Sarawak

2nd Prize:
Redzuan bin Radzi, Hjh Aisah
Daon, Fatimah Rozihan Wan
Muhamad, Mazni Sulaiman & Hjh
Jamaliah Hashim
MP Raja Melewar, Seremban,
Negeri Sembilan

3rd Prize:
Khadijah Noordin
SK Sentul (1), Kuala Lumpur

(4) MATEMATIK MENENGAH

Tempat Pertama:
Chin Mei Moi
SMK Alor Akar, Kuantan, Pahang

Tempat Kedua:
Tan Chung Yong & Liew Kok Lam
SMK St Thomas, Kuching, Sarawak

Tempat Ketiga:
Wong Teck Sing
SMK Beserah, Kuantan, Pahang

Hadiah Utama dikongsi bersama oleh Nor Azian Mohd Darus dan Ng Sen Hong.

Hadiah adalah seperti berikut:

Hadiah Utama	– RM10,000
Tempat Pertama	– RM5,000 dan lawatan sambil belajar ke Jepun
Tempat Kedua	– RM3,000
Tempat Ketiga	– RM2,000

Penyampaian hadiah disempurnakan semasa Majlis Makan Malam ICPSME 2001 yang dianjurkan bersekali dengan Majlis Makan Malam Tahunan ASM.Majlis

Penutup persidangan disempurnakan oleh YB Dato' Zainal Hj Dahalan, Timbalan Menteri Sains, Teknologi dan Alam Sekitar.

(4)SECONDARY MATHEMATICS

1st Prize:
Chin Mei Moi
SMK Alor Akar, Kuantan, Pahang

2nd Prize:
Tan Chung Yong & Liew Kok Lam
SMK St Thomas, Kuching, Sarawak

3rd Prize:
Wong Teck Sing
SMK Beserah, Kuantan, Pahang

The grand prizewinners went to Nor Azian Mohd Darus and Ng Sen Hong.

The prizes for the competition were:

Grand Prize	*– RM10,000*
1st Prize	*– RM5,000 and a study trip to Japan*
2nd Prize	*– RM3,000*
3rd Prize	*– RM2,000*

The prize presentation was held at the ICPSME 2001 Dinner, which was arranged back to back with the ASM Annual Dinner 2001.

The closing address of the conference was presented by Hon Dato' Zainal Hj Dahalan, Deputy Minister of Science, Technology and the environment.

Lawatan Delegasi Chinese Academy of Science Delegation

Satu delegasi seramai lapan orang dari Chinese Academy of Science (CAS) yang diketuai oleh Presiden, Prof Lu Yongxiang telah melawat Malaysia dari 14–20 Januari 2001. Lawatan ini dihoskan oleh Akademi Sains Malaysia. Objektif utama lawatan adalah untuk meninjau perkembangan dan pembangunan P&P, sains, kejuruteraan dan teknologi di Malaysia, mengadakan perbincangan dengan institusi P&P/universiti di Malaysia serta mengenalpasti dan mencadangkan projek usahasama P&P yang bersesuaian di antara saintis Malaysia dan saintis CAS. Delegasi telah melawat sembilan institusi penyelidikan dan universiti di Malaysia. Diakhir lawatan kedua-dua Akademi bersetuju bahawa P&P dalam bidang penyelidikan asas untuk menjana pengetahuan harus menjadi bidang fokus usahasama.

Delegasi juga melawat Akademi Sains Malaysia dimana Presiden CAS, H.E Prof Lu Yongxiang telah

Visit of the Chinese Academy of Science Delegation

An eight-member delegation from the Chinese Academy of Science (CAS) led by its President, Prof Lu Yongxiang visited Malaysia from 14–20 January 2001. The visit was hosted by the Academy of Sciences Malaysia. The main objectives of the visit were to (i) study the progress and development of R&D in science, engineering and technology in Malaysia, (ii) hold discussions with selected R&D institutions/universities in Malaysia and identify, and (iii) recommend appropriate collaborative R&D projects between Malaysian scientists and scientists from CAS. The delegation visited nine research institutions and universities in Malaysia. At the end of the visit both Academies agreed that R&D in basic research for knowledge generation should be the focus area of collaboration.

The delegation also visited the Academy of Sciences Malaysia and the President of CAS, His Excellency Prof Lu Yongxiang presented a talk on



Delegasi dari Chinese Academy of Science
Delegations from the Chinese Academy of Science

menyampaikan syarahan mengenai 'Strenghthening Cooperation – Promoting Science Prosperity' kepada seramai lebih kurang 30 orang tetamu. Dr Mustaza Ahmadun, Pengarah S&T, Kementerian Sains, Teknologi dan Alam Sekitar turut memberi penerangan mengenai perkembangan dan pembangunan S&T di Malaysia.

"Strenghthening Cooperation – Promoting Science Prosperity" to an audience of about 30 people. Dr Mustaza Ahmadun, Director of S&T, Ministry of Science, Technology and the Environment also gave a briefing on the progress and development of S&T in Malaysia.

IAP Workshop: Capacity Building for Academies in Africa

Akademi Sains Malaysia telah dijemput oleh Inter-Academy Panel (IAP) untuk berkongsi pengalaman penubuhan Akademi di IAP Workshop on Capacity Building di Afrika pada 16-18 Mei 2001 di Trieste, Itali. Academician Dato' Ir Lee Yee Cheong FASc, Naib Presiden Akademi Sains Malaysia mewakili Akademi di bengkel tersebut. Dalam pembentangan beliau, Academician Dato' Ir Lee Yee Cheong memberi penerangan ringkas kepada peserta bengkel mengenai penubuhan dan pengurusan Akademi selama enam tahun. Beliau juga turut menekankan kepentingan mengekalkan hubungan baik dengan Kerajaan sebagai salah satu sebab utama Akademi Sains Malaysia berjaya menyumbang untuk komuniti SET di Malaysia. Bantuan kewangan dari Kerajaan melalui satu dana penubuhan berjumlah RM12.4 juta telah diuruskan dengan cermat oleh Akademi untuk memastikan sumber kewangan yang berterusan bagi melaksanakan program-programnya.

Secara keseluruhan rakan sejawat dari Afrika kagum dengan model

IAP Workshop: Capacity Building for Academies in Africa

The Academy of Sciences Malaysia was invited by Inter-Academy Panel (IAP) to present the Academy's experience in establishing Academy of Sciences Malaysia at the IAP Workshop on Capacity Building for Academies in Africa from 16–18 May 2001 at Trieste, Italy. Academician Dato' Ir. Lee Yee Cheong FASc, Vice-President, Academy of Sciences Malaysia represented the Academy at the Workshop. In his presentation, Academician Dato' Ir Lee alluded the Academy's six years in existence. Academician Dato' Ir Lee highlighted the importance of maintaining a good rapport with the Government as one of the main reason Academy of Sciences Malaysia is so successful in serving the SET community in Malaysia. The Government's strong financial support through a one-time launching grant of RM 12.4 million was managed prudently by the Academy to ensure a continuous financial resource to implement the many programmes.

In sum the African counterparts were impressed with Academy of Sciences Malaysia's model of establishment and

penubuhan Akademi Sains Malaysia dan berhasrat untuk memajukan cadangan kepada kerajaan masing-masing untuk menubuhkan satu Akademi mengikut model yang serupa.

would like to propose to their respective governments to consider establishing an Academy along similar model.

The Second Malaysian Scientific Research Expedition to Antarctica: The Voyage to Antarctica

Ekspedisi Penyelidikan Saintifik Kedua Malaysia ke Antartika telah berjaya dilaksanakan dengan dua orang saintis iaitu Dr Selvaraj Oyyan dan Dr Chu Wan Loy mengikuti pelayaran ke Antartika dengan kapal Australian Antarctic Division – Polar Bird. Ekspedisi ini menandakan usahasama pertama dengan Australian Antractic Division.

Sebagai usaha untuk berkongsi pengalaman, dua saintis dan Dr Azizan Abu Samah dijemput ke 'Sesi-Bertemu-Saintis' di Pusat Sains Negara, Bukit Kiara pada 17, 26 – 28 Mac 2001. Sesi ini telah dihadiri oleh lebih 450 pelajar sekolah menengah

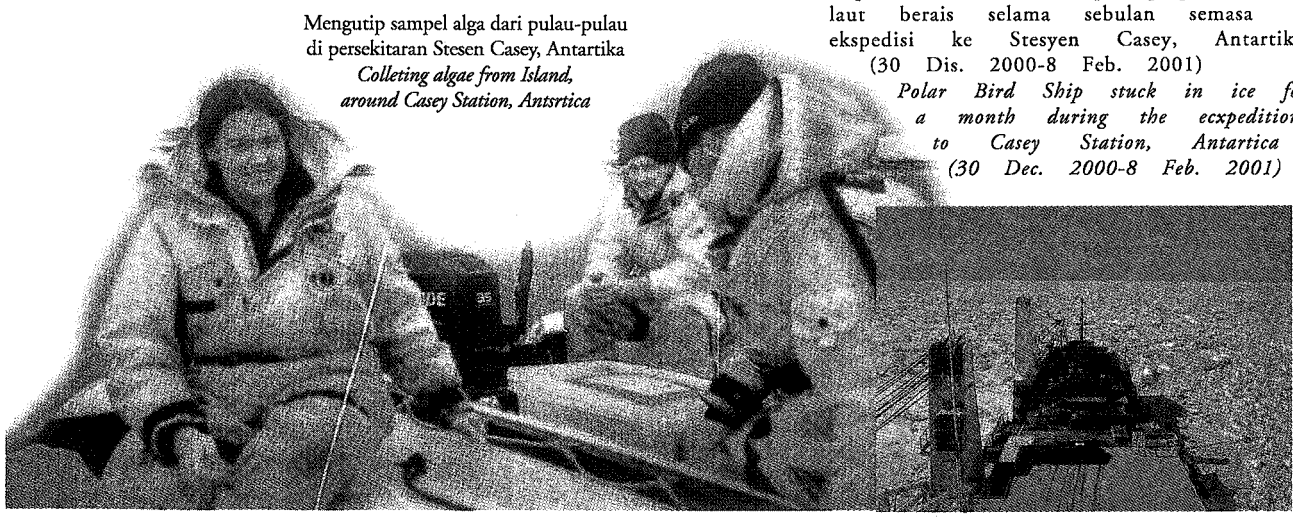
The Second Malaysian Scientific Research Expedition to Antarctica: The Voyage to Antarctica

The second Malaysian Scientific Research Expedition to Antarctica was successfully concluded with two scientists Dr Selvaraj Oyyan and Dr Chu Wan Loy, going on a voyage to Antarctica on board the Australian Antarctic Division's vessel – Polar Bird. This expedition marked our first collaborative effort with the Australian Antarctic Division.

As an effort to share this unique experience, the two scientists and Dr Azizan Abu Samah were invited to a 'meet-the-scientists-session' at the National Science Centre, Bukit Kiara on 17, 26–28 March 2001. The session was well attended by over 450 secondary schools students from over 12 schools. The session was officiated by YB Dato'

Kapal Polar Bird terperangkap dalam laut berais selama sebulan semasa ekspedisi ke Stesyen Casey, Antartika (30 Dis. 2000-8 Feb. 2001)
Polar Bird Ship stuck in ice for a month during the ecxpedition to Casey Station, Antartica (30 Dec. 2000-8 Feb. 2001)

Mengutip sampel alga dari pulau-pulau di persekitaran Stesen Casey, Antartika
Colleting algae from Island, around Casey Station, Antsrtica



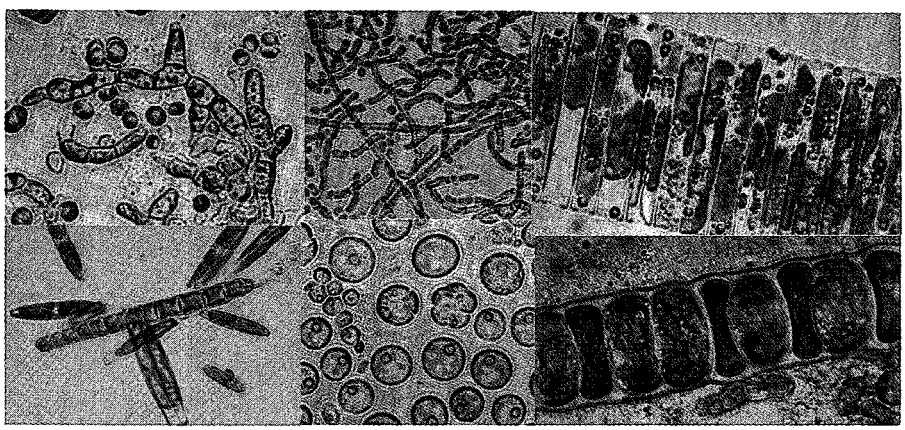
dari 12 buah bah sekolah. Sesi dilancarkan oleh YB Dato' Zainal Dahalan, Timbalan Menteri Sains, Teknologi dan Alam Sekitar. Dalam ucapannya, YB Dato' Zainal menekankan komitmen KSTAS menyokong Program Penyelidikan Saintifik Antartika oleh Malaysia. Beliau mengalu-alukan inisiatif yang diambil oleh Akademi Sains Malaysia dan menghargai dedikasi yang ditunjukkan oleh para saintis.

YB Dato' Zainal Dahalan dan para pengunjung disajikan dengan persembahan video selama 20 minit mengenai ekspedisi ke Antartika. Video ini adalah produksi kedua oleh Malaysian Antarctica Research Programe yang dihasilkan untuk memberi kesedaran kepada orang ramai. Dato' Dr Salleh Mohd Nor FASc telah mempengerusikan satu sesi yang menarik bersama para pelajar pada 27 Mac 2001. Kebanyakan pelajar amat tertarik dengan pembentangan oleh Dr Azizan, Dr Selvaraj dan Dr Chu. Mereka juga amat tertarik untuk melihat sampel alga dan bakteria dari Antartika.

Zainal Dahalan, Deputy Minister, Ministry of Science, Technology and the Environment. In his speech, YB Dato' Zainal reiterated the commitment from MOSTE to support the Malaysian Antarctic Scientific Research Programme. He applauded the initiative taken by Academy of Sciences Malaysia and admired the dedication portrayed by the scientists.

YB Dato' Zainal and the rest of the audience were treated to a 20 minutes video presentation of the various footages taken during the voyage to Antarctica. This video is the second production by the Malaysian Antarctica Research Programme designed for public awareness programme.

Dato' Dr Salleh Mohd Nor FASc chaired a lively presentation session with the students on 27 March 2001. Many of the students were overwhelmed by the presentation from Dr Azizan, Dr Selvaraj and Dr Chu. They were also very interested to view the algae and bacteria samples collected from Antarctica.



Mikroalga-mikroalga di atas adalah dari Antartika dan telah berjaya dikulturkan di Makmal Alga, Universiti Malaya. Kajian terhadap struktur dan pertumbuhan serta penghasilan kimia halus seperti asid lemak, karotenoid, bahan penyerap UV dan enzim sedang dilakukan
Micro algae colected from Antarctica that was sucessfully cultured in the laboratory at Universiti Malaya.

1st SCA Conference di Bangkok

Persidangan pertama Science Council of Asia diadakan di Sofitel Central Hotel, Bangkok, Thailand dari 9-11 Mei 2001. Sejumlah 37 peserta mewakili 17 akademi, organisasi dan institusi kebangsaan dari 10 negara menghadiri persidangan tersebut.

Akademi Sains Malaysia diwakili oleh Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc, Encik Fateh Chand, Prof Dr Mohd Nordin Hj Hassan dan Encik Zahir Ismail. Perwakilan Malaysia yang lain termasuk Datuk Dr Soon Ting Kueh yang mewakili FASAS dan Encik Ahmad Hezri dari LESTARI, UKM. Tema persidangan adalah 'Urgent Agenda for Asian Sustainability through Science and Technology'. Persidangan ini adalah penting bagi Malaysia dan Akademi Sains Malaysia kerana Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc akan menjawat jawatan Presiden Science Council of Asia bagi tempoh setahun berakhir Mei 2002 dan dengan Malaysia yang akan menjadi hos Science Council of Asia Conference yang kedua di Kuala Lumpur.

1st SCA Conference in Bangkok

The 1st Conference of the Science Council of Asia was held in Sofitel Central Hotel, Bangkok, Thailand from the 9-11 May 2001. A total of 37 delegates representing 17 academies, national organizations and institutions from 10 countries attended the Conference.

Academy of Sciences Malaysia was represented by Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc, En Fateh Chand, Prof Dr Mohd Nordin Hj Hassan and En Zahir Ismail. Other members of the Malaysian delegation were Datuk Dr Soon Ting Kueh representing FASAS and En Ahmad Hezri from LESTARI, UKM. The main theme of the Conference was "Urgent Agenda for Asian Sustainability through Science and Technology". This Conference was very significant for Malaysia and Academy of Sciences Malaysia as Academician Tan Sri Datuk Dr Omar assumed the presidency of Science Council of Asia for a one year term ending in May 2002 with Malaysia hosting the 2nd Science Council of Asia Conference in Kuala Lumpur.



Persidangan Pertama Science Council of Asia di Bangkok
First Science Council of Asia Conference in Bangkok

Academician Tan Sri Datuk Dr Omar Abdul Rahman membentangkan kertaskerja bertajuk "Sustainable Development: A Vision for Asia". Dalam pembentangan beliau, Academician Tan Sri Omar menyarankan kepada semua ahli SCA untuk menerima satu wawasan yang sama bagi pembangunan mampan dan menjadikan ia fokus bagi program kerja SCA untuk tiga tahun hadapan.

Prof Dr Mohd Nordin Hassan membentangkan kertas kerja mengenai infusi secara berperingkat tentang keprihatinan alam sekitar dan seterusnya konsep pembangunan mampan dalam pelan pembangunan negara.

Diakhir persidangan, perwakilan meluluskan dan menerima wawasan bagi 'Sustainable Asia: Towards a Prosperous, Harmonious and Greener Asia'. Juga disokong cadangan Malaysia bagi SCA untuk menumpukan kepada Pembangunan Mampan bagi tiga tahun hadapan dan Malaysia akan menerajui projek 'cross-country' mengenai pembangunan mampan sementara Thailand akan menerajui kajian serantau mengenai "Sustainable Indicator".

Academician Tan Sri Omar didalam ucapan penerimaan beliau sebagai Presiden SCA menyarankan agar semua ahli menyumbang dan mengambil bahagian secara aktif bagi merealisasikan program kerja SCA mengenai Pembangunan Mampan dan beliau juga berharap untuk bertemu semua delegasi di Kuala Lumpur bagi Persidangan SCA yang kedua pada bulan Mei 2002.

Academician Tan Sri Datuk Dr Omar presented a special lecture on "Sustainable Development: A Vision for Asia". The lecture is an extension of a similar presentation at the Inter-Academy Panel Conference on Transition towards Sustainability in Tokyo, Japan in May 2000. In his presentation, Academician Tan Sri Omar called for all members of SCA to adopt a common vision on sustainable development and make it a focus of the Science Council of Asia's work programme for the next three years.

Prof Dr Mohd Nordin Hassan presented a country paper outlining the gradual infusion of environmental concern and eventually the concept of sustainable development in the national development plan.

At the end of the Conference, the General Assembly endorsed the vision for a sustainable Asia: Towards a Prosperous, Harmonious and Greener Asia. The Assembly also endorsed Malaysia's proposal for Science Council of Asia to focus on Sustainable Development for the next three years and that Malaysia will anchor a cross-country project on Sustainable Science while Thailand will anchor the regional study on Sustainable Indicator.

Academician Tan Sri Omar in his acceptance speech as President of Science Council of Asia called on all members to contribute and participate actively in realising the Science Council of Asia's work programme on Sustainable Development and that he looked forward to welcoming all delegates to Kuala Lumpur for the 2nd Science Council of Asia Conference in May 2002.

Perjanjian Persefahaman Di Antara ASM dan Berlin-Branderburg Academy of Sciences and Humanities

Pada 13 November 2001, Akademi Sains Malaysia dan Berlin-Branderburg Academy of Sciences and Humanities telah menandatangani satu Perjanjian Persefahaman. Majlis telah diadakan di Hotel Nikko, Kuala Lumpur.

Berlin-Branderburg Academy of Sciences and Humanities, yang dahulunya dikenali sebagai Prussian Academy of Sciences and Humanities, Berlin, Federal Republic of Germany serta Akademi Sains Malaysia telah mengenalpasti faedah yang diperolehi bersama melalui pertukaran teknologi di antara German dan Malaysia.

Melalui MOU ini, kedua belah pihak akan melaksanakan program kerjasama di antara pakar-pakar dalam bidang sains, kejuruteraan dan teknologi dalam lingkungan keupayaan bersama, tertakluk kepada undang-undang dan peraturan serta kekakangan kewangan kedua belah pihak. Bentuk kerjasama termasuk penyelidikan, lawatan sambil belajar, bengkel, persidangan dan symposium dan sebagainya.MOU tersebut ditandangani oleh Presiden ASM, Tan Sri Datuk Dr Ahmad Zaharudin Idrus FASc dan Presiden Berlin-Branderburg Academy of Sciences and Humanities dengan disaksikan oleh Duta German ke Malaysia, Ahli Majlis ASM dan Naib Canselor Universiti Malaya, Universiti Putra Malaysia dan Universiti Kebangsaan Malaysia.

MOU Between ASM and Berlin-Branderburg Academy of Sciences and Humanities

On 13th November 2001, the Academy of Sciences Malaysia and Berlin-Branderburg Academy of Sciences and Humanities signed a Memorandum of Understanding at Nikko Hotel, Kuala Lumpur.

The Berlin-Branderburg Academy of Sciences and Humanities, formerly Prussian Academy of Sciences and Humanities, Berlin, Federal Republic of Germany, and the Academy of Sciences Malaysia recognize the mutual benefit of scientific, engineering and technological interchange between Germany and Malaysia.

Through this MOU, both parties will facilitate cooperation between specialists in the scientific, engineering and technological disciplines within the mutual competence, subject to the laws and regulations and financial limitations of each party. The forms of cooperation may include collaborative research, study visits, exploratory missions, joint workshops, conferences and symposia, designation of programs' officers and others.

The MOU was signed by the President of ASM, Tan Sri Datuk Dr Ahmad Zaharudin Idrus FASc and the President of the Berlin-Branderburg Academy of Sciences and Humanities in the presence of the German Ambassador to Malaysia, ASM Council Members and the Vice Chancellors of Universiti Malaya, Universiti Putra Malaysia and Universiti Kebangsaan Malaysia.



Tan Sri Datuk Dr Ahmad Zaharudin Idrus FASc, Presiden ASM dan Mr Lu Youmei, Presiden China Yangtze Three Gorges Project Development Corporation, sedang menandatangi Perjanjian Persefahaman
The signing of MOU between the President of ASM, Tan Sri Datuk Dr Ahmad Zaharudin Idrus FASc and the President of China Yangtze Three Gorges Project Development Corporation, Mr Lu Youmei

MOU di Antara Akademi Sains Malaysia dan China Yangtze Three Gorges Development Project Corporation (CTGPC)

Sebagai susulan kepada lawatan delegasi yang diketuai oleh ASM ke China Three Gorges Project Corporation (CTGPC) dan perbincangan semasa lawatan delegasi CTGPC ke Kuala Lumpur pada tahun 2000, ASM dan CTGPC telah menandatangani satu Perjanjian Persefahaman pada 29 September 2001 bagi menggalakkan dan melaksanakan aktiviti-aktiviti yang telah dipersetujui bersama. ASM diwakili oleh Presidennya, Tan Sri Datuk Dr Ahmad Zaharudin Idrus FASc dan CTGPC juga oleh Presidennya iaitu Mr Lu Youmei. Melalui MOU ini, kedua belah pihak bersetuju untuk melaksanakan program pertukaran para jurutera dan saintis diantara Three Gorges Development Project dan Malaysia pada tahun 2002.

MOU Between Academy of Sciences Malaysia (ASM) and China Yangtze Three Gorges Project Development Corporation (CTGPC)

As a result of the visit of ASM led delegation to China Three Gorges Project Corporation (CTGPC) and the discussion during the visit of the CTGPC delegation to Kuala Lumpur in 2000, ASM and CTGPC signed an MOU to promote and implement mutually agreed collaborative activities on 29 September 2001. ASM was represented by its President, Tan Sri Datuk Dr Ahmad Zaharudin Idrus FASc and CTGPC by its President, Mr Lu Youmei. Through this MOU, both parties agreed to implement the exchange programme between engineers and scientists of Three Gorges Development Project and Malaysia in 2002.

Seminar Sustainable Development: A Blue Print for A Greener ASIA

Akademi Sains Malaysia menganjurkan satu seminar mengenai 'Sustainable Development: A Blue Print for a Greener Asia' pada on 13- 14 Februari 2001. Ia dihadiri seramai lebihkurang 50 peserta. Presiden Science Council of Asia, Prof Dr Montri Chulavatnatol dari Thailand dan Prof Dr Ohtaki dari Science Council of Japan turut menghadiri seminar tersebut. Objektif utama seminar adalah untuk membincangkan dan memberi input kepada kertas kerja mengenai 'Sustainable Development: A Blue Print for a Prosperous and Greener Asia' yang akan dibentangkan oleh Academician Tan Sri Datuk Dr Omar Abdul Rahman di '1st SCA Conference and Meeting' yang diadakan dari 8 – 12 Mei 2001 di Bangkok, Thailand. Sebanyak tujuh kertas kerja telah dibentangkan oleh penceramah terkemuka semasa persidangan tersebut.

Sustainable Development Seminar: A Blue Print for a Greener Asia

The Academy organized a seminar on Sustainable Development: A Blue Print for a Greener Asia on 13-14 February 2001. It was attended by about 50 invited participants. The President of the Science Council of Asia, Prof Dr Montri Chulavatnatol from Thailand and Prof Dr Ohtaki from the Science Council of Japan also attended the seminar. The main objective of the seminar was to discuss and provide input into the paper on Sustainable Development: A Blue Print for a Prosperous and Greener Asia which would be presented by Academician Tan Sri Datuk Dr Omar Abdul Rahman at the 1st SCA Conference and Meeting from 8–12 May 2001 in Bangkok, Thailand. Seven papers were presented by eminent speakers during the seminar.

Persidangan Dunia Mengenai S&T on 'Harnessing Science and Technology to Meet with the Globalization Challenge'

Dato' Dr Ariffin Aton FASc telah menghadiri 'World Conference on S&T' yang diadakan di Manila, Filipina dari 13-15 September 2001. Persidangan telah dianjurkan oleh Philippine Association for the Advancement of Science (PhilAAS). Persidangan yang bertemakan 'Harnessing Science and Technology to Meet the Globalization Challenge' itu bertumpu kepada peranan yang

World Conference on S&T - 'Harnessing Science and Technology to Meet wtih the Globalization Challenge'

Dato' Dr Ariffin Aton FASc attended the World Conference on S&T which was held in Manila, Philippines from 13-15 September 2001. The conference was organized by the Philippine Association for the Advancement of Science (PhilAAS). The Conference with the theme "Harnessing Science and Technology to Meet the Globalization Challenge" focused on the role of science and technology in enabling nations to

dimainka oleh sains dan teknologi dalam menentukan keupayaan sesebuah negara menghadapi cabaran globalisasi. Persidangan ini mengumpulkan pakar-pakar sains dan teknologi dari seluruh pelusuk dunia bagi membincangkan pilihan yang ditawarkan oleh pelbagai bidang S&T dalam menangani cabaran globalisasi.

respond to the challenges posed by the globalization movement. It brought together science and technology experts from different parts of the world to discuss the options offered by the various fields in S&T for answering the globalization challenge.

United Nation Commission for Sustainable Development-9 (UNCSD-9) Multi-Stakeholders Dialogue

Academician Dato' Ir Lee Yee Cheong FASc, ketika itu Setiausaha Agung Akademi Sains Malaysia dan Naib Presiden, World Federation of Engineering Organizations (WFEO) telah menghadiri UNCSD-9 Multi-Stakeholders Dialogue yang diadakan di United Nations, New York dari 16 – 18 April 2001. CSD adalah satu badan dibawah UN yang terdiri dari 50 ahli. Ia merupakan fokus utama bagi tindakan susulan antarabangsa kepada UN Commission on Environment and Development (UNCED) serta Rio Earth Summit 1992. Dialog dihadiri oleh perwakilan Komuniti Sains dan Teknologi, diketuai oleh International Council for Science (ICSU) dan World Conservation Union (IUCN). WFEO dijemput oleh ICSU untuk mengambil bahagian sebagai sebahagian dari delegasi kerana topik yang dibincangkan adalah mengenai tenaga dan pengangkutan yang memerlukan input daripada para jurutera untuk membentangkan pandangan dari segi teknologi. Persiapan bagi Earth Summit turut dilaksanakan semasa dialog tersebut.

United Nation Commission for Sustainable Development-9 (UNCSD-9) Multi-Stakeholders Dialogue

Academician Dato' Ir Lee Yee Cheong FASc, then Secretary General, Academy of Sciences Malaysia and Vice President of World Federation of Engineering Organizations (WFEO) attended the UNCSD-9 Multi-Stakeholders Dialogue held at the UN, New York from 16–18 April 2001. CSD is a body of the UN, composed of more than 50 member states. It is the main focus for international follow-up to the UN Commission on Environment and Development (UNCED) and the 1992 Rio Earth Summit. The dialogue was attended by representatives of the Scientific and Technological Communities, led by International Council for Science (ICSU) and the World Conservation Union (IUCN). WFEO was invited by ICSU to participate as part of their delegation as the topics were energy and transport that required the input of engineers to present the technology viewpoint. Preparation for the Earth Summit also got underway during the CSD-9.

Antartika

Dibawah Rancangan Malaysia ke8, peruntukan sebanyak RM5 juta telah diluluskan bagi perlaksanaan Program Penyelidikan Antartika Malaysia. Dato' Dr Salleh Mohd Nor FASc dilantik sebagai Pengerusi 'Task Force' Antartika. 'Task Force' ini telah mengenalpasti Universiti Malaya sebagai agensi utama untuk Program Penyelidikan Antartika Malaysia dan juga Pusat Penyelidikan Antartika Nasional akan ditempatkan di universiti tersebut. Majlis Akademi juga bersetuju untuk Lembaga Minyak Sawit Malaysia (MPOB) menjalankan aktiviti penyelidikan dan pembangunan di Antartika. Sejajar dengan pelancaran Kampus Kota, Universiti Malaya pada 16 Oktober 2001, YM Raja Nazrin Shah selaku Tuanku Pro Canselor Universiti Malaya telah diberi penerangan mengenai projek Antartika oleh Dato' Dr Salleh Mohd Nor FASc serta Prof Madya Dr Azizan Abu Samah selaku Penyelaras Teknikal bagi Program Antartika Malaysia. Turut dipersetujui bagi Presiden Akademi Sains Malaysia mengiringi YM Raja Nazrin Shah melawat Antartika pada tahun 2002.

Persidangan '40 Years: The Antarctica Treaty System in the 21st Century'

Dato' Dr Salleh Mohd Nor FASc, Setiausaha Agung Akademi Sains Malaysia dan juga Pengerusi Task Force Antartika ASM menghadiri Persidangan "40 Years: The Antarctica Treaty System in the 21 st Century" di West Sussex, United Kingdom.

Antarctica

Under the RM8, a budget of RM5 million was approved to implement the Malaysian Antarctic Research Programme. Dato' Dr Salleh Mohd Nor FASc acted as the Chairman of the Task Force on Antarctica. The Task Force identified that University of Malaya would be the lead agency for the Malaysian Antarctic Research Programme and the National Antarctic Research Centre be situated and developed in the University. The Academy's Council had also agreed for Malaysian Palm Oil Board (MPOB) to be invited to carry out R&D in the Antarctica. In conjunction with the launching of Kampus Kota, University of Malays on 16 October 2001, YM Raja Nazrin Shah, Tuanku Pro Chancellor of University of Malaya was briefed on the project by Dato' Dr Salleh and Assoc Prof Dr Azizan Abu Samah as the National Technical Coordinator for Malaysian Antarctica Programme. It has also been agreed for the President of the Academy of Sciences Malaysia to accompany YM Raja Nazrin Shah to visit Antarctica in 2002.

Conference on '40 years: the Antarctica Treaty System in the 21st Century'

Dato' Dr Salleh Mohd Nor FASc, Secretary General of the Academy and Chairman of the ASM Task Force on Antarctica attended the Conference on "40 Years: The Antarctica Treaty System in the 21st Century" in West Sussex, United Kingdom. The Conference was

Persidangan itu dianjurkan oleh Polar Region Section, UK Foreign and Commonwealth Office dan Fridtjof Institute of Norway, dengan bantuan kewangan dari Tinker Foundation, USA. Sejumlah 44 perserta menghadiri persidangan tersebut, yang mana majoriti adalah ahli-ahli Antarctica Treaty System (ATS). Perbincangan berkisar mengenai sejarah perkembangan ATS, keberkesanan ATS, isu-isu 'enforcement', hubungan ATS dengan pertubuhan antarabangsa dan negara-negara bukan ahli, dan peranan ahli serta ahli 'consultative' dalam memelihara integriti Antartika. Tidak dapat dinafikan bahawa Antartika adalah unik dan merupakan satu persekitaran yang istimewa yang harus dilindungi dan persidangan bersetuju dengan isu ini dan juga perlunya untuk membuka benua tersebut kepada tujuan penyelidikan daripada mana-mana negara dalam dan luar ATS. Penyertaan Dato' Dr Salleh adalah berguna bagi menyatakan minat Malaysia terhadap Antartika.

organized by the Polar Regions Section of the UK Foreign and Commonwealth Office and the Fridtjof Institute of Norway, with financial support from the Tinker Foundation, USA. A total of 44 participants attended the Conference, mainly from members of the Antarctica Treaty System (ATS). The discussions revolved around the historical development of the ATS, the effectiveness of the ATS, issues of enforcement, relations of the ATS with international organizations and non-member countries, and the role of members and consultative members in protecting the integrity of Antarctica. It is undeniable that the Antarctica is a unique and special environment that needs to be protected in its natural state in perpetuity and there was unanimous agreement amongst the participants on this issue and the need to open the continent to research interests from any country both within and outside the ATS. The participation of Dato' Dr Salleh was useful to lay claim of Malaysia's interest in Antarctica.

Annual Meeting of ASEAN SET Academies

Akademi Sains, Kejuruteraan dan Teknologi ASEAN dan Organisasi Kebangsaan Serupa mengadakan mesyuarat tahunannya pada 18 September 2001 di International Convention Centre, Bandar Seri Begawan, Brunei Darussalam. Delegasi Akademi dianggotai oleh Academician Dato' Ir Lee Yee Cheong FASc, Datuk Dr Abdul Aziz S.A.Kadir FASc dan Dato' Dr Samsudin Tugiman, Pengarah Eksekutif. Mesyuarat tersebut telah

Annual Meeting of ASEAN SET Academies

ASEAN S.E.T. Academies and similar National Organizations held its annual meeting on 18th September 2001 at the International Convention Center, Bandar Seri Begawan, Brunei Darussalam. The ASM delegation comprised Academician Dato' Ir Lee Yee Cheong FASc., Datuk Dr Abdul Aziz S.A.Kadir FASc and Dato' Dr Samsudin Tugiman. Dato' Ir Lee chaired the meeting. Dr Fatimah H.A. Hamid

dipengerusikan oleh Academician Dato' Ir Lee Yee Cheong.

Semasa mesyuarat, diumumkan bahawa ASEAN-CASE telah dipersetujui sebagai organisasi gabungan bukan kerajaan dengan ASEAN. ASEAN-CASE akan mengambil inisiatif untuk menggalak dan membantu Brunei, Laos, Kambodia dan Myanmar menubuhkan Akademi Sains masing-masing untuk menjadi penandatangan dan ahli ASEAN-CASE.

Mesyuarat juga dimaklumkan mengenai beberapa aktiviti yang dijalankan oleh Akademi-akademi. Satu Majlis ASEAN-CASE telah ditubuhkan dimana Academician Dato' Ir Lee yee Cheong FASc, Naib Presiden Akademi Sains Malaysia telah dilantik sebagai Pengerusi Protem dan Dato' Dr Samsudin Tugiman, Pengarah Eksekutif ASM sebagai Pengarah Eksekutif Protem.Mesyuarat juga membincangkan dan bersetuju untuk ASEAN-CASE melaksanakan dua projek yang dicadangkan bagi tahun 2001 iaitu ASEAN Science Quiz 2002 dan ASEAN Youth Science Forum 2002.

Mesyuarat yang akan datang bagi ASEAN S.E.T Academies and Similar National Organization dari ASEAN dan ASEAN Dialogue Partners akan diadakan di Yangoon, Myanmar akhir Oktober 2002.

presented a welcoming remark on behalf of the local host, the Ministry of Development, Brunei DS.

During the meeting, it was announced that ASEAN-CASE had been approved as an affiliated NGO of ASEAN. ASEAN-CASE will take the initiative to urge and assist Brunei, Laos, Cambodia and Myanmar to establish their own Academies of Science to be signatories and member of ASEAN-CASE. The meeting was informed of several activities by other groupings of Academies. The Board of ASEAN-CASE was formed with Academician Dato' Ir Lee elected as the Protem Chairman and Dato' Dr Samsudin the Protem Executive Director.

The meeting discussed and agreed for ASEAN-CASE to implement the two projects proposed for 2002 - ASEAN Science Quiz 2002 and ASEAN Youth Science Forum 2002.

The next annual meeting of ASEAN S.E.T. Academies and similar National Organizations from ASEAN and ASEAN Dialogue Partners will be held in Yangoon Myanmar, in late October 2002.



Academician Dato' Ir Lee Yee Cheong FASc mempengerusikan mesyuarat ASEAN S.E.T.
Academician Dato' Ir Lee Yee Cheong FASc, chairing the meeting of ASEAN S.E.T.

Report on ASM Publications 2001

Reports & Books

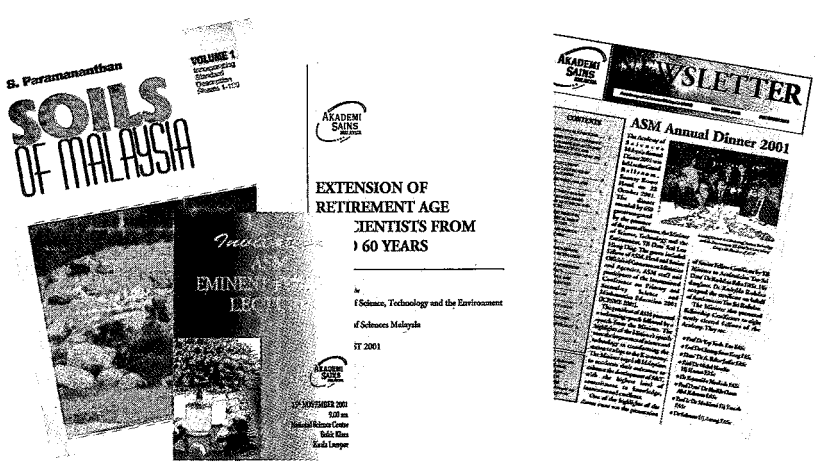
1. *ASM Annual Report & Statement of Accounts 2001*
2. *Newsletter*
3. *Soils of Malaysia : Their Characteristics and Identification Volume 1 by S. Paramananthan, 2001.*

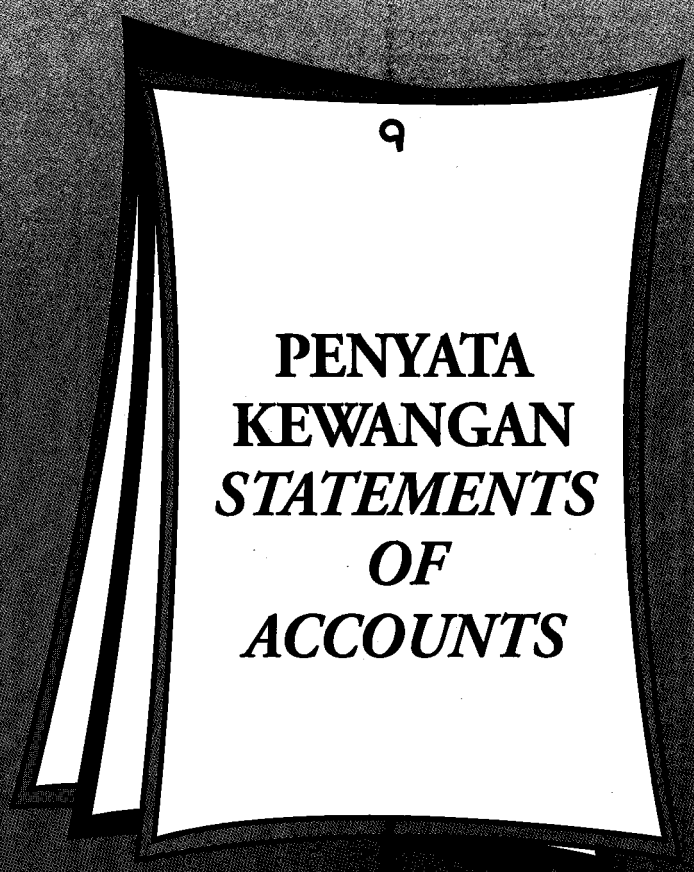
Internal Publications

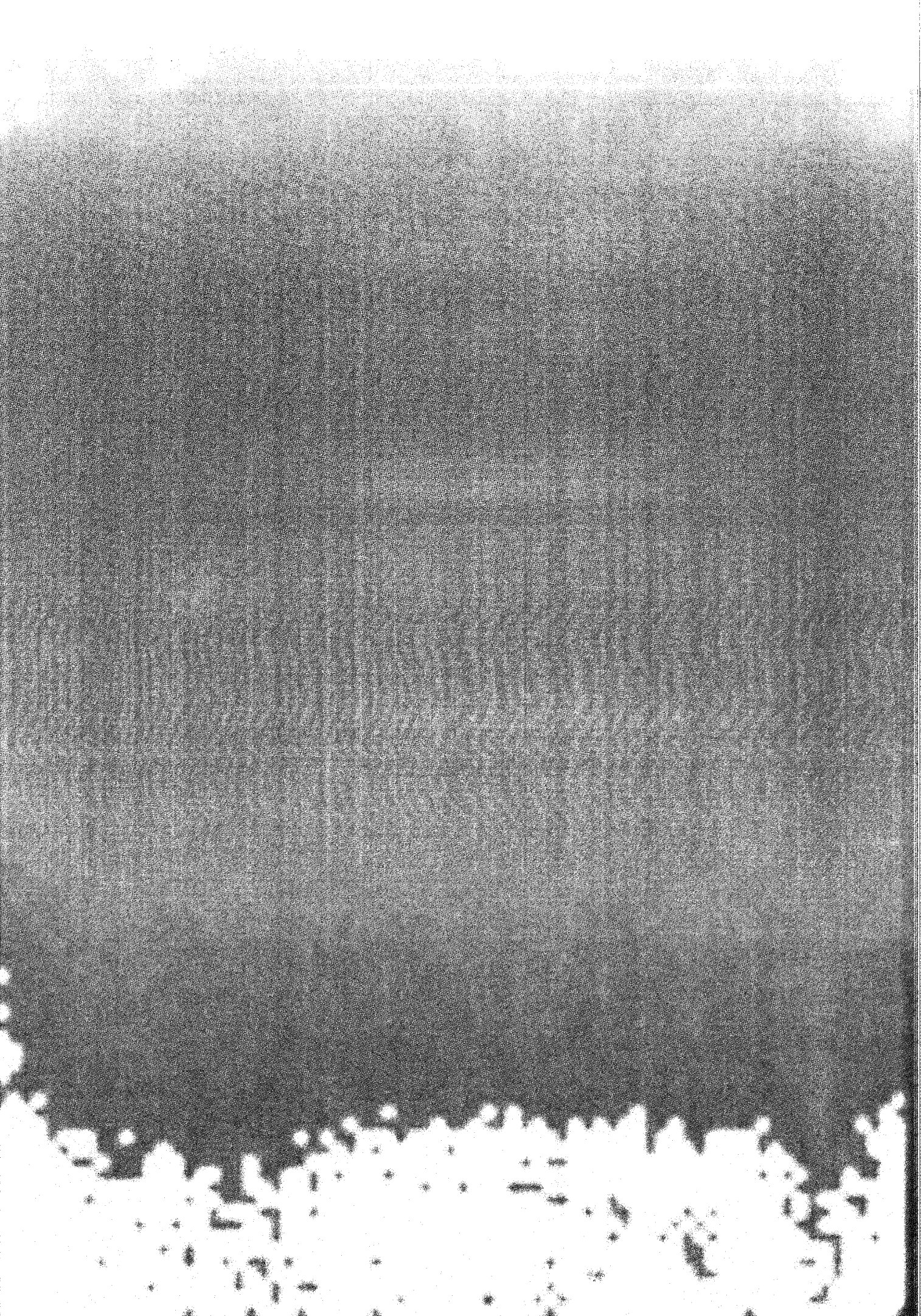
3. *A Monograph on "The War of Oils: Its Aftermath and Future Strategy" by Academician Tan Sri Datuk Dr S.H. Ong FASc.*
4. *A report on "Achieving Excellence in SET – Noble Dream Nobel Prize" by Academy of Sciences Malaysia.*
5. *A Special Publication on "100 Years of Nobel Prize (1901-2001)" by Academy of sciences Malaysia.*
6. *A Paper on "Extension of Retirement Age of Sciencetists from 55 to 60 years" submitted to the Ministry of science, Technology and the Environment by Academy of Sciences Malaysia.*
7. *A Paper on " Meningkatkan Popularity Sains dan Teknologi di Malaysia" by Academy of Science Malaysia.*
8. *A Special report on the "1st Science Council of Asia (SCA) Conference" Bangkok, Thailand, 8-12 May 2001 by Academy of Sciences Malaysia.*

Audio Visual

9. *Video – "Voyage to Antarctica" – Funded by National Science Centre*




9
PENYATA
KEWANGAN
STATEMENTS
OF
ACCOUNTS



SIJIL KETUA AUDIT NEGARA MENGENAI
PENYATA KEWANGAN
AKADEMI SAINS MALAYSIA
BAGI TAHUN BERAKHIR 31 DISEMBER 2001

SIJIL KETUA AUDIT NEGARA MENGENAI
PENYATA KEWANGAN AKADEMI SAINS MALAYSIA
BAGI TAHUN BERAKHIR 31 DISEMBER 2001

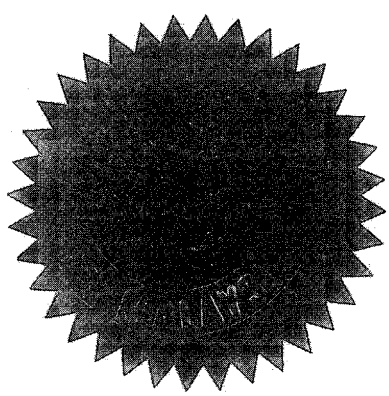
Lembaran Imbangan Akademi Sains Malaysia seperti pada 31 Disember 2001, penyata pendapatan, penyata perubahan ekuiti serta penyata aliran tunai bagi tahun tersebut telah diperiksa oleh Tetuan S. F. Yap & Co., Akauntan Bertauliah, di bawah arahan saya. Pihak pengurusan Akademi Sains Malaysia bertanggungjawab terhadap penyata kewangan. Tanggungjawab saya adalah untuk memberi pendapat terhadap penyata kewangan tersebut berdasarkan kepada pengauditan yang dijalankan.

2. Pengauditan telah dilaksanakan mengikut Akta Audit 1957 dan berpandukan Piawaian Pengauditan Antarabangsa. Piawaian-piawaian tersebut mengkehendaki pengauditan dirancang dan dilaksanakan untuk mendapat kepastian yang munasabah sama ada penyata kewangan Akademi Sains Malaysia adalah bebas daripada kesilapan atau ketinggalan yang ketara. Pengauditan itu termasuk memeriksa rekod-rekod secara semak uji, menyemak bukti-bukti yang menyokong angka-angka dan memastikan penzahiran yang mencukupi dalam penyata kewangan. Penilaian juga dibuat terhadap prinsip-prinsip perakaunan yang digunakan dan penyampaian penyata kewangan secara keseluruhan.

3. Pada pendapat saya, penyata kewangan ini memberi gambaran yang benar dan saksama terhadap kedudukan kewangan Akademi Sains Malaysia pada 31 Disember 2001, hasil operasi serta aliran tunainya untuk tahun tersebut.

(JOHANNA BINTI NGADIMUN)
b.p. KETUA AUDIT NEGARA

PUTRAJAYA
24 APRIL 2002



AKADEMI SAINS MALAYSIA

Academy Of Sciences Malaysia

PENYATA PRESIDEN DAN BENDAHARI KEHORMAT
AKADEMI SAINS MALAYSIA

Kami, **TAN SRI DATUK Dr AHMAD ZAHARUDIN BIN IDRUS F.A Sc** dan **ACADEMICIAN TAN SRI DATUK Dr AUGUSTINE S.H ONG F.A Sc.**, yang merupakan Presiden dan Bendahari Kehormat AKADEMI SAINS MALAYSIA dan juga Ahli-Ahli Majlis, dengan ini menyatakan bahawa, pada pendapat Majlis Akademi, penyata kewangan yang dikemukakan dalam halaman 3 hingga 8 beserta dengan nota-nota di dalamnya adalah disediakan untuk merujuk pandangan yang benar dan saksama berkenaan : -

(a) lembaran imbangan pada 31 Disember 2001 dan akaun pendapatan dan perbelanjaan untuk tahun berakhir itu; dan

(b) penyata aliran tunai untuk tahun berakhir pada 31 Disember 2001

Bagi pihak Majlis

Tan Sri Datuk Dr Ahmad Zaharudin
bin Idrus F.A Sc
Presiden
Akademi Sains Malaysia

Bagi pihak Majlis

Tan Sri Datuk Dr. Augustine
S.H Ong F.A Sc
Bendahari Kehormat
Akademi Sains Malaysia

KUALA LUMPUR, MALAYSIA

Tarikh : 11 APRIL 2002

902-4, Jalan Tun Ismail, 50480 Kuala Lumpur.
Tel: 03-2694 9898 Fax: 03-2694 5858
E-mail: samsudin@akademisains.gov.my

AKADEMI SAINS MALAYSIA

Academy Of Sciences Malaysia

PENGAKUAN OLEH PENGARAH EKSEKUTIF KE ATAS PENGURUSAN KEWANGAN AKADEMI SAINS MALAYSIA

Saya, **DATO' DR SAMSUDIN BIN TUGIMAN,** Pegawai Utama yang bertanggungjawab ke atas pengurusan kewangan **AKADEMI SAINS MALAYSIA,** dengan ikhlasnya mengakui bahawa penyata kewangan yang dikemukakan dalam halaman 3 hingga 8 beserta dengan nota-nota di dalamnya, mengikut sebaik-baik pengetahuan dan kepercayaan saya, adalah betul dan saya, membuat ikrar ini dengan sebenarnya mempercayai bahawa ianya itu adalah benar dan atas kehendak-kehendak Akta Akuan Berkanun 1960.

Sebenarnya dan sesungguhnya
diakui oleh penama di atas
di Kuala Lumpur, Malaysia

.....

Pada : 19 APR 2002

Di hadapan saya,

PESURUHJAYA SUMPAH
W 092
ROBERT LIM HOCK KEE
MALAYSIA

Lot 2.10, Ting. 2, Bangunan Angkasa Raya
Jalan Ampang, 50450 Kuala Lumpur

902-4, Jalan Tun Ismail, 50480 Kuala Lumpur.
Tel: 03-2694 9898 Fax: 03-2694 5858
E-mail: samsudin@akademisains.gov.my

AKADEMI SAINS MALAYSIA

PENYATA PENDAPATAN
BAGI TAHUN BERAKHIR 31 DISEMBER 2001

	Nota	2001 RM	2000 RM
PENDAPATAN			
Pelbagai penerimaan		**20,175**	**29,128**
Faedah dari deposit jangka pendek		**207,241**	**697,696**
Kutipan Majlis Makan Malam		**23,680**	**60,280**
Sumbangan (Grant)		**295,703**	**1,125,844**
		546,799	**1,912,948**
PERBELANJAAN			
Emolumen		**478,106**	**365,357**
Perkhidmatan & bekalan		**327,543**	**330,900**
Penyelengaraan dan alat kelengkapan pejabat		**18,721**	**14,998**
Pemberian dan kenaan bayaran tetap		**5,948**	**5,400**
Perbelanjaan perbelanjaan lain		**8,440**	**5,424**
Susut nilai harta tetap		**106,803**	**142,756**
Majlis makan Malam		**61,737**	**64,953**
Perbelanjaan mengendalikan program sains		**483,574**	**970,067**
		1,490,872	1,899,855
(Kerugian)/Kelebihan pendapatan		**(944,073)**	**13,093**

AKADEMI SAINS MALAYSIA

LEMBARAN IMBANGAN PADA 31 DISEMBER 2001

	Nota	2001 RM	2000 RM
HARTANAH, LOJI DAN PERALATAN	2	999,345	1,106,148
PELABURAN	3	6,000,000	6,000,000
ASET SEMASA			
Lain-lain penghutang	4	83,721	606,818
Simpanan Tetap	5	5,853,262	4,643,935
Wang tunai dan baki di bank	6	117,175	236,816
		6,054,158	5,487,569
LIABILITI SEMASA			
Lain-lain sipiutang	7	250,327	272,565
		250,327	272,565
ASET SEMASA BERSIH		5,803,831	5,215,004
		12,803,176	12,321,152
DIBIAYAI OLEH:			
Kumpulan Wang:			
Kumpulan Wang Pengurusan		11,357,079	12,301,152
Kumpulan Wang Endowment		20,000	20,000
Kumpulan Wang Projek-Projek		1,426,097	0
		12,803,176	12,321,152

AKADEMI SAINS MALAYSIA

PENYATA PERUBAHAN EKUITI
BAGI TAHUN BERAKHIR 31 DISEMBER 2001

	Kumpulan Wang Pengurusan RM	Kumpulan Wang Endowment RM	Kumpulan Wang Projek-Projek RM	Jumlah RM
Baki pada 01 Januari 2001	12,301,52	20,000	-	12,321,152
Penerimaan dalam tahun semasa	-	-	2,295,176	2,295,176
	12,301,152	20,000	2,295,176	14,616,328
Perbelanjaan dalam tahun semasa	-	-	(869,080)	(869,080)
	12,301,152	20,000	1,426,096	13,747,248
Kerugian untuk tahun kewangan semasa	(944,073)	-	-	(944,073)
Baki pada 31 Disember 2001	11,357,079	20,000	1,426,096	12,803,175

AKADEMI SAINS MALAYSIA

PENYATA ALIRAN TUNAI BAGI
TAHUN BERAKHIR 31 DISEMBER 2001

	Nota	2001 RM	2000 RM
ALIRAN TUNAI DARI AKTIVITI OPERASI			
(Kerugian)/Lebihan pendapatan atas perbelanjaan		(944,073)	13,093
Pelarasan:			
Susutnilai		106,803	142,756
Faedah dari deposit jangka pendek		(207,241)	(697,696)
(Kerugian)/kelebihan pendapatan dari operasi sebelum perubahan modal kerja		(1,044,511)	(541,847)
(Lebihan)/kurangan siberhutang		523,098	(576,757)
Lebihan/(kurangan) sipiutang		(22,238)	(84,897)
Tunai bersih (ke)/dari aktiviti operasi		**(543,651)**	**(1,203,501)**
ALIRAN TUNAI DARI AKTIVITI PELABURAN			
Pembelian aset tetap		0	(3,510)
Pembelian Amanah Saham PHB		0	(6,000,000)
Faedah diterima		207,241	697,696
Tunai bersih (ke)/dari aktiviti pelaburan		**207,241**	**(5,305,814)**
ALIRAN TUNAI DARI AKTIVITI PEMBIAYAAN			
Endowment Fund		0	20,000
Project Pusingan		1,426,096	0
		1,426,096	20,000
(PENGURANGAN)/PERTAMBAHAN BERSIH TUNAI DAN KESETARAAN TUNAI		1,089,686	(6,489,315.00)
TUNAI DAN KESETARAAN TUNAI PADA AWAL TAHUN		4,880,751	11,370,066.00
TUNAI DAN KESETARAAN TUNAI PADA AKHIR TAHUN	8	5,970,437	4,880,751

AKADEMI SAINS MALAYSIA

NOTA-NOTA KEPADA AKAUN

1 DASAR-DASAR PERAKAUNAN

(a) Asas Perakaunan

Akaun telah disediakan mengikut konvension kos sejarah dan mengikut piawaian perakaunan yang diluluskan.

(b) Aset tetap dan susutnilai

Aset tetap dinyatakan pada kos setelah ditolak susutnilai terkumpul.

Susutnilai bagi aset tetap dikira berasaskan kaedah garis lurus di atas kos di sepanjang tempoh hayat kegunaan aset-aset tersebut pada kadar yang berikut:-

Perkakas pejabat & komputer	20%
Komputer	20%
Kenderaan bermotor	20%
Pengubahsuaian	2%

2 HARTANAH, LOJI DAN PERALATAN

	Perkakas pejabat RM	Komputer RM	Kenderaan bermotor RM	Pengubah-suaian RM	2001 RM	2000 RM
KOS						
Pada 1 Januari	82,398	242,632	304,604	1,111,908	1,741,542	1,738,032
Tambahan	0	0	0	0	0	3,510
Pada 31 Disember	82,398	242,632	304,604	1,111,908	1,741,542	1,741,542
SUSUTNILAI TERKUMPUL						
Pada 1 Januari	68,377	194,708	278,025	94,284	635,394	492,638
Dikenakan	13,544	44,443	26,578	22,238	106,803	142,756
Pada 31 Disember	81,921	239,151	304,603	116,522	742,197	635,394
NILAI BUKU BERSIH						
31.12.2001	477	3,481	1	995,386	999,345	-
31.12.2000	14,020	47,924	26,579	1,017,624	-	1,106,148

3 PELABURAN

	2001 RM	2000 RM
Amanah Saham PHB	6,000,000	6,000,000

4 LAIN-LAIN SIBERHUTANG

	2001 RM	2000 RM
Pendahuluan	21,901	5,448
Faedah Terakru	37,309	67,341
Siberhutang	24,511	2,400
Pendapatan Terakru	0	531,629
	83,721	606,818

5 SIMPANAN TETAP

	2001 RM	2000 RM
Deposit disimpan dalam institusi kewangan berlesen	5,853,262	4,643,935

6 WANG TUNAI DAN BAKI DI BANK

	2001 RM	2000 RM
Bank	115,175	234,816
Tunai Runcit	2,000	2,000
	117,175	236,816

7 LAIN -LAIN SIPIUTANG

	2001 RM	2000 RM
Kumpulan Wang Simpanan Pekerja	8,617	7,918
Jabatan Hasil Dalam Negeri	2,762	0
Pinjaman Perumahan Perbendaharaan	388	0
Pejabat Pencen	512	0
Cek yang belum ditunaikan	0	2,498
Sipiutang Am (Sundry Creditors)	229,668	255,644
Unidentified Bank Credits	1,700	0
Peruntukan Perkhid. Audit & Akaun	6,680	6,505
	250,327	272,565

8 TUNAI DAN KESETARAAN TUNAI

Tunai dan kesetaraan tunai di wakili oleh item-item yang berikut:-

	2001 RM	2000 RM
Simpanan Tetap	5,853,262	4,643,935
Wang tunai dan baki di bank	117,175	236,816
	5,970,437	4,880,751

Akademi Sains Malaysia
Academy of Sciences Malaysia
902-4, Jalan Tun Ismail,
50480 Kuala Lumpur.
Tel: 03-2694 9898 Fax: 03-2694 5858
e-mail: samsudin@akademisains.gov.my
http:\\www.akademisains.gov.my