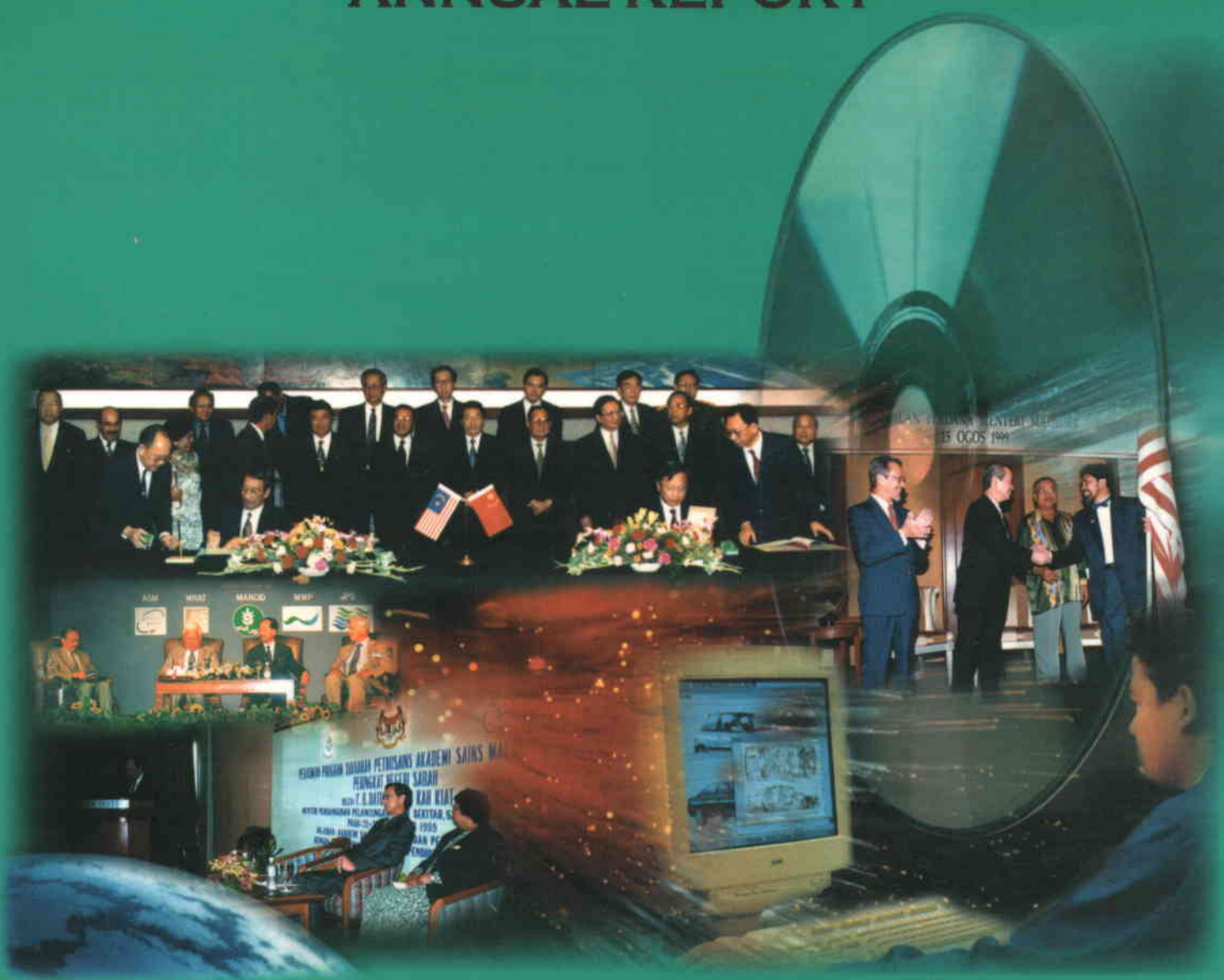
SULIT

LAPORAN TAHUNAN 1999

ANNUAL REPORT



AKADEMI SAINS MALAYSIA

SULIT

LAPORAN TAHUNAN
1999
ANNUAL REPORT

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Cover Design and Printed by :
Hazrah Enterprise
Tel : 603-6867950

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LAPORAN PRESIDEN
PRESIDENT'S REPORT



Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc

Semenjak ditubuhkan pada tahun 1995, Akademi Sains Malaysia telah berkembang, bukan sahaja dari segi bilangan Fellow malah dari segi aktiviti-aktiviti yang dijalankan dan sumbangannya terhadap perkembangan sains, kejuruteraan dan teknologi negara. Bilangan Fellow Akademi sehingga akhir tahun 1999 adalah seramai 77 orang.

Menoleh kebelakang, tahun 1999 adalah tahun yang banyak menempa kejayaan bagi Akademi. Ini dapat dicapai melalui dedikasi Fellow dan kakitangan Akademi. Oleh itu, izinkan saya untuk menghuraikan pencapaian Akademi yang utama pada tahun 1999.

Akademi menganjurkan Mesyuarat Agung Tahunan yang Keempat pada 24 April 1999. Mesyuarat meluluskan Laporan Tahunan 1998 dan Penyata Kewangan berakhir 31 Disember 1998 serta perlantikan sepuluh Fellow baru Akademi bersama-sama

Since its inception in 1995, the Academy of Sciences Malaysia has grown from strength to strength, not only in terms of the number of Fellows but also in terms of activities and contributions to the development of science, engineering and technology of the nation. The membership of the Academy at the end of 1999 stood at 77.

Looking back, 1999 has been a successful year for the Academy. It is made possible through the dedication of the Fellows and staff of the Academy. Permit me to highlight some of the Academy's major achievements in 1999.

The Academy held its Fourth Annual General Meeting on 24 April 1999. The meeting approved the 1998 Annual Report and Statement of Accounts ending 31 December 1998 and the election of ten new Fellows of the Academy together with the election of the Vice President,

dengan perlantikan Naib Presiden, Setiausaha Agung, Bendahari Kehormat dan enam Ahli Majlis Akademi yang baru. Akademi juga buat pertama kali melantik seramai empat Fellow Kanan berdasarkan sumbangan dan pencapaian mereka yang unggul dalam bidang sains, kejuruteraan dan teknologi untuk manafaat negara dan manusia sejagat. Fellow Kanan Akademi adalah layak digelar 'Academician'. Pemilihan Fellow Kanan dilaksanakan oleh satu Panel Khas yang dipengerusikan oleh Tan Sri Dato' Seri Ahmad Sarji Abdul Hamid. Pada tahun 1999, Fellow Kanan yang dilantik terdiri daripada Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc, Academician Dato' Ir Lee Yee Cheong FASc, Academician Dr M.K. Rajakumar FASc dan Academician Tan Sri Datuk Dr Augustine S.H. Ong FASc.

Salah satu daripada peranan Akademi adalah memberi nasihat kepada Kerajaan berkenaan perkara berkaitan dengan sains, kejuruteraan dan teknologi. Pada tahun 1999, Akademi telah diberi mandat oleh Kerajaan untuk mengkaji semula dan mengolah Polisi S&T Kebangsaan yang mula digubal pada tahun 1986. Dalam melaksanakan tugas ini, Akademi menggunakan tenaga mahir yang terdiri daripada para Fellow Akademi dan pakar-pakar dari organisasi dan badan-badan professional yang berkaitan. Kajian semula ini dibuat dalam konteks daya saing Malaysia sebagai respons

Secretary General, Honorary Treasurer and six new Members of the Council. The Academy also for the first time elected four Senior Fellows based on their outstanding contributions and achievements in the areas of SET for the benefit of the nation and the humankind. The Senior Fellows are entitled to be called 'Academician'. The selection of the Senior Fellows was done by a Special Panel chaired by Tan Sri Dato' Seri Ahmad Sarji Abdul Hamid. In 1999 the Senior Fellows elected are Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc, Academician Dato' Ir Lee Yee Cheong FASc, Academcian Dr M.K. Rajakumar FASc and Academician Tan Sri Datuk Dr Augustine S.H. Ong FASc.

One of the main roles of the Academy is to provide independent advice to the Government on matters related to science, engineering and technology. In 1999, the Academy has been entrusted by the Government to undertake the review of the National Science and Technology Policy that was first formulated in 1986. In undertaking the review process, the Academy draws relevant expertise from within its Fellows as well as other relevant organizations and professional bodies. The review is done in the context of Malaysia's competitiveness in response to the k-driven economy. It will address issues, the roles of SET, strategies and plan of action that will enhance

kepada k-ekonomi. Ia akan menangani isu-isu, peranan SET, strategi dan pelan tindakan yang akan meningkatkan daya saing Malaysia dalam k-ekonomi. Laporan awal telah pun dimajukan kepada Kementerian Sains, Teknologi dan Alam Sekitar dan laporan akhir yang lengkap akan diserahkan pada bulan April 2000.

Melalui Seminar "Future Directions and Business Opportunities in Food Production in NAP3" Akademi sedang di dalam proses menyiapkan satu laporan khas yang mengandungi usulan dan pelan tindakan mengenai prospek masa hadapan industri makanan dan pertanian di Malaysia.

Di bawah Program Kecemerlangan yang bertujuan untuk menanam budaya kecemerlangan di dalam bidang sains, kejuruteraan dan teknologi, Akademi menganjurkan Syarahan Perdana 1999. Syarahan yang bertajuk "Superfluidity in 3HE: Discovery and Understanding" disampaikan oleh Prof Douglas Osheroff, Pemenang Anugerah Nobel dalam bidang Fizik tahun 1996 di Universiti Malaya. Lanjutan dari program ini, Akademi dengan kerjasama Universiti Sains Malaysia menganjurkan satu Syarahan Umum yang bertajuk "The Nature of Discovery in Physics" yang juga disampaikan oleh Prof Douglas Osheroff.

Akademi juga telah diberi mandat oleh Kementerian Sains, Teknologi dan Alam Sekitar untuk menghasilkan kertas cadangan bagaimana untuk

competitiveness of Malaysia in the k-driven economy. The inception report has been submitted to the Ministry of Science and Technology and the Environment and the final report will be due for submission in April 2000.

Through a Seminar on "Future Directions and Business Opportunities in Food Production in NAP3" the Academy is finalizing a special report containing recommendations and action plans on future prospects for the food and agriculture industries in Malaysia.

Under the Culture of Excellence Programme aimed at inculcating a culture of excellence in science, engineering and technology, the Academy held its 1999 Annual Oration. The Oration entitled "Superfluidity in 3HE: Discovery and Understanding" was delivered by Prof Douglas Osheroff, a Nobel Laureate in Physics in 1996 at the University of Malaya. As a follow-up to this event, the Academy in collaboration with the University of Science Malaysia organized a Public Lecture entitled "The Nature of Discovery in Physics" which was also delivered by Prof Douglas Osheroff.

The Academy has been tasked by the Ministry of Science, Technology and the Environment to come up with a proposal on how to get a Malaysian Nobel Laureate by the Year 2020. This arises from the challenge thrown to the scientific community by our Prime Minister, YAB Dato' Seri Dr Mahathir

menghasilkan Pemenang Anugerah Nobel Malaysia pada tahun 2020. Ini adalah lanjutan daripada cabaran oleh Perdana Menteri Malaysia, YAB Dato' Seri Dr Mahathir Mohamad kepada masyarakat saintifik negara. Sebagai susulan Akademi telah menubuhkan satu Jawatankuasa Petugas untuk mencadangkan aktiviti dan pelan tindakan yang harus diambil bagi membolehkan Akademi menghasilkan kertas cadangan tersebut. Salah satu daripada inisiatif yang diambil oleh Akademi adalah menganjurkan satu syarahan eksklusif berkenaan "Nobel Prize – Its Organization and Strategies: An Exclusive Insight" yang disampaikan oleh Prof Jan S. Nilsson, Presiden Royal Swedish Academy of Sciences. Kertas cadangan tersebut merangkumi usaha pemupukan budaya kecemerlangan di kalangan masyarakat saintifik Malaysia, penggalakan penyelidikan, dan perletakan asas bagi menghasilkan saintis Malaysia yang inovatif, bermotivasi dan 'research minded' untuk pembangunan sains, kejuruteraan dan teknologi di masa hadapan.

Satu daripada aktiviti utama di bawah program ini adalah pelancaran Program Penyelidikan Malaysia-Antartika oleh YAB Dato' Seri Abdullah Ahmad Badawi, Timbalan Perdana Menteri semasa Majlis Jamuan Tahunan Akademi 1999. Saya dengan sukacita memaklumkan bahawa kumpulan pertama saintis Malaysia telah berjaya menggendalikan

Mohamad. As a follow up the Academy had set up a Task Force to propose activities and line of action that will enable the Academy to come up with the concept paper. One of the initiatives that have been undertaken by the Academy is the organization of an exclusive lecture on "Nobel Prize – Its Organization and Strategies: An Exclusive Insight" which was delivered by Prof Jan S. Nilsson, President of the Royal Swedish Academy of Sciences. The proposal encompass the inculcation of the culture of excellence in the Malaysian scientific community, the encouragement of research, the laying of the foundation for the creation of innovative, motivated and research minded Malaysian scientists on whom we can depend upon for our future development in the areas of science, engineering and technology.

Another significant event under the programme was the launching of the Malaysia - Antarctica Research Programme by YAB Dato' Seri Abdullah Ahmad Badawi, Deputy Prime Minister during the Academy's 1999 Annual Dinner. I am pleased to report that the first team of Malaysian scientists had successfully concluded its research in Antarctica. The four-member team shared their experiences and thoughts about conducting research in Antarctica in particular and co-operative research in general in a briefing session held at the Academy. The unique environment in which the research

penyelidikan mereka di Antartika. Kumpulan penyelidik seramai empat orang ini telah berkongsi pengalaman dan buah fikiran mereka mengenai penyelidikan di Antartika khususnya dan penyelidikan secara kerjasama amnya pada satu sesi taklimat di Akademi. Persekitaran yang unik dimana penyelidikan dijalankan merupakan satu aspek yang menarik terutamanya dari segi persediaan penyelidikan, penganjuran dan pengurusan serta perlaksanaannya. Di bawah program penyelidikan masa ini, Penumpuan Penyelidikan dalam Bidang-bidang Keutamaan (IRPA) telah meluluskan dua projek di Antartika. Projek pertama mengenai pencemaran bahan organik di sekitar Scotts Base sedang dijalankan. Projek kedua mengenai kajian Gelombang Graviti di kawasan Ross Island sedang di dalam proses penapisan oleh New Zealand's Antarctic Research Committee (ARAC).

Seperti tahun lalu, dua pemenang dianugerahkan Geran Penyelidikan Perubatan Dr Ranjeet Bhagwan Singh. Mereka adalah Dr Fong Mun Yik dari Universiti Malaya dan Dr Kamarul Ariffin dari Hospital Universiti Kebangsaan Malaysia. Syarahan Memorial Dr Ranjeet Bhagwan Singh yang kedua bertajuk "The New Biology and Medicine" disampaikan oleh Prof Erling Norrby, Professor, Fakulti Perubatan, Institut Karonslika/Setiausaha Agung Royal Swedish Academy of Sciences. Akademi juga menganjurkan satu bengkel teknikal "Principles,

was conducted represent an interesting aspect especially in term of research preparation, organization, management and implementation. Under the current research programme, Intensification of Research in Priority Areas (IRPA) has already approved two projects in Antarctica. The first project on the study of organic pollutants around Scott Base is underway. The second project on the study of Gravity Waves in the region of Ross Island is at the moment undergoing New Zealand's Antarctic Research Committee (ARAC) vetting.

As in previous year, two recipients were awarded the Dr Ranjeet Bhagwan Singh Medical Research Grants. They were Dr Fong Mun Yik from Universiti Malaya and Dr Kamarul Ariffin from Hospital Universiti Kebangsaan Malaysia. The second Dr Ranjeet Bhagwan Singh Memorial Lecture entitled "The New Biology and Medicine" was delivered by Prof Erling Norrby, Professor, Medical Faculty, Karonslika Institute/Secretary General of the Royal Swedish Academy of Sciences. A technical workshop funded under the Dr Ranjeet Bhagwan Singh Medical Research Fund on "Principles, Protocols and Pitfalls on Fluorescence *In Situ* Hybridization (FISH) was also organized by the Academy.

Other highlights of the year under the Science Excellence Programme included the India-

Protocols and Pitfalls on Fluorescence *In Situ* Hybridization (FISH)" yang dibiayai oleh Geran Penyelidikan Perubatan Dr Ranjeet Bhagwan Singh.

Diantara acara kemuncak yang lain di bawah Program Kecemerlangan Sains adalah Siri Syarahan India-ASEAN Eminent Persons. Prof P.N. Tandon, Professor Emeritus, Jabatan Neurosurgeri, All India Institute of Microsurgery (AIIMS) menyampaikan syarahan bertajuk "State of the Art (Neurosurgery) in India" dan "Recent Advances in Pathogenesis, Investigation and Treatment of Brainstem Haemorrhages". Beliau juga membentangkan kertas kerja yang bertajuk "India's Response in Terms of National S&T Policy to the Knowledge-driven Economy" di Seminar Antarabangsa Kajian Semula Polisi S&T Kebangsaan.

Salah satu daripada fokus utama Akademi adalah untuk membantu meningkatkan keupayaan teknologi dan kompetensi industri Malaysia. Di bawah bidang fokus ini, Akademi dengan kerjasama Japan Science and Technology Corporation (JST) telah menganjurkan dua forum industri peringkat tinggi. Satu darinya adalah mengenai "Strategy for Upgrading Malaysian Industry" dan yang keduanya adalah mengenai "Human Resource Development for Upgrading Manufacturing Capability in Malaysia". Peserta forum tersebut adalah dari kalangan sektor industri.

Bulan Mei menyaksikan sambungan Syarahan PETROSAINS-ASEAN Eminent Persons Lecture Series. Prof P.N. Tandon, Emeritus Professor, Department of Neurosurgery, All India Institute of Microsurgery (AIIMS) delivered a lecture on "State of the Art (Neurosurgery) in India" and another on "Recent Advances in Pathogenesis, Investigation and Treatment of Brainstem Haemeorrhages". He also delivered a paper on "India's Response in Terms of National S&T Policy to the Knowledge-driven Economy" at the International Seminar on National S&T Policy Review.

One of the Academy's major areas of focus is to assist in upgrading the technological capability and competency of Malaysian industries. Under this thrust area, the Academy in collaboration with the Japan Science and Technology Corporation (JST) organized two high level industry fora, viz. "Strategy for Upgrading Malaysian Industry" and "Human Resource Development for Upgrading Manufacturing Capability in Malaysia". The participants at these fora are those from the industrial sectors.

May 1999 saw the continuation of the PETROSAINS-ASM 1998/ 1999 Lecture, a major project under the Academy's Science Awareness Programme which was developed to increase awareness and understanding of the central role which science and technology play.

The second phase of the PETROSAINS-ASM 1998/1999

ASM 1998/1999, satu projek utama di bawah Program Kesedaran Sains Akademi yang bertujuan untuk meningkatkan kesedaran dan kefahaman tentang peri pentingnya sains dan teknologi.

Fasa kedua Syarahan PETROSAINS-ASM 1998/1999 ini bermula di Pulau Pinang dengan diikuti oleh Kulim, Beseri, Kuantan, Kota Bharu, Kuala Terengganu, Kuching dan berakhir di Kota Kinabalu. Syarahan tersebut mandapat sambutan yang amat memberangsangkan daripada para pelajar dan guru-guru yang terlibat. Seramai 7,437 orang pelajar dan 602 orang guru daripada 424 buah sekolah telah terlibat dengan Syarahan ini. Syarahan ini telah ditaja sepenuhnya oleh PETRONAS dan Akademi berharap agar kerjasama ini akan berterusan untuk masa-masa akan datang.

Semenjak diberi mandat oleh Kerajaan untuk menerajui penubuhan Pusat Sumber Sains dan Teknologi Kebangsaan (NSTRC), Akademi telah mengambil langkah-langkah yang wajar untuk menrealisasikan cadangan tersebut. Selanjutnya Akademi telah diberi sebidang tanah di Serdang, Selangor oleh Universiti Putra Malaysia (UPM). Majlis Akademi kemudiannya memutuskan supaya NSTRC didirikan di atas tanah tersebut sebagai sumbangan Akademi kepada NSTRC. Sebuah firma arkitek ditugaskan untuk melakar pelan konsep NSTRC. Kertas cadangan yang telah dikaji semula dan dipersetujui telah

Lecture began in Pulau Pinang followed by Kulim, Beseri, Kuantan, Kota Bharu, Kuala Terengganu, Kuching and ended in Kota Kinabalu. The Lecture received overwhelming response from both the students and the teachers. A total of 7,437 students and 602 teachers from 424 schools from all over Malaysia participated in the Phase I and Phase II of the Lecture. This Lecture was solely sponsored by PETRONAS and the Academy hopes for this collaboration to continue in the future.

Since given the mandate to lead the efforts in the establishment of the National Science and Technology Resource Centre (NSTRC), the Academy has taken the appropriate actions to realize the proposal. Subsequently the Academy was given a piece of land in Serdang, Selangor by Universiti Putra Malaysia (UPM). The Academy's Council then decided that the NSTRC be set up on this land as the Academy's contribution to the NSTRC. An architect firm was then engaged to draw the conceptual plan of the NSTRC. The final paper on the establishment of the NSTRC which has been reviewed and approved has been submitted to MOSTE for approval. The Academy proposed that the establishment of the NSTRC be included in the 8th Malaysia Plan.

In 1999, the Academy has been very active in international activities.

dimajukan kepada Kementerian Sains, Teknologi dan Alam Sekitar untuk kelulusan. Akademi mencadangkan supaya penubuhan NSTRC dimasukkan ke dalam Rancangan Malaysia ke 8.

Pada tahun 1999, Akademi telah bergiat aktif dalam melaksanakan aktiviti di peringkat antarabangsa. Akademi telah menghantar dua delegasi ke luar negara, satu ke Republik Rakyat China dan satu ke Republik Kyrghyz. Kedua-dua delegasi diketuai oleh saya sendiri. Objektif utama lawatan adalah untuk meninjau perkembangan terbaru dan peluang penyelidikan di dalam bidang sains, kejuruteraan dan teknologi di China dan Kyrghyztan. Adalah diharapkan lawatan ini akan memeteraikan program kerjasama penyelidikan dan pembangunan dalam bidang sains, kejuruteraan dan teknologi di antara para professional dari Malaysia dan China serta Kyrghyz.

Akademi dengan kerjasama Japan International Science and Technology Exchange Centre (JISTEC), Kementerian Sains, Teknologi dan Alam Sekitar dan Institut Jurutera Malaysia (IEM) menganjurkan Seminar Keempat Sains dan Teknologi Asia-Pasifik. Seramai lebih kurang 100 peserta yang berkaitan dengan polisi S&T, pengurusan projek dan penyelidikan dan pembangunan dari sebelas negara Asia-Pasifik menghadiri seminar tersebut.

Akademi juga berpeluang menjadi hos kepada pelawat-pelawat penting

It sent two delegations abroad, one to the Peoples Republic of China and the other to the Kyrghyz Republic. I led both delegations. The main objective of the visits was to explore new developments and opportunities in the areas of research in science, engineering and technology (SET) in China and Kyrghyz. The visits hoped to materialize collaborative R&D programmes in SET between Malaysia and China and Kyrghyz SET professionals.

The Academy in collaboration with the Japan International Science and Technology Exchange Centre (JISTEC), the Ministry of Science, Technology and the Environment and Institution of Engineers Malaysia (IEM) organized "The Fourth Asia-Pacific Science and Technology Seminar". About 100 participants related to S&T policy, project management and R&D management from 11 countries in the Asia-Pacific Region attended the Seminar.

The Academy also had the privilege to host many distinguished visitors throughout the year. Among them were Prof Emeritus Dr Mu Shik Jhon, President of the Korean Academy of Sciences and Technology (KAST), Prof S. Nilsson, President of the Royal Swedish Academy of Sciences, Nobel Laureate Prof Werner Arber, President of the International Council for Science (ICSU) and Prof P.N. Tandon of the Department of Neurosurgery, All

disepanjang tahun. Diantaranya adalah Emeritus Prof Dr Mu Shik Jhon, Presiden Korean Academy of Sciences and Technology (KAST), Prof S. Nilsson, Presiden Royal Swedish Academy of Sciences, Pemenang Anugerah Nobel Prof Werner Arber, Presiden International Council for Science (ICSU) dan Prof P.N. Tandon dari Jabatan Neurosurgeri, All India Institute of Microsurgery (AIIMS) dan Pemenang Anugerah Nobel Prof Douglas Osheroff, Stanford University California.

Para Fellow Akademi terus mendapat pengiktirafan nasional dan antarabangsa menerusi penglibatan mereka dalam banyak aktiviti serantau dan antarabangsa. Academician Dato' Ir Lee Yee Cheong FASc, Naib Presiden Akademi mengetuai delegasi seramai empat orang menghadiri Mesyuarat Tahunan Ketiga "ASEAN SET Academies and Similar National Organizations and Dialogue Partners" dari Australia, Japan, dan China yang diadakan di Manila. Delegasi dianggotai oleh Dato' Dr Salleh Mohd Nor FASc, Setiausaha Agung, Tan Sri Datuk Ir Shahrizaila Abdullah FASc, Fellow Akademi dan Encik Zahir Ismail, Pegawai Sains Kanan Akademi. Dato' Dr Salleh Mohd Nor FASc membentangkan kertas kerja bertajuk "Competitiveness in A Knowledge-Driven Economy: The Role of Science, Engineering and Technology" yang disediakan oleh saya bersama dengan Setiausaha Agung Dato' Dr Salleh Mohd Nor FASc.

India Institute of Microsurgery (AIIMS) and Nobel Laureate Prof Douglas Osheroff, Stanford University California.

The Fellows of the Academy continue to gather national and international distinctions arising from their activities and participation in many regional and international activities. Academician Dato' Ir Lee Yee Cheong FASc, Vice President of the Academy, led a four member delegation to the Third Annual Meeting of ASEAN SET Academies and Similar National Organizations and Dialogue Partners from Australia, Japan, and China which was held in Manila. The members of the delegation were Dato' Dr Salleh Mohd Nor FASc, Secretary General, Tan Sri Datuk Ir Shahrizaila Abdullah FASc, Fellow of the Academy and Mr Zahir Ismail, Senior Scientific Officer of the Academy. Dato' Dr Salleh Mohd Nor FASc delivered a paper entitled "Competitiveness in A Knowledge-Driven Economy: The Role of Science, Engineering and Technology" which was jointly prepared by me and the Secretary General Dato' Dr Salleh Mohd Nor FASc.

Dr Yong Hoi Sen FASc represented the Academy on my behalf at the International Symposium on "Science Policy in Asia" which was held in Irkutsk, Russia. He presented a paper entitled "Competitiveness in a Knowledge-Driven Economy: The Role of Science, Engineering and

Dr Yong Hoi Sen FASc mewakili Akademi bagi pihak saya ke Simposium Antarabangsa 'Science Policy in Asia" yang diadakan di Irkutsk, Rusia. Beliau membentangkan kertas kerja yang bertajuk "Competitiveness in a Knowledge-Driven Economy: The Role of Science, Engineering and Technology". Saya menghadiri "Asian Conference on Scientific Cooperation (ACSC)" yang Keenam dan Ketujuh di Tokyo. Prof Dato' Dr Sham Sani FASc juga menghadiri ACSC yang ketujuh.

Academician Dato' Ir Lee Yee Cheong FASc telah mewakili Malaysia di dua Mesyuarat IAP-Sustainability Transition Coordinating Committee (STCC) yang diadakan di French Academy of Sciences di Paris dan Hungarian Academy of Science di Budapest.

Academician Dato' Ir Lee Yee Cheong FASc dan saya telah menghadiri mesyuarat di Seoul mengenai penubuhan Association of Asian Academies of Sciences (AAAS).

Penerbitan Akademi sepanjang tahun adalah seperti berikut:

1. Laporan Tahunan 1998
2. Laporan "The Role of Scientists in Malaysia – Towards Excellence in Research"
3. Newsletter
4. Prosiding Seminar Pengurusan Sains dan Teknologi Asia-Pasifik ke4: Strategic Approaches for Sustainable Socio-economic Growth in the Face of Global Changes – Penerbitan bersama oleh JST, MOSTE, JISTEC dan IEM
5. Penerbitan Dalaman

Technology". I attended the Sixth and Seventh Asian Conference on Scientific Cooperation (ACSC) in Tokyo. Prof Dato' Dr Sham Sani FASc also attended the Seventh ACSC.

Academician Dato' Ir Lee Yee Cheong FASc represented Malaysia in both the IAP-Sustainability Transition Coordinating Committee (STCC) meetings which were held at the French Academy of Sciences in Paris and the Hungarian Academy of Science in Budapest.

Academician Dato' Ir Lee Yee Cheong FASc and I attended a meeting in Seoul on the establishment of an Association of Asian Academies of Sciences (AAAS).

During the year the Academy published the following:

1. 1998 Annual Report
2. Report on "The Role of Scientists in Malaysia – Towards Excellence in Research"
3. Newsletter
4. Proceedings of the 4th Asia-Pacific Science and Technology Management Seminar: Strategic Approaches for Sustainable Socio-economic Growth in the Face of Global Changes - Co Published by JST, MOSTE, JISTEC and IEM
5. Internal Publications

In 1999, the Academy received 387 publications from international institutions and 110 publications from local institutions including

Pada tahun 1999, Akademi menerima sebanyak 387 penerbitan dari institusi antarabangsa dan 110 naskah penerbitan daripada institusi tempatan termasuk Jurnal, Buku, Prosiding, Berita Akademi dan Laporan Tahunan. Akademi juga mengedarkan sebanyak 1000 naskah Newsletter dan 1000 naskah Laporan Tahunan di dalam dan luar negara.

Akhir sekali saya ingin merakamkan setinggi penghargaan kepada semua Fellow Akademi diatas sokongan dan sumbangan dari segi masa, pengetahuan dan pengalaman dan juga penglibatan mereka didalam aktiviti yang dijalankan. Terima kasih yang ikhlas juga ditujukan kepada semua kakitangan Akademi diatas sokongan, dedikasi dan komitmen. Saya mengucapkan tahniah kepada semua Fellows dan kakitangan Akademi diatas segala usaha mereka. Hasil usaha tersebut, yang dinyatakan didalam laporan ini, menjadi bukti.

Saya menunggu kedatangan tahun 2000, yang nampak menarik, dan mempunyai program aktiviti yang telah sedia terancang.

Journals, Books, Proceedings, Academies News and Annual Reports. The Academy also circulated 1000 copies Newsletters and 1000 copies Annual Report locally as well as abroad.

Finally I would like to record my sincere appreciation and gratitude to all Fellows of the Academy for their support and generous contribution in terms of time, knowledge and experience and also for their active participation in our activities. A sincere 'thank you' also to all staff for their support, dedication and commitment. I congratulate all Fellows and staff of the Academy on the efforts they have made. The results of those efforts, summarized in this report, speak for themselves.

I am looking forward to the year 2000, which appears particularly exciting, and to a full programme of activities already mapped out.



Academician Tan Sri Datuk Dr Omar Abdul Rahman 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 kesedaran 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
- untuk menganalisa masalah-masalah tertentu negara dan mengenalpasti di mana sains, kejuruteraan dan teknoogi dapat memberi sumbangan kepada

- to promote and foster the development of science, engineering and technology
- to provide a forum for the interchange of ideas among scientists, engineers and technologists
- 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
- to analyze particular national problems and identify where science, engineering and technology can contribute to

penyelesaian masalah dengan membuat syor-syor kepada Kerajaan

- ✦ untuk sentiasa mengambl perhatian tentang perkembangan sains, kejuruteraan dan teknologi serta mengenalpasti perkembangan-perkembangan yang relevan dengan keperluan negara dan membawa kepada perhatian Kerajaan akan pekembangannya
- ✦ untuk meyediakan 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 sosial dan ekonomi tentang sains, 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

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 same or almost similar objectives in science, engineering and technology as the Academy

Fungsi
Functions

- ✦ 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

FELLOW BARU
NEW FELLOWS



Dr Mohd Ariffin Hj Aton
(Engineering Sciences)



Dato' Ir Hj Ahmad Zaidee Hj Laidin
(Engineering Sciences)



Prof Dr Koh Chong Lek
(Biological Sciences)



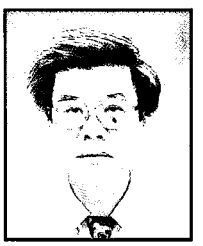
Dr Mohd Zahran b
Dato' Sheikh Abdul Halim
(Information Technology)



Prof Dr Zaharin b Yusoff
(Information Technology)



Prof Puan Sri Datin Dr Nafisah
Hj. Nik Mohd Adeeb
(Medical Sciences)



Prof Dr Mak Chai @ Mak Lian Fong
(Biological Sciences)

EMI
NS
LAYSIA



Datuk Alladin Hashim
(S & T Development and Industry)



Dato' Dr Mazlan Othman
(S & T Development and Industry)



Prof Dr Ho Yin Wan
(Biological Sciences)

SENARAI FELLOW 1999
LIST OF FELLOWS 1999

SAINS PERUBATAN/MEDICAL SCIENCES

1. Academician Dr M.K. Rajakumar FASc
2. Tan Sri Dato' Dr Haji Abdul Majid Ismail FASc
3. Professor Dr Mak Joon Wah FASc
4. Dato' Dr Lim Kee Jin FASc
5. Dato' Dr Hussein Awang FASc
6. Professor Dato' Dr Khalid Abdul Kadir FASc
7. Dato' Dr M. Jegathesan FASc
8. Datuk Dr G. Sreenevasan FASc
9. Dato' Dr Yahya Awang FASc
10. Datuk Dr Keshmahinder Singh FASc
11. Professor Dr Looi Lai Meng FASc
12. Dato' Dr Nadason Arumugasamy FASc
13. Professor Dr Lam Sai Kit FASc
14. Tan Sri Dato' Dr Abu Bakar Dato' Suleiman FASc
15. Tan Sri Dato' Haji Musa Mohamad FASc
16. Professor Dato' Paduka Dr Mustaffa Embong FASc
17. Professor Puan Sri Datin Dr Nafisah bt Hj Nik Mohd Adeeb FASc

SAINS KEJURUTERAAN /ENGINEERING SCIENCES

1. Academician Dato' Ir Lee Yee Cheong FASc
2. Raja Tan Sri Ir Zainal Raja Sulaiman FASc
3. Tan Sri Dr Ir J.G. Daniel FASc
4. Dato' Dr Ikmal Hisham Albakri FASc
5. Tan Sri Dato' Ir Abu Zarim Haji Omar FASc
6. Tan Sri Dato' Ir Haji Shahrizaila Abdullah FASc
7. Dato' Dr Muhammad Ridzuan Haji Salleh FASc
8. Tan Sri Dato' Ir Muhammad Yussuf Muhammad Yunus FASc
9. Ir Hong Lee Pee FASc
10. Hijjas Kasturi FASc
11. Ir K. Kumarasivam FASc
12. Datuk Ir Haji Ahmad Zaidee Laidin FASc
13. Dr Mohd Ariffin Haji Aton FASc

Senarai Fellow 1999
List of Fellows 1999

SAINS BIOLOGI/BIOLOGICAL SCIENCES

1. Professor Dr Abdul Latif Ibrahim FASc
2. Emeritus Professor Dato' Dr Ahmad Nawawi Haji Ayob FASc
3. Tan Sri Professor Dato' Dr Syed Jalaludin Syed Salim FASc
4. Datuk Dr Ahmad Zaharudin Idrus FASc
5. Dato' Dr Salleh Mohd Nor FASc
6. Professor Dato' Dr Zakri A. Hamid FASc
7. Tan Sri Dato' Dr Ahmad Mustaffa Babjee FASc
8. Dr Yong Hoi Sen FASc
9. Emeritus Professor Dr Chin Hoong Fong FASc
10. Dr Francis S.P. Ng FASc
11. Professor Dr Mak Chai @ Mak Lian Fong FASc
12. Professor Dr Ho Yin Wan FASc
13. Professor Dr Koh Chong Lek FASc

SAINS MATEMATIK DAN FIZIKAL
MATHEMATICAL AND PHYSICAL SCIENCES

1. Dato' Dr Chatar Singh FASc
2. Tan Sri Dato' Dr Ahmad Tajuddin Ali FASc
3. Professor Dato' Dr Mohd Sham Mohd Sani FASc
4. Datuk Dr R. Ratnalingam FASc
5. Fateh Chand FASc
6. Professor Dr Shahrir Mohd Zain FASc
7. Dr Chia Swee Ping FASc

SAINS KIMIA/CHEMICAL SCIENCES

1. Academician Tan Sri Datuk Dr Augustine Ong Soon Hock FASc
2. Tan Sri Dr 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

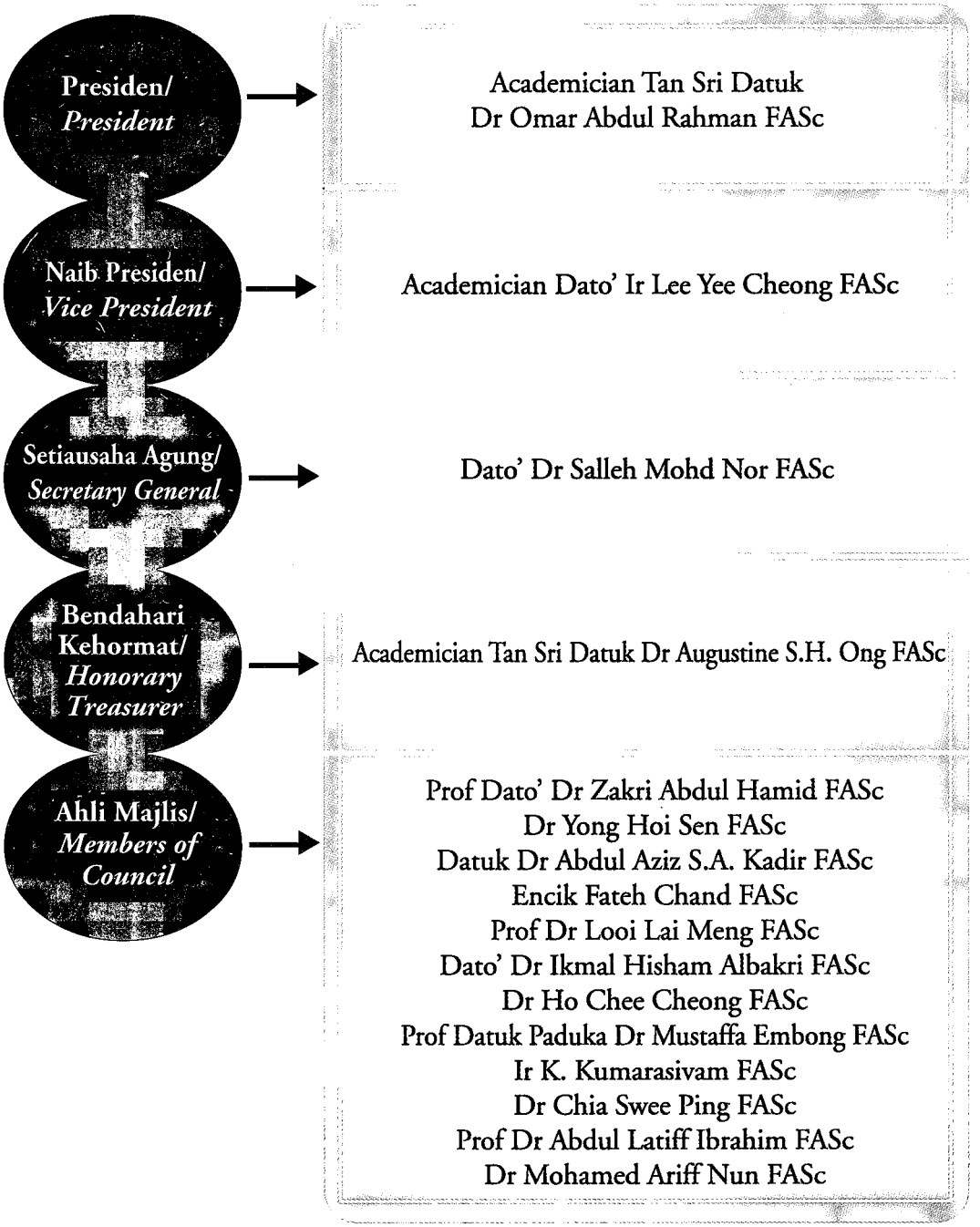
TEKNOLOGI MAKLUMAT/INFORMATION TECHNOLOGY

1. Tengku Datuk Dr Mohd Azzman Shariffadeen Tengku Ibrahim FASc
2. Professor Dato' Dr Mohamad Zawawi Ismail FASc
3. Tan Sri Dato' Ir Shamsuddin Abdul Kadir FASc
4. Haji Ismail Sulaiman FASc
5. Professor Emeritus Datuk Dr Tan Wang Seng FASc
6. Dr Mohamed Arif Nun FASc
7. Dr Mohamad Awang Lah FASc
8. Professor Dr Zaharin Yusoff FASc
9. Dr Mohamad Zahran Dato' Sheikh Abdul Halim FASc

PEMBANGUNAN SAINS & TEKNOLOGI DAN INDUSTRI/ SCIENCE AND TECHNOLOGY DEVELOPMENT AND INDUSTRY

1. Academician Tan Sri Datuk Dr Haji Omar Abdul Rahman FASc
2. 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 Abdul Rahman Yaacob FASc
6. Datuk Dr Syed M.A. Alhady FASc
7. Datuk Dr Abdul Aziz Sheikh Abdul Kadir FASc
8. Datuk Yong Poh Kon FASc
9. T. Ananda Krishnan FASc
10. Datuk Dr Yusuf Basiron FASc
11. Datuk Alladin Hashim FASc
12. Dato' Dr Mazlan Othman FASc

AHLI MAJLIS 1999
COUNCIL MEMBERS 1999



MESYUARAT MAJLIS
COUNCIL MEETINGS

Bagi tahun berakhir 31 Disember 1999, Majlis bermesyuarat sebanyak (5) lima kali:

- 27 Februari 1999 (ke23)
- 10 April 1999 (ke24)
- 3 Mei 1999 (ke25)
- 17 Julai 1999 (ke26)
- 1 November 1999 (ke27)
- 18 Disember 1999 (ke28)

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

- Kajian Semula Belanjawan 1999 dan Aktiviti Program
- Siri Syarahan PETROSAINS-ASM – Fasa II
- Syarahan Perdana ASM dan Syarahan Umum
- Geran Penyelidikan Perubatan Dr Ranjeet Bhagwan Singh dan Syarahan Memorial
- Penubuhan Tabung ASM
- Majlis Makan Malam Tahunan ASM
- Kajian Semula Polisi Sains dan Teknologi Kebangsaan
- Program Antartika
- Cadangan bagaimana untuk menghasilkan Pemenang Anugerah Nobel pada Tahun 2020
- Pertukaran dan lawatan

For the year ending 31 December 1999, the Council met five (5) times:

- 27 February 1999 (23rd)
- 10 April 1999 (24th)
- 3 May 1999 (25th)
- 17 July 1999 (26th)
- 1 November (27th)
- 18 December 1999 (28th)

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

- Review of 1999 Budget and Programme of Activities
- PETROSAINS-ASM Lecture Series – Phase II
- ASM Annual Oration and Public Lectures
- Dr Ranjeet Bhagwan Singh Research Grant and Memorial Lecture
- ASM Fund Raising
- ASM Annual Dinner
- Review of National SET Policy
- Antarctica Programme
- Proposal on How to Get A Nobel Laureate by the Year 2020
- Exchanges and Visits

JAWATANKUASA KERJA DAN PROGRAM
WORKING AND PROGRAMME COMMITTEES

Untuk membantu dalam pentadbiran dan operasi Akademi, Majlis telah menubuhkan beberapa Jawatankuasa yang bertanggungjawab untuk menjalankan beberapa fungsi dan tanggungjawab. Dalam tahun 1999 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 1999, the following committees were operational:

JAWATANKUASA EKSEKUTIF/ *EXECUTIVE COMMITTEE*

Presiden/*President*
Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc
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 ANUGERAH/ *AWARDS COMMITTEE*

Penegerusi/*Chairman*
Academician Dr M.K. Rajakumar 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*

Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc (Chairman)
Academician Dato' Ir Lee Yee Cheong FASc
Dato' Dr Salleh Mohd Nor (Secretary)
Tan Sri Dato' Ir Shahrizaila Abdullah FASc
Prof Dato' Dr Mohd Zawawi Ismail FASc
YM Tg Datuk Dr Azzman Shariffadeen Tg Ibrahim FASc
Prof Dato' Dr Sham Sani FASc
Encik Fateh Chand FASc
Dr Yong Hoi Sen FASc

JAWATANKUASA KEAHLIAN/ *MEMBERSHIP COMMITTEE*

Pengerusi/*Chairman*
Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc

Setiausaha/*Secretary*
Dato' Dr Salleh Mohd Nor FASc

Sains Perubatan/*Medical Sciences*
Prof Dr Looi Lai Meng FASc
Sains Kejuruteraan/*Enginering Sciences*
Dato' Dr Ikmal Hisham Albakri FASc
Sains Biologi/*Biological Sciences*
Dr Yong Hoi Sen FASc
Sains Matematik & Fizikal/
Mathematical & Physical Sciences
Dr Chia Swee Ping FASc
Sains Kimia/*Chemical Sciences*
Academician Tan Sri Datuk Dr Augustine S.H. Ong FASc
Teknologi Maklumat/*Information Technology*
Dr Mohd Arif Nun FASc
Pembangunan S&T dan Industri/
S & T Development & Industry
Datuk Dr Abdul Aziz S.A. Kadir FASc

JAWATANKUASA PROGRAM
PROGRAMME COMMITTEE

Pengerusi Koordinator/*Coordinating Chairman*
Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc

JAWATANKUASA KERJA/*WORKING COMMITTEES*

Nasihat Kepada Kerajaan/*Advice to Government*
Pengerusi Koordinator/*Coordinating Chairman*
Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc

Pendidikan Sains/*Science Education*
Pengerusi/*Chairman*
Prof Datuk Paduka Dr Mustaffa Embong 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*
Prof Dato' Dr Zakri Abdul Hamid FASc

Pengurusan Sumber Asli/
Natural Resources Management
Pengerusi/*Chairman*
Encik Fateh Chand FASc

Kesedaran dan Kefahaman Awam Mengenai S&T/
Public S & T Awareness, Understanding and Leadership
Pengerusi/*Chairman*
Dr Chia Swee Ping FASc

Budaya Kecemerlangan/*Culture of Excellence*
Pengerusi/*Chairman*
Prof Dr Abdul Latiff Ibrahim FASc

Sumbangan kepada Pembangunan Industri – Meningkatkan
Keupayaan Teknologi/
Contribution to Industrial Development - Enhancing Technological Capability
Pengerusi/*Chairman*
Dato' Dr Ikmal Hisham Albakri FASc

Jawatankuasa Kerja dan Program
Working and Programme Committee

Teknologi Maklumat/*Information Technology*
Pengerusi/*Chairman*
Dr Mohamed Arif Nun FASc

Penerbitan/ *Publication*
Pengerusi/*Chairman*
Dr Yong Hoi Sen FASc

Alam Sekitar/ *Environment*
Pengerusi/*Chairman*
En Fateh Chand FASc

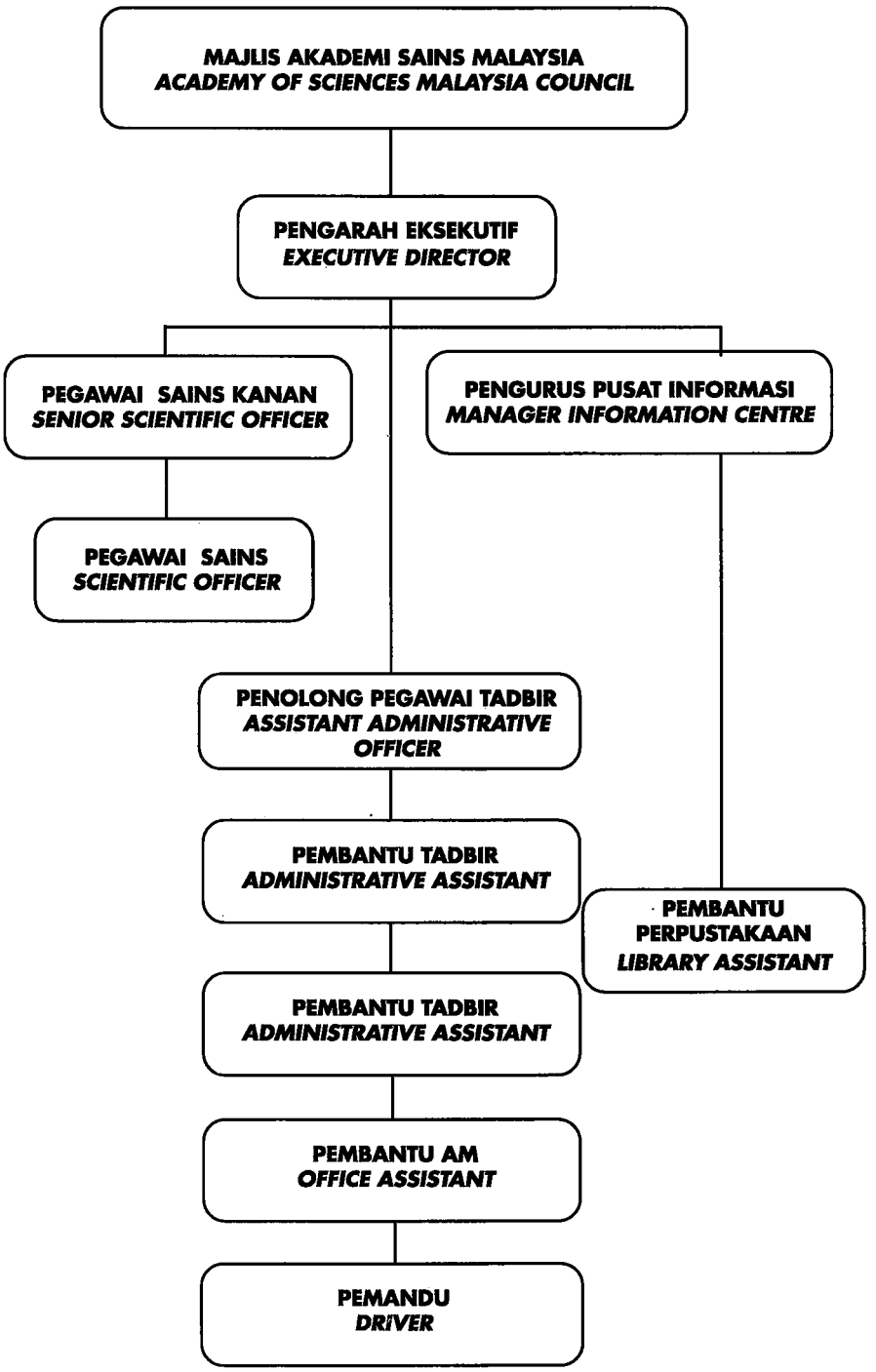
Dr Ranjeet Bhagwan Singh Medical Research Fund
Pengerusi/*Chairman*
Prof Dr Looi Lai Meng FASc

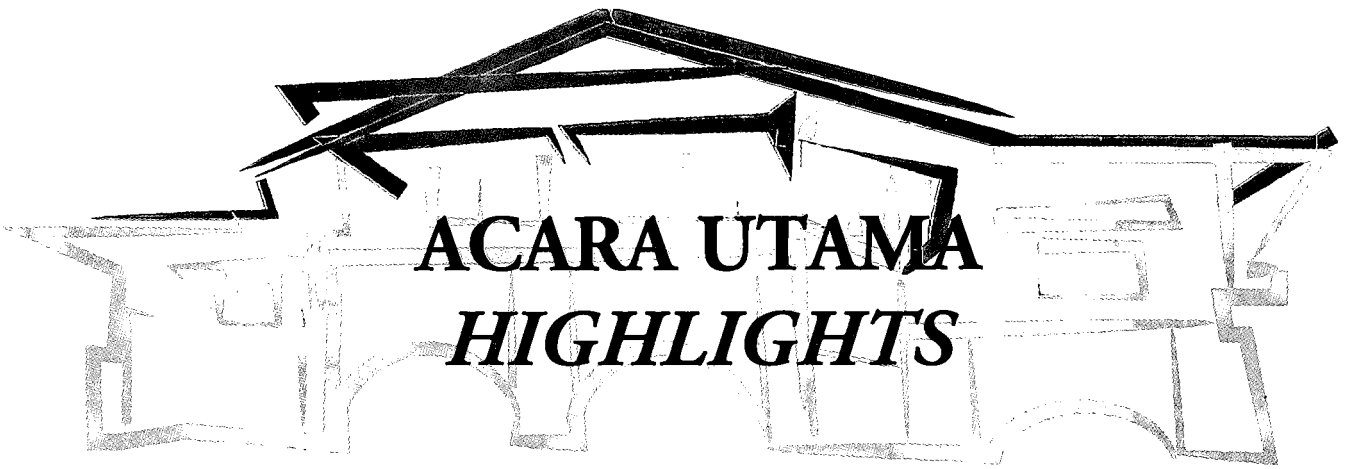
Program P&P Malaysia di Antartika/
Malaysian R & D Programme in Antarctica
Pengerusi /*Chairman*
Dato' Dr Salleh Mohd Nor FASc

Search Committee
Pengerusi /*Chairman*
Dato' Dr Salleh Mohd Nor FASc

Projek Taman Botani Kebangsaan/
National Botanic Garden Project
Pengerusi /*Chairman*
Dato' Dr Salleh Mohd Nor FASc

CARTA ORGANISASI
ORGANIZATION CHART





ACARA UTAMA
HIGHLIGHTS

Mesyuarat Agung Tahunan Keempat
Fourth Annual General Meeting

Mesyuarat Agung Tahunan yang Keempat diadakan pada 24 April 1999 dengan dipengerusikan oleh Presiden Akademi. Seramai 26 orang Fellow menghadiri mesyuarat tersebut.

Mesyuarat tersebut membincangkan dan meluluskan perkara-perkara berikut:

- Laporan Tahunan 1998 dan Penyata Akaun
- Pemilihan sepuluh Fellow baru
  - Prof Puan Sri Datin Dr Nafisah Hj Nik Mohd Adeeb (Sains Perubatan)
  - Dato' Ir Haji Ahmad Zaidee Haji Laidin (Sains Kejuruteraan)
  - Dr Mohd Ariffin Haji Aton (Sains Kejuruteraan)
  - Prof Dr Mak Chai @ Mak Lian Fong (Sains Biologi)
  - Prof Dr Ho Yin Wan (Biological Sciences)
  - Prof Dr Koh Chong Lek (Sains Biologi)
  - Dr Mohd Zahran Dato' Sheikh Abdul Halim (Teknologi Maklumat)
  - Prof Dr Zaharin Yusoff (Teknologi Maklumat)
  - Datuk Alladin Hashim (Pembangunan S&T dan Industri)

The Fourth Annual General Meeting was held on 24 April 1999 with the President in the Chair. Twenty six Fellows attended the AGM.

The meeting discussed and approved the following:

- 1998 Annual Report and Statement of Accounts ending 31 December 1998
- Election of ten new Fellows of the Academy
  - Prof Puan Sri Datin Dr Nafisah Hj Nik Mohd Adeeb (Medical Sciences)
  - Dato' Ir Haji Ahmad Zaidee Haji Laidin (Engineering Sciences)
  - Dr Mohd Ariffin Haji Aton (Engineering Sciences)
  - Prof Dr Mak Chai @ Mak Lian Fong (Biological Sciences)
  - Prof Dr Ho Yin Wan (Biological Sciences)
  - Prof Dr Koh Chong Lek (Biological Sciences)
  - Dr Mohd Zahran Dato' Sheikh Abdul Halim (Information Technology)
  - Prof Dr Zaharin Yusoff (Information Technology)
  - Datuk Alladin Hashim (S&T Development and Industry

❖ Dato' Dr Mazlan Othman (Pembangunan S&T dan Industri)

- Pemilihan Naib Presiden, Setiausaha Agung, Bendahari Kehormat dan enam Ahli Majlis baru
  - ❖ Academician Dato' Ir Lee Yee Cheong FASc (Naib Presiden)
  - ❖ Dato' Dr Salleh Mohd Nor FASc (Setiausaha Agung)
  - ❖ Academician Tan Sri Datuk Augustine S.H. Ong FASc (Bendahari Kehormat)
  - ❖ Dr Ho Chee Cheong FASc (Ahli Majlis)
  - ❖ Prof Datuk Paduka Dr Mustaffa Embong FASc (Ahli Majlis)
  - ❖ Ir K Kumarasivam FASc (Ahli Majlis)
  - ❖ Dr Chia Swee Ping FASc (Ahli Majlis)
  - ❖ Prof Dr Abdul Latif Ibrahim FASc (Ahli Majlis)
  - ❖ Dr Mohamed Ariff Nun FASc (Ahli Majlis)

Di akhir mesyuarat Agung Tahunan, Presiden telah menyampaikan Ucapan Presiden. Presiden telah mengutarakan beberapa pencapaian utama Akademi pada tahun 1998. Sebagai memenuhi peranannya sebagai pemberi nasihat kepada Kerajaan dalam perkara berkaitan dengan sains, kejuruteraan dan teknologi, Akademi telah memajukan tiga laporan kepada Kerajaan. Satu daripada laporan

❖ Dato' Dr Mazlan Othman (S&T Development and Industry)

- Election of Vice President, Secretary General, Honorary Treasurer and six new Members of the Council
  - ❖ Academician Dato' Ir Lee Yee Cheong FASc (Vice President)
  - ❖ Dato' Dr Salleh Mohd Nor FASc (Secretary General)
  - ❖ Academician Tan Sri Datuk Augustine S.H. Ong FASc (Honorary Treasurer)
  - ❖ Dr Ho Chee Cheong FASc (Council Member)
  - ❖ Prof Datuk Paduka Dr Mustaffa Embong FASc (Council Member)
  - ❖ Ir K Kumarasivam FASc (Council Member)
  - ❖ Dr Chia Swee Ping FASc (Council Member)
  - ❖ Prof Dr Abdul Latif Ibrahim FASc (Council Member)
  - ❖ Dr Mohamed Ariff Nun FASc (Council Member)

At the end of the Annual General Meeting, the President delivered the Presidential Address. The President highlighted some of the Academy's major achievements in 1998. In fulfilling the role of providing advice to the Government on matters related to science, engineering and technology, the Academy had

tersebut adalah mengenai "'Malaysia's Natural Resources Management: An Integrated Approach". Laporan lain adalah satu laporan khas mengenai isu krisis air bertajuk "The Water Crisis: A Compelling Case for Integrated Water Resources Management in Malaysia". Laporan mengenai "Designing Science Education for Competitiveness: Recommendations on Measures to Increase Student Enrolment in Science in Malaysia" dimajukan kepada Menteri Pendidikan.

Syarahan Perdana Akademi pada tahun 1998 bertajuk "Recent Development on Vibrational Spectroscopy of Ionic Clusters" disampaikan oleh Prof Lee Yuan Tseh, Presiden Academia Sinica Taiwan dan Pemenang Anugerah Nobel dalam bidang Kimia pada tahun 1986.

Syarahan PETROSAINS-ASM 1998 dilancarkan oleh Timbalan Menteri Pendidikan, YB Dato' Khalid Yunus. Fasa I Syarahan tersebut yang merangkumi Kuala Lumpur, Shah Alam, Seremban, Ipoh dan Melaka berkahir pada bulan Oktober 1998 dan mendapat sambutan yang memberangsangkan dari guru-guru dan para pelajar. Fasa II Syarahan tersebut akan bermula pada bulan Mei, 1999.

Presiden juga mengumumkan bahawa Akademi telah menjayakan Persidangan Mejabulat Sains, Kejuruteraan dan Teknologi APEC

presented three reports to the Government. One is the study on "Malaysia's Natural Resources Management: An Integrated Approach". Another is a special report to the Government on the issue of water crisis entitled "The Water Crisis: A Compelling Case for Integrated Water Resources Management in Malaysia". The report on "Designing Science Education for Competitiveness: Recommendations on Measures to Increase Student Enrolment in Science in Malaysia" was presented to the Minister of Education.

The Academy's 1998 Annual Oration entitled "Recent Development in Vibrational Spectroscopy of Ionic Clusters" was delivered by Prof Lee Yuan Tseh, President of Academia Sinica Taiwan and Nobel Laureate in Chemistry in 1986.

The PETROSAINS-ASM 1998 Lecture was launched by the Deputy Minister of Education, YB Dato' Khalid Yunus. Phase I of the lecture which covered Kuala Lumpur, Shah Alam, Seremban, Ipoh and Melaka was completed in October 1998 and received overwhelming response from the teachers and students. The Phase II of the lecture would begin in May, 1999.

The President also mentioned that the Academy had successfully concluded an APEC Science, Engineering and Technology

untuk membincangkan "Agenda APEC untuk Kerjasama Industri Sains, Kejuruteraan dan Teknologi dalam Abad ke 21". Deklarasi dan Laporan mejabulat tersebut dimajukan kepada YB Dato' Seri Rafidah Aziz, Menteri Perdagangan Antarabangsa dan Industri untuk dimasukkan ke dalam Agenda APEC.

Akademi terlibat dalam banyak seminar dan persidangan antarabangsa dan juga berpeluang untuk menjadi hos kepada ramai pelawat penting disepanjang tahun.

Presiden mendorong Fellow Akademi untuk meluangkan masa mereka kearah mencapai objektif Akademi melalui penglibatan yang aktif di dalam aktiviti-aktiviti Akademi dan untuk mencurahkan pengetahuan dan pengalaman mereka kepada masyarakat saintifik di Malaysia amnya.

Sebagai menyahut cabaran oleh Perdana Menteri kepada masyarakat saintifik negara untuk menghasilkan Pemenang Anugerah Nobel pada tahun 2020, Kementerian Sains, Teknologi dan Alam Sekitar telah mengajak Akademi untuk bekerjasama menghasilkan satu agenda bagaimana untuk mencapai kecemerlangan di dalam bidang sains.

Presiden juga merakamkan penghargaan kepada Universiti Putra Malaysia kerana telah memberi sebidang tanah di Serdang, Selangor kepada Akademi. Presiden menggulung ucapannya dengan

Roundtable Meeting to discuss "APEC Agenda for Science and Technology Industry Co-operation into the 21st Century". The Declaration and Report of the roundtable was forwarded to the Honorable Dato' Seri Rafidah Aziz, Minister of International Trade and Industry for inclusion into the APEC agenda.

The Academy has been actively involved in many international meetings and conferences and also had the privilege to host many important visitors throughout the year.

The President urged the Fellows of the Academy to apportion some of their valuable time towards furthering the objectives of the Academy through active participation in its activities and to impart their knowledge and experience to the Malaysian scientific community in general.

Arising from the challenge thrown by the Prime Minister to the scientific community to produce a Nobel Laureate by the year 2020, the Ministry of Science, Technology and the Environment has approached the Academy for possible collaboration to develop an agenda to achieve excellence in science.

The President also expressed his gratitude to Universiti Putra Malaysia for generously allocating a piece of land to the Academy in Serdang, Selangor. The President

merakamkan terima kasih kepada semua Fellow di atas sokongan dan sumbangan mereka dan kepada Sekretariat Akademi di atas tugas mereka yang cemerlang.

concluded his Address by thanking all the Fellows for their support and contribution and to the Secretariat for their excellent work.



Fellow menghadiri Mesyuarat Agung Tahunan Keempat
Fellows attending the 4th Annual General Meeting

Majlis Makan Malam Tahunan 1999
Annual Dinner 1999

Akademi Sains Malaysia menganjurkan Majlis Makan Malam Tahunannya yang Kelima pada 15 Ogos 1999 di Hotel Sheraton Imperial, Kuala Lumpur. Majlis tersebut dihadiri oleh YAB Timbalan Perdana Menteri Malaysia, Dato' Seri Abdullah Ahmad Badawi. Majlis tersebut juga dihadiri oleh YB Timbalan Menteri Sains, Teknologi dan Alam Sekitar, Datuk Abu Bakar Daud.

Seramai lebih kurang 370 tetamu yang terdiri dari Fellow Akademi, Ketua dan Pegawai Agensi Kerajaan, Kapten Industri dan Ketua Komuniti

The Academy of Sciences Malaysia held its Fifth Annual Dinner on 15 August 1999 at the Sheraton Imperial Hotel, Kuala Lumpur. The occasion was graced by the Rt Hon Deputy Prime Minister of Malaysia, Dato' Seri Abdullah Ahmad Badawi. The dinner was also honoured by the presence of the Deputy Minister of Science, Technology and the Environment, the Hon Datuk Abu Bakar Daud.

About 370 guests comprising Fellows of the Academy, Heads and Officials of Government Agencies and Ministries, Captains of Industry



Tetamu Kehormat di Majlis Makan Malam Tahunan ASM
Guests of Honour at the ASM Annual Dinner

Saintifik menghadiri Majlis Makan Malam tersebut.

Acara kemuncak pada malam itu adalah Ucapan Tahunan oleh Timbalan Perdana Menteri, Ucapan Presiden, penganugerahan Sijil Fellowship kepada Fellow Kanan dan sepuluh Fellow baru Akademi dan pelancaran Program Penyelidikan Malaysia-Antartika.

Ucapan Tahunan yang disampaikan oleh Timbalan Perdana Menteri antara lain mengutarakan perlunya para saintis dan ahli teknologi Malaysia berdayasaing di peringkat antarabangsa untuk membolehkan Malaysia menjadi sebahagian daripada proses inovasi global; untuk Akademi menerajui promosi dan penubuhan Kerjasama P&P Antarabangsa dalam bidang sains, kejuruteraan dan teknologi yang mana pihak Kerajaan bersetuju untuk menyediakan sumber yang diperlukan dan untuk memainkan peranan sebagai penasihat kepada Kementerian Pendidikan dalam usaha mengulas dan menyediakan kurikulum yang sesuai untuk pendidikan sains, kejuruteraan dan teknologi di sekolah dan untuk Akademi membuat ulasan yang terperinci bagi Polisi S&T Teknologi Kebangsaan. Timbalan Perdana Menteri juga melahirkan sokongannya terhadap cadangan penubuhan Pusat Sumber Sains dan Teknologi Kebangsaan.

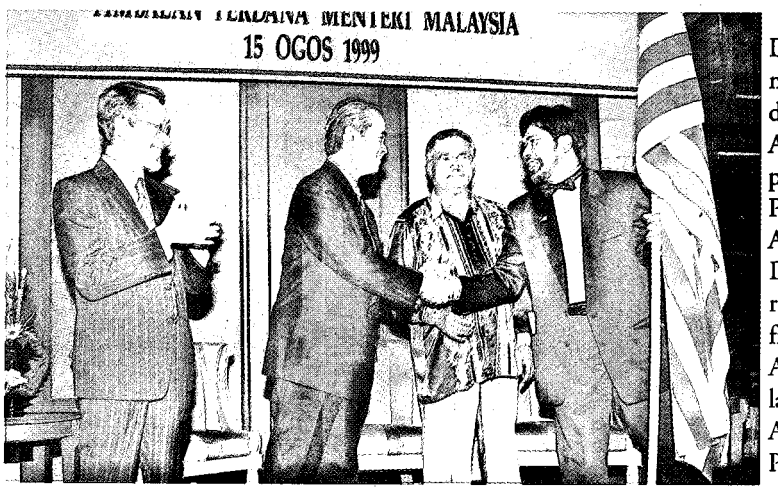
Akademi juga buat pertama kalinya menyaksikan penganugerahan Sijil Fellow oleh Timbalan Perdana Menteri kepada

and Scientific Community Leaders attended the dinner.

The highlights of the evening were the Deputy Prime Minister's Annual Address to the Academy, the President's Address, conferment of Fellowship Certificates to ASM Senior Fellows and ten new Fellows and launching of the Malaysia-Antarctica Research Programme.

The Annual Address delivered by the Deputy Prime Minister stated among others the need for Malaysian scientists and technologists to be competitive on the global stage in order for Malaysia to be part of the global innovation process; for the Academy to take the lead in promoting and establishing International R&D Collaboration in SET for which the Government would be willing to allocate necessary resources and to play a consultative role to the Ministry of Education in reviewing and developing appropriate curriculum for SET education in schools and for the Academy to be thorough in its task in reviewing the National S&T Policy. The Deputy Prime Minister also expressed his support on the proposed establishment of the National Science and Technology Resource Centre.

The Academy also for the first time saw the conferment of Fellowship Certificates by the Deputy Prime Minister to four Senior Fellows who were elected based on their outstanding



Dr Azizan Abu Samah menerima bendera Malaysia dari YAB Dato' Seri Abdullah Ahmad Badawi sebagai tanda pelancaran Program Penyelidikan Malaysia-Antartika

Dr Azizan Abu Samah receiving the Malaysian flag from YAB Dato' Seri Abdullah Ahmad Badawi to mark the launching of the Malaysia-Antarctica Research Programme

empat 'Fellow Kanan' yang dilantik berdasarkan sumbangan mereka yang cemerlang di dalam bidang sains, kejuruteraan dan teknologi untuk kebaikan negara dan manusia sejagat. Fellow Kanan mendapat gelaran 'Academician'. Pemilihan Fellow Kanan dilaksanakan oleh Panel Khas yang dipengerusikan oleh Tan Sri Dato' Seri Ahmad Sarji Abdul Hamid. Pada tahun 1999 Fellow Kanan yang dilantik terdiri daripada Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc, Academician Dato' Ir Lee Yee Cheong FASc, Academician Dr M.K. Rajakumar FASc dan Academician Tan Sri Datuk Dr Augustine S.H. Ong FASc.

YAB Dato' Seri Abdullah Ahmad Badawi juga menyampaikan Sijil Fellow kepada sepuluh Fellow baru yang dilantik. Selepas penyampaian Sijil Fellow kepada Fellow Kanan dan Fellow baru Akademi, Timbalan Perdana Menteri melancarkan dengan rasminya Program Penyelidikan dan Pembangunan di Antartika.

contributions and achievements in the areas of SET for the benefit of the nation and the humankind. The Senior Fellows are entitled to be called 'Academician'. The selection of the Senior Fellows was done by a Special Panel chaired by Tan Sri Dato' Seri Ahmad Sarji Abdul Hamid. In 1999 the Senior Fellows elected are Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc, Academician Dato' Ir Lee Yee Cheong FASc, Academician Dr M.K. Rajakumar FASc and Academician Tan Sri Datuk Dr Augustine S.H. Ong FASc.

The Right Honorable Dato' Seri Abdullah Ahmad Badawi also presented the Fellowship Certificates to the ten newly elected Fellows. After the conferment of the Fellowship certificates to the Senior Fellows and new Fellows of the Academy, the Deputy Prime Minister officially launched the Malaysian R&D Programme in the Antarctica.



AKTIVITI-AKTIVITI
ACTIVITIES

AKTIVITI-AKTIVITI

Akademi Sains Malaysia, yang ditubuhkan empat 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:

1. Untuk memberi nasihat kepada Kerajaan mengenai perkara-perkara yang berkepentingan nasional
2. Untuk merangsang budaya kecemerlangan dalam bidang sains, kejuruteraan dan teknologi di Malaysia
3. Untuk membantu meningkatkan keupayaan industri di Malaysia dalam bidang teknologi
4. Untuk menggalakkan kesedaran umum tentang kepentingan sains, kejuruteraan dan teknologi dalam kehidupan seharian
5. Untuk menggalakkan dan mengkordinasikan Kerjasama dan Usahasama Antarabangsa dalam bidang penyelidikan

ACTIVITIES

The Academy of Sciences Malaysia, which was established four 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 its given mission, the Academy organized its activities based on the following thrust areas:

1. To provide advice to Government on matters related to science, engineering and technology which are of national importance
2. To foster a Culture of Excellence in the SET in Malaysia
3. To assist in upgrading the technological capability and competency of Malaysian industries
4. To promote public awareness on the importance of SET in everyday life
5. To facilitate and coordinate International Collaboration and Cooperation in research

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 1999, Akademi telah menjalankan aktiviti berikut:

Kajian Semula Polisi Sains dan Teknologi Kebangsaan

Kementerian Sains, Teknologi dan Alam Sekitar meminta Akademi Sains Malaysia untuk mengkaji semula Polisi Sains dan Teknologi Kebangsaan yang digubal pada tahun 1986. Dato' Dr Yusof Basiron FASc telah ditugaskan untuk mengetuai satu kumpulan yang dianggotai oleh pakar dari institusi dan organisasi penting. Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc, Presiden Akademi Sains Malaysia yang juga Penasihat Sains Kepada Perdana Menteri mengkoordinasi dan memberi panduan kepada projek tersebut.

Objektif utama proses kajian semula adalah:

(a) untuk mengkaji semula secara kritikal Polisi Sains dan Teknologi Kebangsaan dan menilai kesesuaian dan kaitannya dalam memenuhi matlamat negara sejajar dengan perubahan ekonomi, teknologi dan transformasi sosial.

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. In 1999, the Academy has carried out the below-mentioned activities:

National Science and Technology Policy Review

The Ministry of Science, Technology and the Environment requested the Academy of Sciences Malaysia to undertake the review of the National Science and Technology Policy that was first formulated in 1986. Dato' Dr Yusof Basiron FASc was entrusted to lead a team of experts from various key institutions and organisations. Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc, the President of the Academy and also the Science Advisor to the Prime Minister provided the coordination and guidance to the project.

The primary objectives of this review process are:

(a) to critically review the current National SET Policy and assess its appropriateness and relevance in meeting national goals in line with changing economic, technological and social transformations;

(b) untuk mencadangkan Polisi Sains dan Teknologi Kebangsaan dan Pelan Tindakan untuk jangkamasa 2001-2010 berdasarkan penilaian diatas dengan penekanan pada langkah-langkah praktikal dan efektif kearah pembangunan keupayaan sains, kejuruteraan dan teknologi untuk ekonomi yang berdayasaing dan berlandaskan pengetahuan serta peningkatan kualiti hidup masa depan.

Didalam usaha mengkaji semula polisi, Akademi menggunakan kepakaran para Fellow yang menjadi teras usaha kajian semula Polisi Sains dan Teknologi Kebangsaan. Sumber lain dijana daripada institusi berkaitan seperti UM, UTM, UUM, UMS, MIGHT, MIMOS, MIER dan lain-lain pakar dari dalam dan luar negara.

Untuk lebih menguatkan analisis tersebut dan untuk berkongsi pengalaman, Akademi menganjurkan beberapa sesi 'brainstorming' dan seminar. Sebanyak 13 sesi 'brainstorming' dengan pelbagai disiplin sains dan satu seminar kebangsaan dan dua seminar antarabangsa telah dianjurkan.

Seminar Antarabangsa "Challenges and Issues in Science, Engineering and Technology in a Knowledge-Driven Economy" diadakan dari 30 November – 1

(b) to recommend a new National SET Policy and Action plan for the period 2001-2010 based on assessments above with emphasis on practical and effective measures towards the development of SET capabilities for a competitive and knowledge-driven economy as well as the enhancement of the nation's future quality of life.

Para peserta di Seminar Antarabangsa "Challenges and Issue in Science, Engineering and Technology"
Participants at the International Seminar on Challenges and issues in Science, Engineering and Technology



In undertaking the review process, the Academy drew relevant expertise from within its Fellows. These Fellows formed the core for the review of the National SET Policy. Additional resources were harnessed from the relevant institutions such as UM, UTM, UUM, UMS, MIGHT, MIMOS, MIER and other experts from overseas and from within the country.

To further strengthen the analysis and to share experiences, the Academy organized a series of brainstorming sessions and seminars. A total of 13 brainstorming sessions with the various disciplines of sciences and one national and two international seminars were organized.

The International Seminar on "Challenges and Issues in Science,

Disember 1999 di Hotel Park Plaza, Kuala Lumpur. Ia dihadiri oleh lebih kurang 100 peserta. Satu bengkel "Development and Enhancement of Research and Scientific Culture" diadakan pada 4 November 1999 di Hotel Shah Village, Petaling Jaya. Lebih kurang 60 peserta menghadiri bengkel tersebut. Perbincangan bertumpu kepada bagaimana untuk mengembangkan dan mempertingkatkan mutu penyelidikan serta membina budaya sains di kalangan saintis Malaysia. Proses kajian semula itu juga menggunakan sumber dan kepakaran daripada Commonwealth Partnership for Technology Management (CPTM). Akademi juga bekerjasama dengan MIGHT menganjurkan seminar kebangsaan untuk menyediakan kerangka bagi Sistem Inovasi Kebangsaan (NIS). Hasil daripada semua aktiviti ini digunakan oleh Akademi untuk menguatkan inputnya didalam proses kajian semula ini.

Akademi juga menganjurkan satu ceramah oleh Mr Ted Harley dari Jabatan Perdagangan dan Industri, UK yang dihadiri oleh Fellows Akademi, ahli Jawatankuasa Petugas kajian semula polisi dan wakil badan-badan Kerajaan dan swasta yang dijemput. Ceramah yang disampaikan bertajuk "Our Competitive Edge: Building Knowledge-Driven Economy" menekankan tentang respons UK terhadap ekonomi berlandaskan pengetahuan.

Selain dari itu, Akademi juga melibatkan organisasi dan badan

Engineering and Technology in a Knowledge-Driven Economy" was held from 30 November – 1 December 1999 at the Park Plaza Hotel, Kuala Lumpur. It was attended by about 100 participants. A workshop on "Development and Enhancement of Research and Scientific Culture" was held on 4 November 1999 at Shah's Village Hotel, Petaling Jaya. About 60 participants attended the workshop. Discussions were focused on how to develop and enhance research and build scientific culture among Malaysian scientists. The review process also drew considerable resources and expertise from the Commonwealth Partnership for Technology Management (CPTM). The Academy collaborated with MIGHT in a national seminar to draw up the framework for a National Innovation System (NIS) The outputs from these activities were used by the Academy to strengthen its input in the review process.

The Academy hosted a talk by Mr Ed Harley of the Department of Trade and Industry, UK to Fellows of the Academy, members of the review task force and invited representatives of government and private sector organizations on the subject "Our Competitive Edge: Building Knowledge-Driven Economy". The talk highlighted how UK responded to the knowledge driven economy.

In addition the Academy has been very active to engage other organizations and professional

professional lain dalam perundingan untuk menggabungkan idea dan buah fikiran. Jawatankuasa Petugas ini juga terlibat dengan Science and Technology Committee of the National Economic Consultative Committee II (NECC II) untuk memastikan bahawa terdapat penjajaran polisi di mana berkaitan dengan sains, kejuruteraan dan teknologi.

Akademi telah memajukan laporan awal kepada Kementerian Sains, Teknologi dan Alam Sekitar. Laporan akhir kajian semula Polisi Sains dan Teknologi Kebangsaan akan diserahkan pada bulan April 2000.

Seminar "Future Directions and Business Opportunities in Food Production in Natural Agriculture Policy III (NAP3)"

Seminar "Future Directions and Business Opportunities in Food Production in NAP3" diadakan dari 15–16 November 1999 di Hotel Legend, Kuala Lumpur. Ia dihadiri seramai lebih kurang 100 peserta dan dirasmikan oleh Menteri Pertanian, YB Datuk Amar Dr Sulaiman Daud. Pengerusi Jawatankuasa Penganjur, Dato' Dr Abdul Aziz S.A. Abdul Kadir FASc menyampaikan ucapan dan ucaptama Menteri. Akademi diwakili oleh Setiausaha Agung, Dato' Dr Salleh Mohd Nor FASc yang menyampaikan ucapan pembukaan. Empat ucaptama dan lapan kertaskerja dibentangkan semasa seminar tersebut. Satu

bodies in consultations to consolidate ideas and opinions. The review team was also involved at certain stages with the Science and Technology Committee of the National Economic Consultative Committee II (NECC II) to ensure policy alignment as far as science, engineering and technology are concerned.

The Academy has already submitted the inception report to the Ministry of Science, Technology and the Environment. The final report of the review of the National Science and Technology Policy will be due for submission in April 2000.

Seminar On "Future Directions And Business Opportunities In Food Production In Natural Agriculture Policy III (NAP3)"

The Seminar on "Future Directions and Business Opportunities in Food Production in NAP3" was held from 15–16 November 1999 at the Legend Hotel, Kuala Lumpur. It was attended by about 100 participants and officiated by the Minister of Agriculture, YB Datuk Amar Dr Sulaiman Daud. The Chairman of the Organizing Committee, Dato' Dr Abdul Aziz S.A. Kadir FASc delivered the speech and keynote address of the Minister. The Academy was represented by its Secretary General, Dato' Dr Salleh Mohd Nor FASc who delivered the welcome address. Four keynote addresses and eight papers were presented at the Seminar. A

perbincangan mejabulat mengikut format 'Langkawi Dialogue' diadakan untuk setiap sesi. Hasil yang dijangkakan dari seminar ini adalah satu laporan khas kepada Kerajaan yang mengandungi usul dan pelan tindakan bagi prospek masa depan industri makanan dan pertanian di Malaysia.

Forum "Pengklonan Manusia – Satu Perspektif Islam"

Akademi Sains Malaysia mendapat jemputan dari Institut Kefahaman Islam Malaysia (IKIM) untuk mengambil bahagian dalam Forum yang bertajuk "Pengklonan Manusia – Satu Perspektif Islam". Forum tersebut diadakan di Dewan Besar, IKIM pada 26 Ogos 1999. Prof Dr Looi Lai Meng FASc membentangkan kertaskerja yang bertajuk "Cloning – The Science of the Possible". Di dalam kertaskerja beliau membincangkan isu pengklonan dari perspektif sains. Dr Abu Bakar Abdul Majeed, Fellow Kanan IKIM membentangkan kertas kerja bertajuk "Pengklonan – Mencabar Ketentuan Tuhan?". Pembentangan beliau bertumpu kepada isu pengklonan manusia dari perspektif Islam. Perbincangan yang diadakan merumuskan bahawa isu pengklonan manusia haruslah diselesaikan atau ditangani melalui konsensus di antara semua pakar termasuk para ulama, saintis dan ahli perubatan. Satu laporan mengenai isu pengklonan ini dari perspektif sains dan Islam di dalam konteks negara akan disediakan.

roundtable discussion following the 'Langkawi Dialogue' format was organized for each of the three sessions. The expected outcome of the seminar is a special report to the Government containing recommendations and action plans on "Future Prospects for the Food and Agriculture Industries in Malaysia".

Forum on "Pengklonan Manusia – Satu Perspektif Islam"

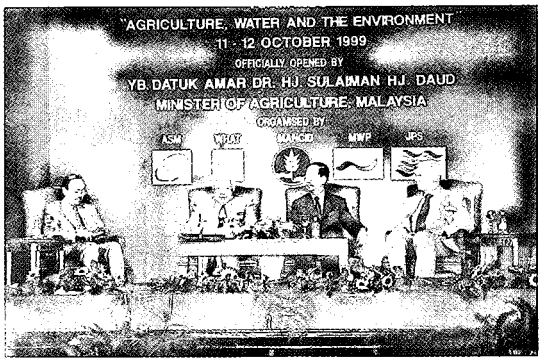
At the invitation of Institut Kefahaman Islam Malaysia (IKIM), the Academy of Sciences Malaysia participated in the Forum "Pengklonan Manusia – Satu Perspektif Islam". The Forum was held at Dewan Besar, IKIM on 26 August 1999. Prof Dr Looi Lai Meng FASc presented a paper on "Cloning – The Science of the Possible". In her paper she dealt with the scientific aspect of cloning. Dr Abu Bakar Abdul Majeed, Senior Fellow of IKIM presented a paper entitled "Pengklonan Manusia – Mencabar Ketentuan Tuhan?". His presentation was focused on the issue of human cloning from the perspective of Islam. From the discussion it can be summarized that issues of human cloning need to be resolved through consensus among experts including Islamic scholars, scientists and medical personnel. A report on the issue of cloning from both the scientific and Islamic perspectives in the national context will be prepared.

Pengurusan Kualiti Air

Akademi dengan kerjasama World Humanity Action Trust (WHAT), Malaysian National Committee on Irrigation and Drainage (MANCID) dan Malaysian Water Partnership (MWP) menganjurkan forum sehari pada 11 Oktober 1999 di Hotel Legend, Kuala Lumpur. Forum tersebut dirasmikan oleh YB Datuk Amar Dr Hj Sulaiman Hj Daud, Menteri Pertanian Malaysia. Seramai lebihkurang 100 peserta menghadiri forum tersebut yang menyediakan satu landasan bagi pertukaran pengetahuan dan maklumat serta berkongsi pengalaman tentang amalan terbaik dan tindakan yang membawa perubahan untuk keselamatan dan pemulihan kualiti sumber air kita. Forum tersebut mengumpulkan tenaga dalam bidang tersebut dari dalam dan luar negara yang membentangkan kertas kerja masing-masing dan mengadakan perbincangan mengenai topik Pengurusan Kualiti Air. Ucaptama disampaikan oleh Prof Janusz Kindler, Commission Member dan Dekan, Fakulti Kejuruteraan Alam Sekitar, Universiti Teknologi Warsaw, Poland. Forum tersebut memberi, input dan perspektif kepada 'global water vision'.

Water Quality Management

The Academy in collaboration with World Humanity Action Trust (WHAT), the Malaysian National Committee on Irrigation and "Drainage (MANCID) and Malaysian Water Partnership (MWP) organized a one day forum on 11 October 1999 at the Legend Hotel, Kuala Lumpur. The forum was officiated by YB Datuk Amar Dr Hj Sulaiman Hj Daud, Minister of Agriculture, Malaysia. About 100 participants attended the forum which provided a platform for exchange of knowledge and information and sharing experiences regarding best practices and innovative action towards the protection and restoration of the quality of our freshwater resources. The forum brought together international and local experts who presented papers and held discussions on the topic of Water Quality Management. The keynote address was delivered by Prof Janusz Kindler, Commission Member and Dean, Faculty of Environmental Engineering, Warsaw University of Technology, Poland. The Forum provided the national input and perspective into the global water vision.



YB Datuk Amar Dr Hj Sulaiman Hj Daud semasa perasmian Forum
YB Datuk Amar Dr Hj Sulaiman Hj. Daud during the opening of the Forum

Simposium "Towards A Mosquito-Safe Environment"

Simposium "Towards A Mosquito-Safe Environment" selama dua hari dianjurkan oleh Akademi Sains Malaysia di Hotel Legend, Kuala Lumpur dari 29-30 Jun 1999. Simposium ini mengumpulkan pakar-pakar dalam bidang biologi dan kawalan nyamuk untuk membentangkan penemuan dan pengalaman mereka kepada pemaju, perancang bandar, pengurus hotel dan tempat peranginan, industrialis dan mereka yang inginkan kawasan mereka bebas dari nyamuk. Simposium ini dihadiri oleh 150 peserta yang diakhir simposium belajar bagaimana untuk mengenalpasti jenis nyamuk, memahami risiko yang terdedah kepada mereka, dan berpengetahuan bagaimana untuk melaksanakan langkah kawalan.

Hasil dari simposium tersebut, selain dari perbincangan dan bahan-bahan edaran adalah buku saintifik mengenai subjek yang dibincangkan yang mana akan dijadikan sebagai teks rujukan dalam usaha menjadikan alam sekitar kita selamat dari nyamuk. Ia juga akan menjadi sumber nasihat dan memberi maklumat teknikal kepada pemaju, pembina bangunan, arkitek, pereka seni taman, industrialis dan ramai lagi. Untuk orang awam termasuk sekolah, satu buku berillustrasi yang kurang teknikal dibandingkan dengan kertaskerja Simposium adalah di dalam perancangan untuk dihasilkan.

Symposium "Towards A Mosquito-Safe Environment"

A two-day symposium on "Towards a Mosquito-Safe Environment" was organized by the Academy of Sciences Malaysia at the Legend Hotel, Kuala Lumpur from 29-30 June 1999. The symposium brought together experts on mosquito biology and control, to present their findings and experiences to developers, builders, architects, planters, landscapers, town planners, hoteliers, resort managers, industrialists and others who want to keep their domains mosquito-safe. It was attended by 150 participants who at the end of the symposium had learned how to identify the different kinds of mosquitoes, understand the risks they are exposed to, and be sufficiently knowledgeable to implement control measures.

The outcome of the symposium, apart from the discussions and the materials distributed at the symposium, would be a scientifically authoritative book on the subject which would be a reference text in making our environment mosquito-safe. It would also be a source of advice and would provide the technical information to the developers, builders, architects, landscapers, industrialists and many others. For the general public, including schools, a separate illustrated book is being planned which will be less technical than the Symposium papers.

PROGRAM KECEMERLANGAN SAINS

Objektif Program Kecemerlangan Sains adalah untuk menanam Budaya Cemerlang di dalam bidang sains, kejuruteraan dan teknologi di Malaysia. Adalah penting bagi negara kita menghasilkan saintis dan ahli teknologi generasi baru yang diharapkan dapat menerajui kemajuan penyelidikan, pembangunan dan inovasi. Tahun 1999 menyaksikan banyak aktiviti yang menarik dianjurkan oleh Akademi dibawah program ini. Sebagai ringkasan, Akademi menganjurkan Syarahan Perdana, lima syarahan, dua forum, dua bengkel, satu simposium, satu perbincangan, satu Syarahan Memorial dan menganugerahkan dua geran penyelidikan. Selain dari itu, Akademi juga sedang menyediakan kertas cadangan bagaimana Malaysia dapat menghasilkan pemenang anugerah Nobel pada tahun 2020.

Cadangan Bagaimana Untuk Menghasilkan Pemenang Anugerah Nobel Malaysia pada Tahun 2020

Sebagai menyahut cabaran YAB Perdana Menteri Malaysia kepada masyarakat saintifik negara untuk menghasilkan pemenang anugerah Nobel pada tahun 2020, Kementerian Sains, Teknologi dan Alam Sekitar telah mengambil inisiatif untuk menghasilkan pelan

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. It is important for our country to produce a next generation of scientists, engineers and technologists on whom the nation will depend for major advances in research, development and innovation. The year 1999 saw many interesting activities being carried out by the Academy under this programme. In summary, the Academy held an oration, five lectures, two fora, two workshops, a symposium, a discussion, a Memorial Lecture and awarded two research grants. In addition to that, the Academy is also preparing a proposal on "How to Get a Malaysian Nobel Laureate by the Year 2020".

A Proposal on "How To Get a Malaysian Nobel Laureate by the Year 2020"

Arising from the challenge thrown to the scientific community by the Right Honorable Prime Minister to produce a Nobel Laureate by the year 2020, the Ministry of Science, Technology and the Environment had taken the initiative to draw a plan of action to realize the challenge. The Ministry of Science,

tindakan untuk menyahut cabaran tersebut. Kementerian meminta Akademi menyediakan kertas konsep Pelan Tindakan bagaimana untuk menghasilkan pemenang anugerah Nobel Malaysia pada tahun 2020. Kertas konsep tersebut harus mengandungi perkara tersebut:

(1) Untuk mencadangkan pelan tindakan yang dapat memupuk dan mengembangkan bakat tempatan dan teknologikal dengan tujuan untuk menghasilkan Pemenang Anugerah Nobel pada tahun 2020.
(2) Untuk membantu perancangan Program Penyelidikan khas di dalam dan luar Malaysia dengan tujuan untuk menggalakkan penyelidikan oleh rakyat Malaysia yang berkebolehan di dalam bidang-bidang yang dapat menghasilkan manafaat yang banyak kepada manusia sejagat
(3) Untuk meninjau keperluan khas infrastruktur penyelidikan yang dapat meningkatkan usaha menghasilkan penyelidik bertaraf antarabangsa
(4) Untuk membantu merancang program promosi khas yang akan menjadi asas kepada penghasilan Saintis Malaysia yang inovatif, bermotivasi dan "research minded" yang akan menjadi Pemenang Anugerah Nobel dimasa hadapan
(5) Untuk memastikan mekanisma perlaksanaan Pelan Tindakan

Technology and the Environment has requested the Academy to prepare a concept paper on a Plan of Action to produce a Nobel Laureate by the year 2020. The concept paper is to include the following:

(1) To suggest a plan of action which can nurture and develop local and technological talents with the aim of producing a Nobel Laureate by the year 2020
(2) To help in planning special Research Programmes in and outside Malaysia with the aim of encouraging research by talented Malaysians in areas which can confer the greatest benefit to mankind
(3) To look into special research infrastructural needs which can enhance the efforts in producing world class researchers
(4) To help planning special promotion programmes to lay the foundation for the creation of innovative, motivated and research minded Malaysian Scientists who could be our future Nobel Laureates
(5) To determine a mechanism to implement the Plan of Action taking into consideration the roles of

yang mengambilkira peranan agensi Kerajaan, Badan Bukan Kerajaan dan Badan Korporat

(6) Untuk memastikan kewangan yang diperlukan untuk melaksanakan Pelan Tindakan dan mengenalpasti sumber pembiayaan yang mungkin

Sebagai susulan Akademi menubuhkan sebuah Jawatankuasa Petugas untuk mencadangkan aktiviti-aktiviti dan pelan tindakan untuk membolehkan Akademi menghasilkan kertas konsep tersebut. Satu daripada aktiviti tersebut adalah penganjuran syarahan eksklusif bertajuk "Nobel Prize – Its Organization and Strategies: An Exclusive Insight" yang disampaikan oleh Prof Jan S. Nilsson, Presiden, Royal Swedish Academy of Sciences di Akademi Sains Malaysia pada Jumaat, 21 Mei 1999. Syarahan ini dianjurkan dengan kerjasama Royal Swedish Embassy di Kuala Lumpur. Objektif syarahan ini adalah untuk mendapatkan maklumat yang lebih lanjut berkenaan dengan pengurusan dan penyusunan anugerah yang berprestij ini dan untuk mendedahkan komuniti sains Malaysia dengan pengurusan dan pemilihan Anugerah Nobel. Syarahan dipengerusikan oleh Presiden Akademi Sains Malaysia, Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc. Didalam syarahannya Prof Jan S. Nilsson mengimbas sejarah penganugerahan Nobel kembali kepada pengasasnya. Syarahan dihadiri oleh lebih kurang 70 peserta.

government agencies, NGOs and corporate bodies

(6) To determine the budget required to implement the Plan of Action and to identify possible sources of funding

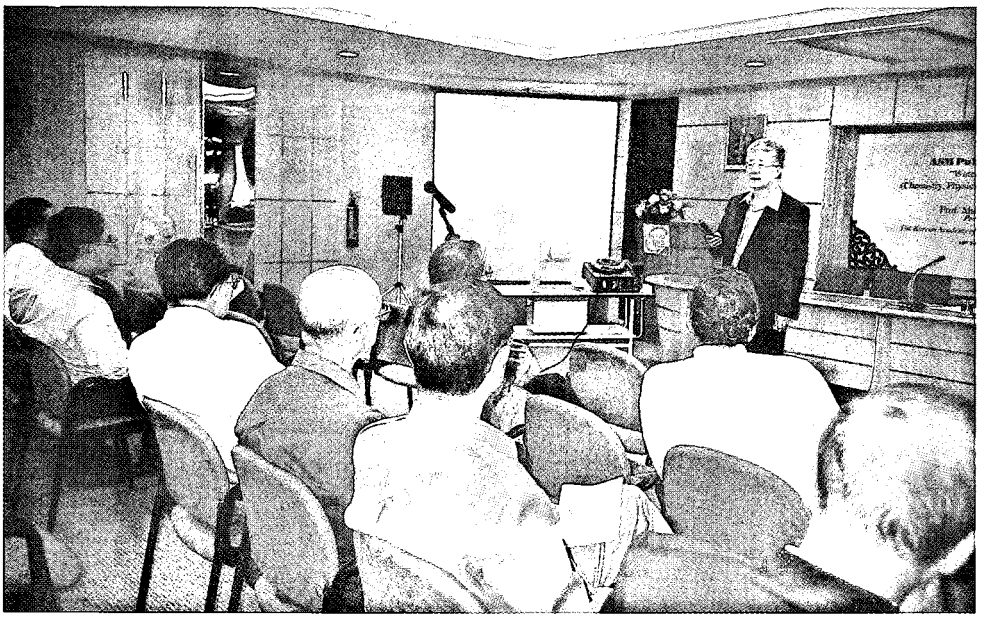
As a follow up the Academy had set up a Task Force to propose activities and line of action that would enable the Academy to come up with the concept paper. One of the activities was the organization of an exclusive lecture on "Nobel Prize – Its Organization and Strategies: An Exclusive Insight" which was delivered by Prof Jan S. Nilsson, President of the Royal Swedish Academy of Sciences at the Academy of Sciences Malaysia on Friday, 21 May 1999. The lecture was organized in collaboration with the Royal Swedish Embassy in Kuala Lumpur. The objectives of the lecture were to obtain closer insights of the organization and management of these prestigious awards and to expose the Malaysian scientific community on the management and the selection process of the Nobel Prize. The lecture was chaired by the President of the Academy of Sciences Malaysia, Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc. In delivering the lecture Prof Jan S. Nilsson traced the history of the Nobel Prize back to the man himself. The lecture was attended by about 70 participants.

Siri Perbincangan ASM – "Water– The Essence of Life"

Satu ceramah bertajuk "Water – the Essence of Life" disampaikan oleh Prof Emeritus Dr Mu Shik Jhon, Presiden Korean Academy of Sciences and Technology dan Professor dalam bidang Kimia di Korean Advanced Institute of Science and Technology di Dewan Seminar, Akademi Sains Malaysia pada 10 Februari 1999. Prof Jhon adalah pengasas kepada teori air heksagonal dan beliau menumpukan usahanya kearah memahami pertalian diantara air dan kesihatan. Seramai lebih kurang 30 peserta menghadiri ceramah.

ASM Discussion Series – "Water – The Essence of Life"

A talk on "Water – the Essence of Life" was delivered by Prof Emeritus Dr Mu Shik Jhon, President of the Korean Academy of Science and Technology and Professor in Chemistry at the Korean Advanced Institute of Science and Technology, at the Academy Seminar Hall on 10 February 1999. Prof Jhon is the originator of the hexagonal water theory and he also focuses his efforts towards understanding the relationship between water and health. About 30 participants attended the lecture.



Prof Emeritus Dr Mu Shik Jhon delivering the Public Lecture
Prof Emeritus Dr Mu Shik Jhon menyampaikan Syarahan Umum

Geran Penyelidikan Perubatan Dr Ranjeet Bhagwan Singh dan Syarahan Memorial 1999

Pada tahun 1999 Jawatankuasa Pemilihan Geran Penyelidikan Perubatan Dr Ranjeet Bhagwan Singh yang dipengerusikan oleh Dr Narimah Md Awin, Pengarah IMR telah memilih dua daripada 35 permohonan untuk dianugerahkan dengan geran penyelidikan. Mereka adalah Dr Fong Mun Yik dari Universiti Malaya dan Dr Kamarul Ariffin dari Hospital Universiti Kebangsaan Malaysia yang masing-masing menerima RM35,000 dan RM18,000. Geran disampaikan kepada pemenang oleh YB Datuk Abu Bakar Daud, Timbalan Menteri Sains, Teknologi dan Alam Sekitar.

Prof Erling Norrby, Fakulti Prubatan, Karonslika Institute/ Setiausaha Agung Royal Swedish Academy of Sciences menyampaikan Syarahan Memorial Dr Ranjeet Bhagwan Singh yang kedua bertajuk "The New Biology and Medicine' kepada lebih kurang 250 tetamu. Syarahan diadakan pada 22 Mei 1999 di Dewan Ungku Omar, Institut Penyelidikan Perubatan, Kuala Lumpur.

Syarahan Umum ASM

Akademi telah menjemput Pemenang Anugerah Nobel Prof Warner Arber, Presiden, International Council for Science (ICSU) untuk menyampaikan dua syarahan umum pada 25 Ogos 1999. Syarahan pertama bertajuk

Dr Ranjeet Bhagwan Singh Medical Research Fund and Memorial Lecture 1999

In 1999 the Selection Committee of Dr Ranjeet Bhagwan Singh Medical Research Grant, chaired by Dr Narimah Md Awin, Director of IMR, selected two out of 35 applicants to be awarded the research grants. They were Dr Fong Mun Yik from University of Malaya and Dr Kamarul Ariffin Khalid from Hospital Universiti Kebangsaan Malaysia who received RM35,000 and RM18,000 respectively. The grants were presented to the winners by YB Datuk Abu Bakar Daud, Deputy Minister of Science, Technology and the Environment.

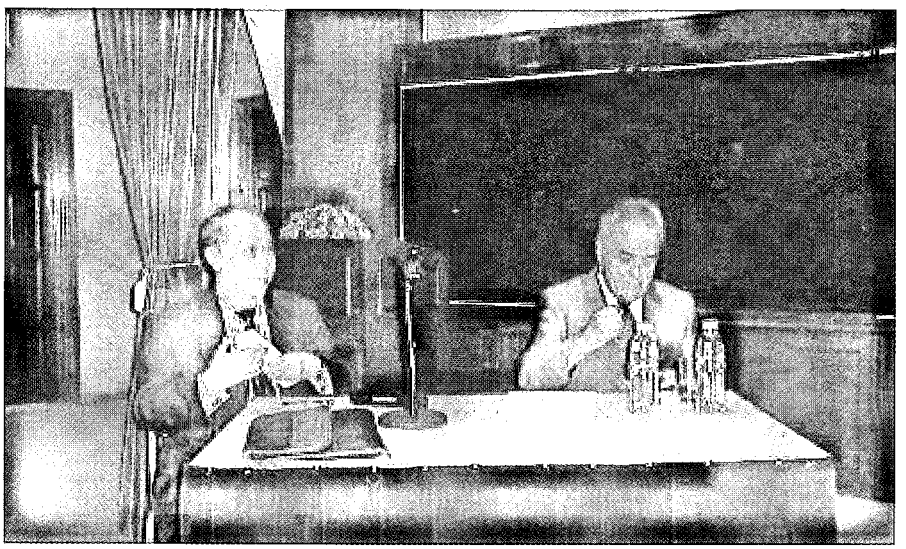
Prof Erling Norrby, Professor, Medical Faculty, Karonslika Institute/Secretary General of the Royal Swedish Academy of Sciences presented the second Dr Ranjeet Bhagwan Singh Memorial Lecture entitled "The New Biology and Medicine" to about 250 guests. The lecture was held on 22 May 1999 at Dewan Ungku Omar, Institute for Medical Research, Kuala Lumpur.

ASM Public Lectures

The Academy invited Nobel Laureate Prof Werner Arber, President, International Council for Science (ICSU) to deliver two public lectures on 25 August 1999. The first lecture on "Molecular Mechanisms of Microbial Evolution" was held at

"Molecular Mechanisms of Microbial Evolution" diadakan di Pusat Sains Negara. Ia dihadiri oleh 250 peserta yang terdiri daripada penyelidik, professor, guru-guru sains dan wakil badan-badan professional SET. Syarahan kedua bertajuk "Roots and Prospects of Molecular Genetic" diadakan di Auditorium Teknologi Pendidikan, Persiaran Bukit Kiara. Penonton seramai 400 orang terdiri daripada pelajar, guru-guru dan pegawai dan Kementerian Pendidikan termasuk Ketua Pengarah Pendidikan, YBhg Dato' Dr Abdul Shukor Abdullah.

the National Science Centre. It was attended by about 250 participants comprising researchers, professors, science teachers, and representatives of professional SET bodies. The second public lecture on "Roots and Prospects of Molecular Genetics" was held at the Auditorium Teknologi Pendidikan, Persiaran Bukit Kiara. The audience included 400 students, teachers and officials from the Ministry of Education including the Director General of Education YBhg Dato' Dr Abdul Shukor Abdullah.



Prof Werner Arber bersama dengan Academician Tan Sri Datuk Dr Augustine S.H. Ong semasa Syarahan Umum di Auditorium Teknologi Pendidikan
Prof Werner Arber with Academician Tan Sri Datuk Dr Augustine S.H. Ong during the Public Lecture at the Auditorium Teknologi Pendidikan

The Current Status Of Research in HIV
Prof John Mills, Pengarah, Macfarlane Burnet Centre (MBC), Medical Research, Melbourne, Australia menyampaikan syarahan umum bertajuk "The Current Status of Research in HIV" pada 26 Oktober 1999 di Hospital Universiti Kebangsaan Malaysia (HUKM), Kuala Lumpur. Seramai lebih kurang 80 tetamu menghadiri syarahan tersebut yang dipengerusikan oleh Tan Sri Datuk Dr Mustaffa Babjee FASc.

The Current Status Of Research in HIV
Prof John Mills, Director, Macfarlane Burnet Centre (MBC) for Medical Research, Melbourne, Australia delivered a public lecture on "The Current Status of Research in HIV" on 26 October 1999 at Hospital Universiti Kebangsaan Malaysia (HUKM), Kuala Lumpur. About 80 guests attended the lecture which was chaired by Tan Sri Datuk Dr Mustaffa Babjee FASc.

Bengkel "Principles, Protocols and Pitfalls of Fluorescence *In Situ* Hybridization (Fish)"
Bengkel pertama yang dianjurkan di bawah Tabung Penyelidikan Perubatan Dr Ranjeet Bhagwan Singh iaitu "Principles, Protocols and Pitfalls of Fluorescence *In Situ* Hybridization" diadakan dari 18–23 November 1999 di Fakulti Perubatan, Universiti Malaya. Ia dirasmikan oleh Dato' Dr Salleh Mohd Nor FASc, Setiausaha Agung Akademi.

Workshop on "Principles, Protocols and Pitfalls of Fluoroscence *In Situ* Hybridization (Fish)"
The first technical workshop funded under the Dr Ranjeet Bhagwan Singh Medical Research Fund on "Principles, Protocols and Pitfalls of Fluorescence *In Situ* Hybridization" was held from 18–23 November 1999 at the Faculty of Medicine, University of Malaya. It was officiated by Dato' Dr Salleh Mohd Nor FASc, Secretary General of the Academy.



Peserta bengkel menjalankan praktikal secara 'hands-on' menggunakan teknik FISH.
Workshop participants carrying out hands-on bench work using FISH techniques

Tujuan bengkel tersebut adalah untuk mengenalkan kepada para peserta asas teknik FISH bermula dari protokol hingga ke analisis hasil dan ia bertumpu kepada persediaan cytogenetik molekular (FISH), analisis dan intepretasi hasil teknik FISH. Bengkel tersebut megandungi syarahan, praktikal secara 'hands-on', mikroskopi dan tutorial.

Diantara objektif bengkel tersebut adalah untuk memberi pelajaran kepada peserta berkenaan batasan dan kesulitan apabila menggunakan teknik FISH di bidang klinikal dan penyelidikan dan untuk mengenalkan peserta dengan jenis 'probe' yang berbeza untuk FISH.

Assoc. Prof Andy K.H. Choo dari Murdoch Institute of Birth Defects, Melbourne, Australia, Pakar Teknikal dari Department of Medical Genetics, Belfast City Hospital, Ireland ditugaskan untuk membantu pengendalian bengkel. 27 peserta yang dipilih berdasarkan penggunaan teknik FISH mereka pada masa sekarang atau akan datang untuk kerja klinikal atau penyelidikan menghadiri bengkel tersebut.

Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc. Presiden Akademi Sains Malaysia menutup majlis dan seterusnya menyampaikan Sijil kepada para peserta.

The aim of the workshop was to introduce participants to the basis of FISH beginning with protocols through to analysis of results and it was focused particularly on molecular cytogenetics (FISH) preparation, analysis and interpretation of FISH results. The workshop comprised of lectures, hands-on practicals, microscopy and tutorials.

Among the objectives of the workshop were to educate participants on the limitations and pitfalls when applying FISH to clinical and research areas and to enlighten participants on the different types of probes available for FISH.

Assoc. Prof Andy K.H. Choo from Murdoch Institute of Birth Defects, Melbourne, Australia and Mr David McManus, Technical Specialist from the Department of Medical Genetics, Belfast City Hospital, Ireland were engaged to assist the workshop. Twenty seven participants who were selected based on their current or future use of FISH in clinical work or research attended the workshop.

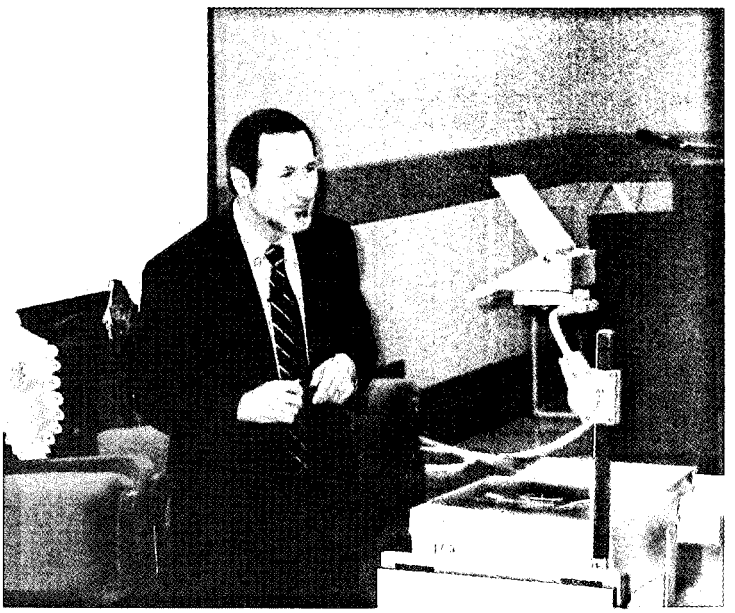
The closing ceremony of the workshop was officiated by Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc, President of the Academy of Sciences Malaysia who presented Certificates to all participants.

Syarahan Perdana ASM 1999

Akademi menganjurkan Syarahan Perdana 1999 di Fakulti Sains, Universiti Malaya pada 13 Disember 1999. Syarahan Perdana tersebut dianjurkan bersama oleh Akademi dan Fakulti Sains, Universiti Malaya. Seramai lebih kurang 350 tetamu menghadiri syarahan tersebut yang bertajuk "Superfluidity in 3HE : Discovery and Understanding" disampaikan oleh Prof Douglas Osheroff, pemenang anugerah Nobel dalam bidang Fizik pada tahun 1996. Prof Douglas Osheroff adalah seorang ahli Fizik terkemuka di dunia dan penyelidikannya adalah bertumpu kepada kajian tentang cecair dan pepejal kuantum dan kaca pada takat suhu lampau.

ASM Annual Oration 1999

The Academy held its 1999 Annual Oration at the Faculty of Science, University of Malaya on 13 December 1999. The Oration was jointly organized by the Academy and the Faculty of Science, University of Malaya. About 350 invited guests attended the oration. The oration entitled "Superfluidity in 3HE : Discovery and Understanding" was delivered by Prof Douglas Osheroff, a Nobel Laureate in Physics in 1996. Prof Douglas Osheroff is one of the world's most distinguished physicists and his research efforts center around studies of quantum fluids and solids and glasses at ultra-low temperatures.



Prof Douglas Osheroff menyampaikan Syarahan Perdana
Prof Douglas Osheroff delivering the Annual Oration

Syarahan Umum ASM 1999
Pada 14 Disember 1999, Prof Douglas Osheroff menyampaikan Syarahan Umum bertajuk "The Nature of Discovery in Physics" di Dewan Budaya, Universiti Sains Malaysia. Program dianjurkan bersama oleh Akademi dan Universiti Sains Malaysia. Seramai lebih kurang 350 tetamu menghadiri syarahan tersebut.

Siri Syarahan India-Asean Eminent Persons – "Neurosurgery in India"
Pada 30 November 1999, Prof P.N. Tandon, Professor Emeritus, Jabatan Neurosurgeri, All India Institute of Microsurgery (AIIMS), New Delhi yang berada di Kuala Lumpur sebagai tetamu Akademi dibawah Program Siri Syarahan India-ASEAN Eminent Persons telah menyampaikan dua syarahan dan membentangkan satu kertas kerja. Program dianjurkan oleh Akademi dengan Indian High Commission di Malaysia. Prof Tandon menyampaikan syarahan bertajuk "State of the Art (Nuerosurgery) in India" di Institut Kaji Saraf Tunku Abdul Rahman, Hospital Besar Kuala Lumpur. Syarahan tersebut dihadiri oleh 80 tetamu yang terdiri daripada doktor, pakar bedah neuro, penyelidik sains perubatan dan jururawat. Diantara tetamu kehormat yang hadir adalah Dato' Dr Haji Ahmad Tajuddin Jaffar, Timbalan Pengarah (Perubatan), Kementerian Kesihatan dan YBhg

ASM 1999 Public Lecture
On 14 December 1999, Prof Dr Douglas Osheroff delivered a Public Lecture entitled "The Nature of Discovery in Physics" at Dewan Budaya, Universiti Sains Malaysia. The programme was jointly organized by the Academy and Universiti Sains Malaysia. About 350 guests attended the lecture.

India-Asean Eminent Persons Lecture Series – "Neurosurgery in India"
On 30 November 1999 Prof P.N. Tandon, Emeritus Professor, Department of Neurosurgery, All India Institute of Micro Surgery (AIIMS), New Delhi who was in Kuala Lumpur as guest of the Academy under the India-ASEAN Eminent Persons Lecture Series programme gave two lectures and presented a paper. The programme was organized by the Academy in collaboration with the Indian High Commission in Malaysia. Prof Tandon delivered a lecture on "State of the Art (Neurosurgery) in India" at the Institut Kaji Saraf Tunku Abdul Rahman, Hospital Besar Kuala Lumpur. The lecture was attended by about 80 guests consisting of doctors, neurosurgeons and medical science researchers and sisters (nurses). Among the dignitaries at the lecture were Dato' Dr Haji Ahmad Tajuddin Jaffar, Deputy Director General (Medical), Ministry of Health Malaysia and

Dato' Dr R. Selvaprasagam, Pengarah Institut Kaji Saraf Tunku Abdul Rahman Hospital Besar Kuala Lumpur. Selepas syarahan beliau melawat wad perubatan neurosurgeri dan mengadakan perbincangan dengan doktor-doktor di hospital.

Pada hari yang sama, Prof Tandon menyampaikan syarahan bertajuk "Recent Advances in Pathogenesis, Investigation and Treatment of Brainstem Haemorrhages" kepada lebih kurang 100 tetamu di Institut Sains Biologi, Universiti Malaya.

Pada 1 Disember 1999 Prof Tandon menyampaikan kertas kerja bertajuk "India's Response in Terms of National S&T Policy to the Knowledge-Driven Economy" di Seminar Antarabangsa Kajian Semula Polisi S & T Kebangsaan.

YBhg Dato' Dr R. Selvaprasagam, Director of Institut Kaji Saraf Tunku Abdul Rahman, Hospital Besar Kuala Lumpur. After the lecture he visited the neurosurgery medical ward and had discussion with doctors at the hospital.

On the same day in the afternoon, Prof Tandon delivered a lecture on "Recent Advances in Pathogenesis, Investigation and Treatment of Brainstem Haemorrhages" to about 100 guests at the Institute of Biological Sciences, University of Malaya.

On 1 December 1999 Prof Tandon presented a paper "India's Response In Terms of National S&T Policy to the Knowledge-Driven Economy" at the International Seminar on National S&T Policy Review.



Prof. P.N. Tandon bersama dengan doktor di Institut Kaji Saraf Tunku Abdul Rahman
Prof. P.N. Tandon with the doctors at the Institute Kaji Saraf Tunku Abdul Rahman

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.

Pada tahun 1999 Akademi meneruskan Siri Syarahan ASM yang dimulakan pada tahun lepas. Siri Syarahan ini diadakan untuk meningkatkan kesedaran tentang pencapaian SET di kalangan pelajar sains Sekolah Menengah berusia di antara 15-16 tahun dan juga untuk menggalakkan dan memberi inspirasi kepada generasi muda kita untuk memilih kerjaya dalam bidang SET serta menggalakkan mereka menjadi peneraju bidang ini. Dengan kerjasama PETROSAINS dan ditaja sepenuhnya oleh PETRONAS, Akademi telah menjayakan fasa kedua (Fasa II) Syarahan PETROSAINS-ASM 1999 ini.

Syarahan PETROSAINS-ASM 1999
Fasa II Syarahan PETROSAINS-ASM bermula di Pulau Pinang. Ia diadakan di Universiti Sains Malaysia. Selepas Pulau Pinang, syarahan diadakan di Kolej MARA, Kulim, diikuti di Institut Kemahiran MARA, Beseri; Maktab Rendah Sains MARA, Kuantan; Maktab Rendah Sains MARA Pengkalan Chepa; Wisma Darul Iman, Kuala Terengganu; UNIMAS, Kota

SCIENCE AWARENESS PROGRAMME

The Science Awareness Programme was developed with the aim 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 1999 the Academy continued with the ASM Lecture Series which started last year. The Lecture Series is developed to raise awareness of SET achievements amongst High School science students aged 15-16 years and also to challenge and inspire young people to pursue careers in SET and stimulate them to become leaders in these fields. With the co-operation of PETROSAINS and under the sole sponsorship of PETRONAS, the Academy has successfully organized the second phase (Phase II) of the PETROSAINS-ASM 1999 Lecture.

PETROSAINS-ASM 1999 Lecture
Phase II of the PETROSAINS-ASM Lecture started in Pulau Pinang. It was held at Universiti Sains Malaysia. After Pulau Pinang, the lecture was held at Kolej MARA, Kulim, followed by Institut Kemahiran MARA, Beseri; Maktab Rendah Sains MARA, Kuantan; Maktab Rendah Sains MARA, Pengkalan Chepa; Wisma Darul Iman, Kuala Terengganu; UNIMAS, Kota Samarahan and Promenade

Samarahan dan Promenade Hotel, Kota Kinabalu. Seramai 4,232 pelajar dan 350 guru dari 245 buah sekolah menghadiri Syarahan tersebut.

Syarahan yang diadakan di Kuala Terengganu dirasmikan oleh YAB Datuk Seri Amar DiRaja Tan Sri Haji Wan Mokhtar Ahmad, Menteri Besar Terengganu. Setiausaha Agung Akademi, Dato' Dr Salleh Mohd Nor FASc dan Pengarah Eksekutif, Dr Samsudin Tugiman turut hadir.

Di Sarawak, YAB Datuk Patinggi Tan Sri Haji Abdul Taib Mahmud, Ketua Menteri Sarawak merasmikan Syarahan. Dalam ucapan perasmian beliau mendorong ibu bapa untuk menggalakkan anak-anak mereka mengambil dan mempunyai minat terhadap subjek sains dari usia muda memandangkan bidang ini adalah penyumbang utama kepada pembangunan negara di masa depan. Akademi diwakili oleh Setiausaha Agung, Dato' Dr Salleh Mohd Nor FASc.

Hotel, Kota Kinabalu. A total of 4,232 students and 350 teachers from 245 schools attended the Lecture.

The Lecture in Kuala Terengganu was officiated by YAB Datuk Seri Amar DiRaja Tan Sri Haji Wan Mokhtar Ahmad, Menteri Besar Terengganu. The Academy's Secretary General, Dato' Dr Salleh Mohd Nor FASc and Executive Director, Dr Samsudin Tugiman were in attendance.

In Sarawak, Chief Minister YAB Datuk Patinggi Tan Sri Haji Abdul Taib Mahmud officiated the Lecture. In his opening speech he urged the parents to encourage their children to take up and have an interest in science subjects at an early age considering that these subjects would be the prime contributor to the future development in the country. The Academy was represented by its Secretary General, Dato' Dr Salleh Mohd Nor FASc.



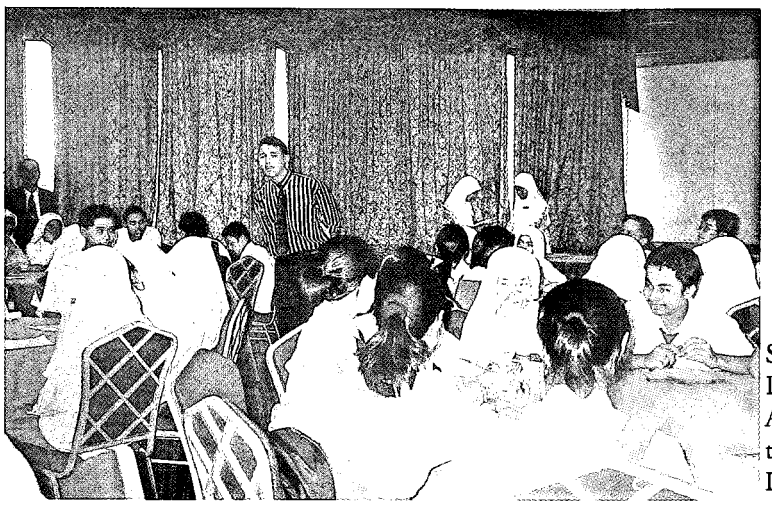
Academician Dato' Ir Lee Yee Cheong FASc menyampaikan ucapan semasa perasmian Syarahan PETROSAINS-ASM peringkat Negeri Sabah
Academician Dato' Ir Lee Yee Cheong FASc delivering the welcoming speech at the Opening Ceremony of the PETROSAINS-ASM Lecture in Sabah

Dilokasi akhir Syarahan, Syarahan tersebut dirasmikan oleh YB Datuk Chong Kah Kiat, Menteri Pembangunan Pelancongan, Alam Sekitar, Sains dan Teknologi Sabah. Academician Dato' Ir Lee Yee Cheong FASc, Naib Presiden dan Dr Samsudin Tugiman, Pengarah Eksekutif mewakili Akademi. Didalam ucapan perasmian YB Datuk Chong Kah Kiat mendorong sektor swasta untuk membantu dalam usaha untuk menanam minat dalam bidang sains dan teknologi dikalangan pelajar sekolah di Sabah. Beliau juga memohon bantuan Akademi untuk membantu usaha-usaha yang dijalankan oleh kerajaan negeri Sabah untuk mempromosikan sains dan teknologi kepada pelajar sekolah.

Syarahan tersebut mendapat sambutan yang memberangsangkan dari guru-guru dan pelajar. Ia dianggap sebagai berpengetahuan, berinformatif dan pada masa yang sama menyeronokkan. Adalah diharapkan Syarahan sebegini dapat diteruskan dimasa-masa akan datang.

At the last venue of the tour, the Lecture was officiated by YB Datuk Chong Kah Kiat, Menteri Pembangunan Pelancongan, Alam Sekitar, Sains dan Teknologi Sabah. Academician Dato' Ir Lee Yee Cheong FASc, Vice President and Dr Samsudin Tugiman, Executive Director represented the Academy. The Minister in his opening speech urged the private sector to help in funding interest in science and technology, especially among school children in Sabah. He also sought the assistance from the Academy in the efforts to promote science and technology in Sabah especially to the school children.

The lecture received overwhelming response from both the students and the teachers. It was perceived as educating, very informative and at the same time entertaining. It's hoped that the lecture would be continued in the future.



Sepintas lalu aktiviti Syarahan PETROSAINS-ASM
An overview of the activities at the PETROSAINS-ASM Lecture

Pusat Sumber Sains dan Teknologi Kebangsaan (NSTRC)

Cadangan penubuhan Pusat Sumber Sains dan Teknologi Kebangsaan (NSTRC) bermula pada tahun 1993 dimana Gabungan Pertubuhan Sains dan Teknologi Malaysia (COSTAM) memajukan kertas cadangan asal kepada Majlis Penyelidikan dan Kemajuan Sains Negara (MPKSN). Kertas cadangan yang dipersetujui kemudiannya dilanjutkan kepada Kementerian Sains, Teknologi dan Alam Sekitar (KSTAS) untuk tujuan perlaksanaan dan selanjutnya dipersetujui supaya Akademi Sains Malaysia yang pada ketika itu di dalam proses penubuhan mengambilalih tugas perlaksanaan cadangan tersebut. Projek kemudiaannya ditangguhkan sehinggalah Akademi berfungsi sepenuhnya pada bulan November 1996.

Akademi kemudiaanya menubuhkan Jawatankuasa Petugas untuk mengambil langkah-langkah yang perlu ke arah penubuhan NSTRC. Akademi kemudiannya diberikan sebidang tanah di Serdang, Selangor oleh Universiti Putra Malaysia (UPM). Majlis Akademi kemudiannya memutuskan supaya NSTRC didirikan diatas tanah tersebut sebagai sumbangan Akademi kepada NSTRC. Input dari Akademi di dalam perancangan konsep penubuhan termasuklah lawatan ke Pusat Sumber Sains, Kejuruteraan dan Teknologi (SET) yang serupa di Manila, Jakarta dan Bejing. Sepanjang proses ini Jawatankuasa Petugas dan

National Science and Technology Resource Center (NSTRC)

The proposal to establish a National Science and Technology Resource Centre (NSTRC) started in 1993 when the Confederation of Scientific and Technological Associations in Malaysia (COSTAM) submitted a paper to Majlis Penyelidikan dan Kemajuan Sains Negara (MPKSN). The approved proposal was then referred to the Ministry of Science, Technology and the Environment (MOSTE) for implementation and later it was agreed that the establishment of the NSTRC would be the responsibility of the Academy of Sciences Malaysia (ASM) then in the process of formation. The project was on hold until the Academy became fully operational in November 1996.

The Academy then formed a Steering Committee to take the appropriate action towards the establishment of the NSTRC. Subsequently the Academy was given a piece of land in Serdang, Selangor by Universiti Putra Malaysia (UPM). The Academy's Council decided that the NSTRC be set up on this land as the Academy's contribution to the NSTRC. Inputs from the Academy in the conceptual planning included visits to similar National SET Resource Centres in Manila, Jakarta and Beijing. Throughout the process, the Steering Committee of the Academy and the Professional Science, Engineering and Technology Associations (PSETAs)

Pertubuhan Professional Sains, Kejuruteraan dan Teknologi (PSETAs) telah mengadakan perbincangan dari masa ke semasa untuk mengkaji semula dan mempersetujui pelan konsep tersebut. Sebuah firma arkitek kemudiannya ditugaskan untuk melakar pelan konsep NSTRC. Reka konsep NSTRC membayangkan sebuah bangunan yang mesra alam dimana alam sekitar dan lanskap bangunan wujud secara harmoni.

Dimasa pelbagai disiplin SET pantas menjurus ke arah E-ekonomi dan K-ekonomi pada abad ke 21, NSTRC akan memberikan satu titik tumpu atau fokus yang sama kepada masyarakat SET Malaysia yang kecil saiznya untuk memperkukuhkan dan menimbangkan isu-isu SET secara multi-disiplin. Kertas konsep penubuhan NSTRC yang telah dikaji semula dan dipersetujui telah dimajukan kepda KSTAS untuk kelulusan. Akademi mencadangkan supaya KSTAS memasukkan NSTRC ke dalam Rancangan Malaysia ke 8.

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 1999, Akademi dengan kerjasama Japan Science and Technology Corporation (JST) menganjurkan dua forum industri peringkat tinggi.

has met periodically to review and approve the conceptual plan. An architect firm was engaged to draw the conceptual plan of the NSTRC. The concept design of the NSTRC envisages an environmental benign building with its environs in harmony with the landscape.

As SET disciplines are fast converging in the E-economy and K-economy of the 21st century, NSTRC will provide the common focus for the relatively small Malaysian SET community to consolidate and consider SET issues in multi-disciplinary manner. The final project paper on the establishment of the NSTRC which has been reviewed and approved has been submitted to MOSTE for approval. The Academy proposed that the establishment of the NSTRC be included in the 8th Malaysia Plan.

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 1999, the Academy, in collaboration with the Japan Science and Technology Corporation (JST) organized two high level industry Fora.

Strategi untuk Meningkatkan Industri Malaysia

Pada 22 April 1999 Siri Forum JST-ASM bertajuk "Strategi for Upgrading Malaysian Industry" diadakan di Dewan Seminar Akademi. Objektif Forum S&T yang dianjurkan bersama Japan Science and Technology Corporation (JST) adalah untuk berkongsi pengalaman dan berbincang tentang apa yang penting bagi P&P untuk menyumbang kepada pembangunan ekonomi industri, terutamanya yang berkaitan dengan senario Malaysia.

Lebihkurang 70 peserta dari industri menghadiri Forum. Mr Teruo Kobari, JICA Expert yang bertugas di MIER membentangkan kertas kerja bertajuk "Strategy for Upgrading of Malaysian Industry". Mr Au Lek Chai dari Kementerian Perdagangan Antabangsa dan Industri (MITI) bercakap mengenai "Technology Transfer", Mr Paramjit Singh dari Malaysian Institute of Economic Research (MIER) menyampaikan ceramah berkenaan "Development on Research Environment and HRD" dan Ir Andy K.H. Seo dari Federation of Malaysian Manufacturers (FMM) membentang kertaskerja bertajuk "Enhancement of Manufacturing Technology".

Pembangunan Sumber Tenaga Manusia untuk Meningkatkan Keupayaan Perkilangan di Malaysia

Forum JST-ASM yang kedua mengenai "Human Resource

Strategy for Upgrading Malaysian Industry

On 22 April 1999 the first in the JST-ASM Forum Series on "Strategy for Upgrading Malaysian Industry" was held at the Academy Seminar Hall. The objectives of this series of S&T Forum with the Japan Science and Technology Corporation (JST) are to share past experience and to discuss what is important for R&D to contribute to the development of industrial economy, in particular that relates to Malaysian scenario.

About 70 participants from the industry attended the Forum. Mr Teruo Kobari, JICA Expert attached with MIER presented his paper entitled "Strategy for Upgrading of Malaysian Industry". Mr Au Lek Chai from the Ministry of International Trade and Industry (MITI) spoke on "Technology Transfer", Mr Paramjit Singh from the Malaysian Institute of Economic Research (MIER) on "Development on Research Environment and HRD" and Ir Andy K.H. Seo from the Federation of Malaysian Manufacturers (FMM) on "Enhancement of Manufacturing Technology"'.

Human Resource Development For Upgrading Manufacturing Capability In Malaysia

The second JST-ASM Forum on "Human Resource Development for

Development for Upgrading Manufacturing Capability in Malaysia" diadakan pada 5 Oktober 1999 di Auditorium SIRIM. Seramai lebihkurang 60 peserta dari sektor industri menghadiri Forum. Penceramah di Forum adalah Mr Masaaki Kurachi, JICA Expert yang bertugas dengan Penang Skill Development Centre yang berceramah mengenai "Human Resource Development for Upgrading Manufacturing Capability in Malaysia", Mr Mah Lok Abdullah, Timbalan Ketua Pengarah, National Productivity Corporation Malaysia mengenai "Investing in HRD for Productivity

Upgrading Manufacturing Capability in Malaysia" was held on 5 October 1999 at the Auditorium SIRIM. About 60 participants from industry attended the Forum. The speakers at the Forum were Mr Masaaki Kurachi, JICA Expert attached with the Penang Skill Development Centre who spoke on "Human Resource Development for Upgrading Manufacturing Capability in Malaysia", Mr Mah Lok Abdullah, Deputy Director General, National Productivity Corporation Malaysia on "Investing in HRD for Productivity Improvement" and Mr R. Paramasivam, Staff Manager,



Ms Keiko Imai, dari Japan Science and Technology Foundation (Malaysia) menyampaikan ucapannya semasa Forum
Ms Keiko Imai, from Japan Science and Technology Foundation (Malaysia) delivering her welcoming speech during the Forum

Improvement" dan Mr Paramasivam, Pengurus Kakitangan, Pengurusan Strategik dan Pembangunan Kemahiran/Pengurus Operasi, Motorola Sdn Bhd berceramah mengenai "HRD for Upgrading Manufacturing Capability – Motorola Experience".

Forum tersebut memberi para peserta satu gambaran keseluruhan mengenai isu-isu, pandangan dan cadangan tentang bagaimana pembangunan sumber manusia dapat dilaksanakan dan contoh dan illustrasi bagaimana latihan yang sebenarnya dilaksanakan di Matsushita, Motorola dan National Productiviti Corporation.

PROGRAM ANTARABANGSA

Fokus Program Antabangsa Akademi adalah pada kerjasama dengan negara-negara ASEAN, Asia, Commonwealth dan Islam. Pada tahun 1999, Akademi bergiat aktif di peringkat serantau dan global. Akademi menghadiri banyak mesyuarat dan persidangan antarabangsa. Ia juga menganjurkan Seminar Antarabangsa dan Simposium. Akademi juga menghantar delegasi ke China dan Repblik Kyrghyz dan pada masa yang sama berpeluang menjadi hos kepada ramai pelawat penting disepanjang tahun.

Delegasi SET Malaysia ke China
Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc, Presiden Akademi Sains Malaysia

Strategic Management and Skill Development/Operation Manager, Motorola Sdn Bhd on "HRD for Upgrading Manufacturing Capability – Motorola Experience".

The Forum had given the participants an overview on issues, views and suggestions on how HRD should be implemented and examples and illustrations on how actual training courses have been implemented at Matsushita, Motorola and the National Productivity Corporation.

INTERNATIONAL PROGRAMME

The Academy's International Programme focuses on collaboration with ASEAN, Asian, Commonwealth and Islamic countries. In 1999, 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 Symposium and Seminar. The Academy sent its delegation to China and Kyrghyz Republic and was privileged to host many important visitors throughout the year.

Malaysia SET Delegation to China
Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc, President of the Academy of Sciences

mengetuai delegasi seramai dua puluh sembilan orang dalam lawatan rasmi ke Republik Rakyat China dari 17–23 Oktober 1999. Lawatan tersebut adalah tindakan lanjutan kepada Memorandum Kerjasama diantara Akademi Sains Malysia dengan Chinese Academy of Science (CAS) dan Chinese Academy of Engineering (CAE) yang ditandatangani pada 18 Ogos 1999.

Delegasi Malaysia dianggotai oleh enam kumpulan berdasarkan bidang fokus yang dikenalpasti oleh Akademi termasuk Polisi Sains, Kejuruteraan dan Teknologi, Pembangunan dan Isu Strategik, Sains Hayat, Sains Fizik dan Matematik, Sains Kimia, Teknologi Maklumat dan Komunikasi dan Sains Kejuruteraan.

Malaysia led a twenty-nine member delegation on official visit to the Peoples Republic of China from 17–23 October 1999. The visit was a follow-up to the Memoranda of Cooperation between the Academy of Sciences Malaysia and the Chinese Academy of Science (CAS) and the Chinese Academy of Engineering (CAE) signed on 18 August 1999.

Malaysian Delegation consisted of six groups based on the focus areas of interest identified by the Academy which included SET Policy, Development and Strategic Issues, Life Sciences, Physical and Mathematical Sciences, Chemical Sciences, Information and Communication Technology (ICT) and Engineering Sciences.



Delegasi Malaysia di Feng Tai Technology Park, Beijing
Malaysian delegation at Feng Tai Technology Park, Beijing

Objektif utama lawatan ini adalah untuk meninjau pekembangan dan peluang baru dalam bidang penyelidikan sains, kejuruteraan dan teknologi di China. Lawatan ini berharap agar dapat memeterai program usahasama P&P dalam bidang sains, kejuruteraan dan teknologi di antara professional Malaysia dan China.

Semasa lawatan delegasi melawat dan mengadakan perbincagan dengan institusi penyelidikan di bawah Chinese Academy of Sciences, univeristi, taman teknologi dan badan korporat di Beijing, Shanghai, Wuhan dan Yichang.

Mesyuarat Tahunan Ketiga Akademi Sains, Kejuruteraan dan Teknologi ASEAN dan Organisasi Nasional yang Serupa dan Rakan Dialog dari Australia, Jepun dan China

Academician Dato' Ir Lee Yee Cheong FASc mengetuai delegasi seramai empat orang ke Mesyuarat Tahunan Ketiga Akademi Sains, Kejuruteraan dan Teknologi ASEAN dan Organisasi Nasional Yang Serupa dan Rakan Dialog dari Australia, Jepun dan China pada 8 Julai 1999 di Bilik Champagne, Manila Hotel, Republik Filipina. Termasuk di dalam delegasi tersebut adalah Dato' Dr Salleh Mohd Nor FASc, Setiausaha Agung Akademi, Tan Sri Datuk Ir Shahrizaila Abdullah FASc, Fellow dan Encik Zahir Ismail, Pegawai Sains Kanan Akademi.

The main objective of the visit was to explore new developments and opportunities in the areas of research in science, engineering and technology (SET) in China. The visit hoped to materialize collaborative R&D programmes in SET between Malaysia and China SET professionals.

During the visit the delegation visited and had discussion with research institutes under the Chinese Academy of Sciences, universities, technology parks and corporations in Beijing, Shanghai, Wuhan and Yichang.

Third Annual Meeting of Asean Academies of Science, Engineering and Technology and Similar National Organizations and Dialogue Partners from Australia, Japan and China

Academician Dato' Ir Lee Yee Cheong FASc led a four member delegation from the Academy to the Third Annual Meeting of ASEAN SET Academies and Similar National Organizations and Dialogue Partners from Australia, Japan and China which was held on 8 July 1999 at the Champagne Room, Manila Hotel, Republic of Philippines. Included in the delegation were Dato' Dr Salleh Mohd Nor FASc, Secretary General of the Academy, Tan Sri Shahrizaila Abdullah FASc and Mr Zahir Ismail, Senior Scientific Officer of the Academy.

Mesyuarat tersebut dihadiri oleh 20 peserta dari enam Akademi ASEAN (Vietnam, Malaysia, Filipina, Thailand, Indonesia dan Brunei Darussalam) dan Akademi serta Organisasi yang terlibat dari Australia, Jepun dan China. Tema Mesyuarat Tahunan tersebut adalah "Critical Issues in Science, Engineering and Technology: Addressing Opportunities and Challenges in the Asia-Pacific Region Towards Transition to Sustainability in the 21st Century". Mesyuarat tersebut dipengerusikan bersama oleh Academician Hjose O. Jullano, National Academy of Science and Technology, Philippines dan Academician Dato' Ir Lee Yee Cheong FASc, Naib Presiden Akademi Sains Malaysia.

Dato' Dr Salleh Mohd Nor FASc membentangkan kertaskerja bertajuk "Competitiveness in A Knowledge-Driven Economy: The Role of Science, Engineering and Technology" yang disediakan oleh beliau bersama dengan Presiden, Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc.

Sejajar dengan tema mesyuarat, satu persidangan dianjurkan yang menarik seramai 150 saintis dan penyelidik dari Filipina. Persidangan tersebut membincangkan beberapa tema seperti, makanan, tenaga, air, pelajaran, teknologi maklumat, 'sustainable consumption' dan kesihatan. Tan Sri Dato' Ir Shahrizaila Abdullah FASc

The meeting was attended by 20 participants from six ASEAN Academies (Vietnam, Malaysia, Philippines, Thailand, Indonesia and Brunei Darussalam) and collaborating Academies and organizations from Australia, Japan and China. The theme of the Annual Meeting was "Critical Issues in Science, Engineering and Technology: Addressing Opportunities and Challenges in the Asia-Pacific Region Towards Transition to Sustainability in the 21st Century". The meeting was jointly chaired by Academician Hjose O. Jullano of the National Academy of Science and Technology, Philippines and Academician Dato' Ir Lee Yee Cheong FASc, Vice President of the Academy of Sciences Malaysia.

Dato' Dr Salleh Mohd Nor FASc delivered a paper entitled "Competitiveness in A Knowledge-Driven Economy: The Role of Science, Engineering and Technology", which was jointly prepared by himself and the President, Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc.

In line with the theme of the meeting, a conference was organized that drew some 150 scientists and researchers from the Philippines. The conference addressed several broad themes such as food, energy, water, education, information technology, sustainable consumption and health. Tan Sri Dato' Ir Shahrizaila Abdullah

menyampaikan kertaskerja bertajuk "Global Water Initiatives in the 21st Century" manakala Academician Dato' Ir Lee Yee Cheong FASc menyampaikan kertaskerja bertajuk "Sustainable Consumption".

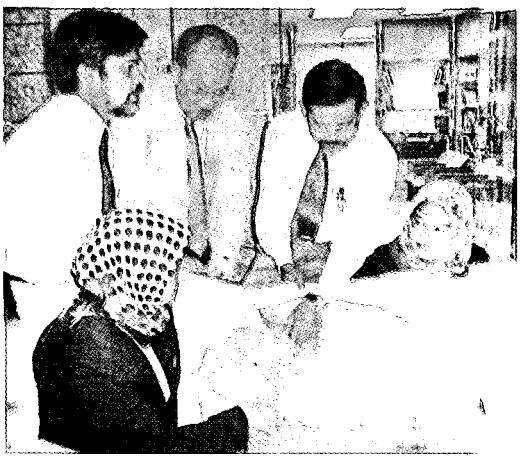
Simposium Antarabangsa "Science Policy in Asia"

Dr Yong Hoi Sen FASc mewakili Akademi bagi pihak Presiden ke Simposium Antarabangsa "Science Policy in Asia' yang diadakan di Irkutsk, Rusia dari 6-10 September 1999. Kertaskerja Simposium merangkumi dua topik utama "Modern Tendencies in Science, Economy and Technologies" dan "The Role of National Academies in Advancement of Science, Culture and Education in the Countries and Prerequisites for the Establishment of the Association of Academies of Sciences in Asia (AASA)". Dr Yong Hoi Sen FASc menyampaikan kertaskerja bertajuk "Competitiveness in

FASc presented a paper entitled "Global Water Initiatives in the 21st Century" while Academician Dato' Ir Lee Yee Cheong FASc delivered a paper on "Sustainable Consumption".

International Symposium on "Science Policy in Asia"

Dr Yong Hoi Sen FASc represented the Academy on behalf of the President at the International Symposium on "Science Policy in Asia" which was held at Irkutsk, Russia from 6–10 September 1999. The symposium papers covered two main topics "Modern Tendencies in Science, Economy and Technologies" and "The Role of National Academies in Advancement of Science, Culture and Education in the Countries and Prerequisites for the Establishment of the Association of Academies of Sciences in Asia (AASA)". On behalf of the President of the Academy, Dr Yong Hoi Sen FASc presented a



Academician Dato' Ir Lee Yee Cheong FASc, Naib Presiden Akademi bersama dengan para penyelidik
Academician Dato' Ir Lee Yee Cheong FASc, Vice President of the Academy together with the researchers

a Knowledge Driven Economy: The Role of Science, Engineering and Technology in the Next Millenium" di Simposium tersebut. Satu Memorandum Persefahaman Penubuhan AASA ditandatangani oleh delegasi dari Akademi-akademi yang hadir kecuali Republik Rakyat China dan Malaysia.

Program Penyelidikan Malaysia di Antartika

Dibawah teraju Akademi Sains Malaysia, dengan sokongan penuh oleh Kementerian Sains, Teknologi dan Alam Sekitar, pasukan pertama saintis Malaysia telah mengendalikan dengan jayanya penyelidikan di Antartika. Peristiwa ini menandakan satu pencapaian penting kemajuan penyelidikan sains di Malaysia.

Akademi telah menjemput pasukan penyelidik seramai empat orang tersebut untuk berkongsi pengalaman dan buah fikiran mengenai penyelidikan di Antartika khususnya dan penyelidikan secara usahasama amnya. Sesi taklimat diadakan pada 11 November 1999 di Akademi. Objektif utamanya adalah untuk menguatkan lagi Program Penyelidikan di Antartika dan untuk mengadakan aktiviti-aktiviti yang berpotensi untuk program kesedaran umum. Sesi dipengerusikan oleh Naib Presiden, Academician Dato' Ir Lee Yee Cheong FASc.

paper entitled "Competitiveness in a Knowledge Driven Economy: The Role of Science, Engineering and Technology in the Next Millenium" at the Symposium. A Memorandum of Understanding on the Establishment of the AASA was signed by delegates of representative Academies, except the Peoples Republic of China and Malaysia.

Malaysian Research Programme in Antarctica

Under the leadership of the Academy of Sciences Malaysia, with full support from the Ministry of Science, Technology and the Environment, the first team of Malaysian scientists had successfully concluded its research in Antarctica. This event marked a very significant milestone in Malaysia's scientific research.

The Academy invited the four-member team to share their experiences and thoughts about conducting research in Antarctica in particular and co-operative research in general. The briefing session was held on 11 December 1999 at the Academy. The primary objective of the session was to strengthen the Antarctica Research Programme and develop potential activities for public awareness programme. The session was chaired by the Vice President, Academician Dato' Ir Lee Yee Cheong FASc.

Asian Conference On Scientific Cooperation (ACSC) yang Keenam

Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc menghadiri Asian Conference on Scientific Cooperation (ACSC) yang keenam di Tokyo dari 15–18 Mac 1999. ACSC yang keenam membincangkan dengan lebih lanjut cadangan penubuhan Science Council of Asia (SCA) yang dijadualkan untuk dilaksanakan pada tahun 2001. SCA akan mengambil alih tugas ACSC sebagai pertubuhan 'non-profit' antarabangsa yang tertakluk kepada kerjasama secara sukarela oleh sepuluh negara Asia: China, India, Indonesia, Jepun, Korea, Malaysia, Filipina, Singapura, Thailand dan Vietnam. Objektif SCA adalah untuk memberi saintis didalam pelbagai bidang termasuk kebudayaan dan sosial serta "natural sciences" dan teknologi satu landasan untuk mempromosikan program pertukaran sains dan kerjasama di Asia untuk membaiki taraf masyarakat. Akademi mencadangkan SCA mengambil pendekatan atau perspektif Asia dalam "Sustainable Development" sebagai satu dari aktiviti utamanya.

Asian Conference on Scientific Cooperation (ACSC) Ketujuh

Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc, Presiden Akademi Sains Malaysia dan Prof Dato' Dr Sham Sani FASc menghadiri ACSC ketujuh di Tokyo dari 28-21 Oktober 1999. Diantara

Sixth Asian Conference on Scientific Cooperation (ACSC)

Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc attended the Sixth Asian Conference on Scientific Cooperation which was held in Tokyo from 15–18 March 1999. The Sixth ACSC discussed further the formation of the proposed Science Council of Asia (SCA) which is scheduled to be implemented in Year 2001. The SCA will take over the role of ACSC as an international non-profit organization constituted by voluntary cooperation initially of ten Asian countries: China, India, Indonesia, Japan, Korea, Malaysia, Philippines, Singapore, Thailand and Vietnam. The objective of SCA is to provide scientists in all fields including cultural and social as well as natural sciences and technology a collaborative platform for promoting scientific exchange and cooperation in Asia for the improvement of human society. The Academy suggested that SCA develop an Asian approach or perspective in "Sustainable Development" as one of its priority activities.

Seventh Asian Conference on Scientific Cooperation (ACSC)

Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc, President of the Academy of Sciences Malaysia and Prof Dato' Dr Sham Sani FASc attended the Seventh ACSC in Tokyo from 28-31 October

hasil persidangan adalah penerimaan kertas cadangan "Proposal for the IAP 2000 Conference – Population and the Environment: Asia's Critical Role in Sustainable Development" sebagai maklumat latar yang dilampir dengan kertas utama untuk dibentangkan di IAP 2000 Conference di Tokyo pada 15 –18 Mei 2000, penerimaan statut Asia Science Council (ASC) yang dibincangkan berdasarkan kertaskerja "Scheme of Science Council of Asia (SCA) Provisional Plan After 2000".

Mesyuarat IAP-STCC

Academician Dato' Ir Lee Yee Cheong FASc, Naib Presiden Akademi mewakili Malaysia ke Mesyuarat Sustainability Transition Co-ordinating Committee (STCC) pada 26 Jun 1999 di Hungarian Academy of Sciences di Budapest. Ahli STCC dari Hungary, United Kingdom, Perancis, Poland, Brazil, USA, Kanada, Colombia, Japan, India, Caribbean dan Malaysia menghadiri mesyuarat tersebut yang dipengerusikan bersama oleh Professor Sherwood Rowland dan Professor P.N. Tandon. Mesyuarat membincangkan Inter Academy Panel (IAP) 2000 Conference yang dijadualkan pada bulan Mei 2000 di Tokyo. Science Council of Japan akan menjadi hos persidangan tersebut. Adalah dipersetujui bahawa Persidangan IAP 2000 akan

1999. Amongst the outcomes of the conference were the acceptance of the paper "Proposal for the IAP 2000 Conference – Population and the Environment: Asia's Critical Role in Sustainable Development" as background information attached to the main paper to be presented to the IAP 2000 Conference in Tokyo on 15 – 18 May 2000, the acceptance of the statute of Asia Science Council (ASC) which was discussed based on the paper "Scheme of the Science Council of Asia (SCA) Provisional Plan After 2000".

IAP-STCC Meeting

Academician Dato' Ir Lee Yee Cheong FASc, Vice President of the Academy represented Malaysia to the Sustainability Transition Co-ordinating Committee (STCC) meeting on 26 June 1999 in the Hungarian Academy of Sciences in Budapest. STCC members from Hungary, United Kingdom, France, Poland, Brazil, USA, Canada, Colombia, Japan, India, the Caribbean and Malaysia attended the meeting which was jointly chaired by Professor Sherwood Rowland and Professor P.N. Tandon. The meeting discussed the Inter Academy Panel (IAP) 2000 Conference scheduled for May 2000 in Tokyo. The Science Council of Japan would be the host of the conference. It was agreed that the IAP 2000 Conference would

membincangkan enam bidang fokus - Pelajaran dan Maklumat; Tenaga; Makanan; Kesihatan dan Populasi; Air dan Penggunaan.

IAP-STCC telah bermesyuarat pada 27 Januari 1999 di French Academy of Sciences di Paris. Malaysia diwakili oleh Academician Dato' Ir Lee Yee Cheong FASc, Naib Presiden, Akademi Sains Malaysia. Mesyuarat mengenalpasti negara-negara ahli yang akan bertanggungjawab untuk mendapatkan cadangan bagi enam sub-tema yang dikenalpasti dan untuk mencadangkan penceramah yang berkaitan dengan setiap satu Sesi Tematik. Malaysia bersama dengan India bertanggungjawab keatas subjek Makanan dan Majlis memutuskan supaya Akademi mengadakan Sesi 'Brainstorming' untuk membincangkan subjek tersebut dan menyediakan cadangan yang relevan untuk dimajukan kepada Sekretariat STCC.

cover six areas of focus - Education and Information; Energy; Food; Health and Population; Water and Consumption.

The IAP-STCC previously met on 27 January 1999 at the French Academy of Sciences in Paris. Malaysia was represented by Academician Dato' Ir Lee Yee Cheong FASc, Vice President, Academy of Sciences Malaysia. The meeting identified the member countries that would be responsible to canvass proposals for the six sub-themes identified and to recommend relevant speakers for each Thematic Session. Malaysia together with India was responsible for the subject on Food and the Council had decided for the Academy to hold a brainstorming session to discuss the subject and to come up with appropriate recommendations for submission to the STCC Secretariat.

Persidangan APEC "Contribution of Science, Engineering and Technology to Sustainable Economic Development in the APEC Region"

Persidangan APEC mengenai "Contribution of Science, Engineering and Technology to Sustainable Economic Development in the APEC Region" diadakan di Palmerston North, New Zealand dari 27–29 Oktober 1999. Ia dianjurkan bersama oleh Institution of Professional Engineers New Zealand,

APEC Conference on the Contribution of Science, Engineering and Technology to Sustainable Economic Development in the APEC Region

The APEC Conference on the "Contribution of Science, Engineering and Technology to Sustainable Economic Development in the APEC Region" was held in Palmerston North, New Zealand from 27–29 October 1999. It was organized jointly by the Institution of Professional Engineers New

Ministry of Research, Science and Technology, Massey University dan Royal Society of New Zealand.

Persidangan diadakan sebagai lanjutan kepada Persidangan Mejabulat APEC mengenai SET yang diadakan di Kuala Lumpur dari 17 – 19 April 1998. Ekonomi dari USA, Kanada, Indonesia, Malaysia, Thailand, Australia dan New Zealand menghadiri persidangan tersebut. Delegasi seramai empat orang dari Malaysia diketuai oleh Prof Dr Mohd Zawawi Ismail FASc. Turut serta adalah Encik Zahir Ismail dari Akademi Sains Malaysia dan Encik Zakwan Abidi dan Cik Norhuda Nordin dari MIGHT. Hasil dari persidangan tersebut secara amnya adalah penekanan terhadap pentingnya membangunkan sumber tenaga manusia untuk memenuhi keperluan ekonomi berlandaskan pengetahuan.

Memorandum Persefahaman di Antara Akademi Sains Malaysia (ASM) dan Korean Academy of Science and Technology (KAST)

Pada 11 Februari 1999 satu Memorandum Persefahaman ditandatangani oleh Akademi Sains Malaysia dan Korean Academy of Science and Technology (KAST). Akademi diwakili oleh Presiden, Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc dan KAST diwakili oleh Presiden, Prof Emeritus Dr Mu Shik Jhon.

Zealand, Ministry of Research, Science and Technology, Massey University and the Royal Society of New Zealand.

The Conference was organized as a follow up to the APEC Roundtable Conference on SET held in Kuala Lumpur from 17-19 April, 1998. Economies from USA, Canada, Indonesia, Malaysia, Thailand, Australia and New Zealand attended the Conference. The four-member delegation from Malaysia was led by Prof Dr Mohd Zawawi Ismail FASc. The other members of the delegation were En Zahir Ismail of Academy of Sciences Malaysia, En Zakwan Zabidi and Ms Norhuda Nordin of MIGHT. The most common theme that emerged from the Conference was the importance of developing human capital to meet the needs and requirements of the knowledge economy.

Memorandum of Understanding Between the Academy of Sciences Malaysia (ASM) and the Korean Academy of Science and Technology (KAST)

On 11 February 1999 a Memorandum of Understanding was signed between the Academy of Sciences Malaysia and the Korean Academy of Science and Technology (KAST). The Academy was represented by its President, Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc and KAST was represented by its President, Emeritus Prof Dr Mu Shik Jhon.

Seminar Sains dan Teknologi Asia-Pasifik Yang Keempat

Japan International Science and Technology Exchange Centre (JISTEC) dengan kerjasama Akademi Sains Malaysia, Kementerian Sains, Teknologi dan Alam Sekitar Malaysia dan Institution of Engineers Malaysia (IEM) menganjurkan Seminar Sains dan Teknologi Asia-Pasifik yang keempat. Seminar yang diadakan di Hotel Legend, Kuala Lumpur dari 8–10 Februari 1999 ditaja oleh Japan Science and Technology Cooperation (JST). Seminar tersebut dirasmikan oleh YB Datuk Law Hieng Ding, Menteri Sains, Teknologi dan Alam Sekitar.

Seramai lebih kurang 100 peserta yang berkaitan dengan polisi S&T, pengurusan projek dan pengurusan pembangunan dan penyelidikan (P&P) dari 11 buah negara kawasan Asia-Pasifik menghadiri Seminar tersebut.

Objektif seminar adalah untuk mempelajari pengalaman setiap negara dan mendalamkan persefahaman bersama; untuk bertukar pendapat tentang bagaimana meingkatkan kerjasama di antara negara dan organisasi berkaitan pada masa hadapan dan untuk menjalinkan perhubungan di antara mereka yang terlibat dengan pengurusan projek sains dan teknologi di setiap negara. Sebanyak duabelas kertas kerja dan satu ucaptama disampaikan semasa seminar selama dua hari itu. Satu

Fourth Asia-Pacific Science and Technology Seminar

The Japan International Science and Technology Exchange Centre (JISTEC) in collaboration with the Academy of Sciences Malaysia, the Ministry of Science, Technology and the Environment Malaysia and Institution of Engineers Malaysia (IEM) organized the Fourth Asia-Pacific Science and Technology Seminar. The seminar which was held in Legend Hotel, Kuala Lumpur from 8–10 February 1999 was sponsored by the Japan Science and Technology Cooperation (JST). It was declared open by the Honorable Datuk Law Hieng Ding, Minister of Science, Technology and the Environment.

About 100 participants related to S&T policy, project management and research and development (R&D) management from 11 countries in the Asia-Pacific Region attended the Seminar.

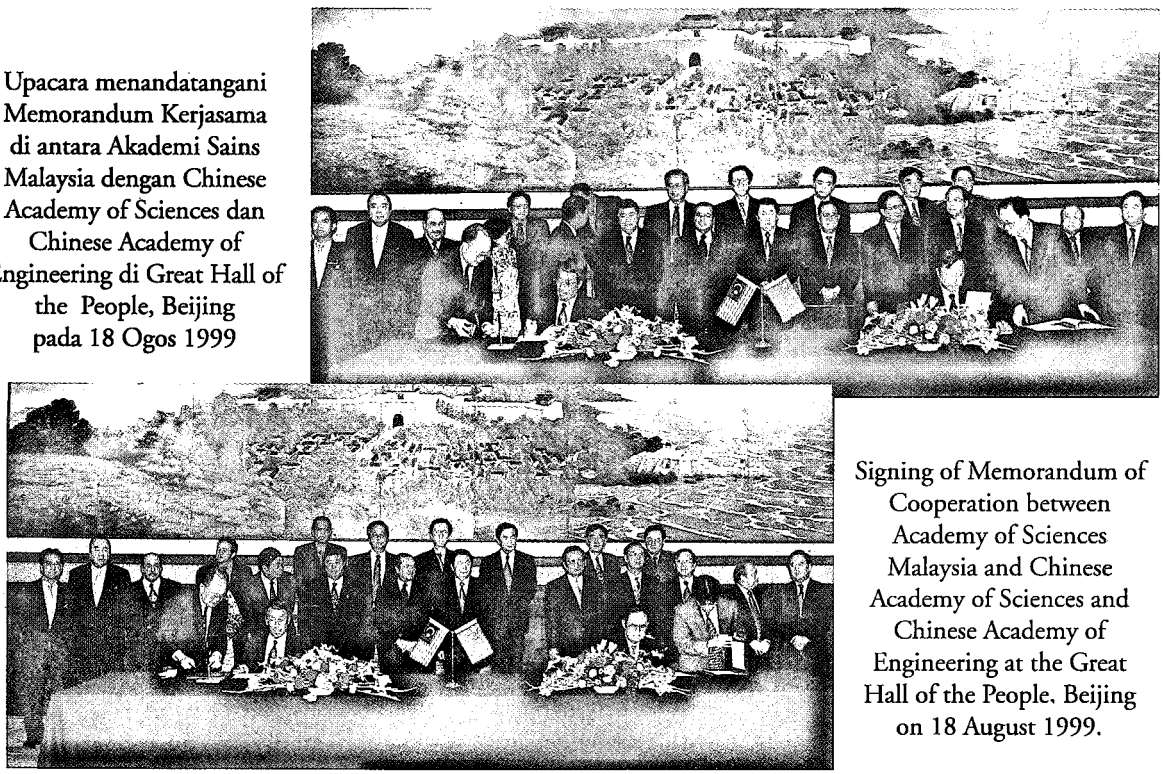
The objectives of the seminar were to learn the experience of each country and deepen mutual understanding; to exchange opinions on how to advance cooperation in the future between countries and related organizations and to build a network between those involved in science and technology, project management, and research and development management in each respective country. Twelve papers and one keynote address were presented during the two-day

lawatan ke Melaka dan Multimedia Development Corporation diaturkan untuk para peserta.

Kerjasama Dengan Akademi China
Dua Memorandum Kerjasama ditandatangani oleh Akademi Sains Malaysia dengan Chinese Academy of Sciences (CAS) dan Chinese Academy of Engineering (CAE) di Great Hall of the People, Beijing pada 18 Ogos 1999.

Seminar. One-day field trip to Malacca and the Multimedia Development Cooperation was arranged for the participants.

Cooperation With Chinese Academies
Two Memoranda of Cooperation were signed between the Academy of Sciences Malaysia and the Chinese Academy of Sciences (CAS) and the Chinese Academy of Engineering (CAE) at the Great Hall of the People, Beijing on 18 August 1999.



Upacara menandatangani Memorandum Kerjasama di antara Akademi Sains Malaysia dengan Chinese Academy of Sciences dan Chinese Academy of Engineering di Great Hall of the People, Beijing pada 18 Ogos 1999

Signing of Memorandum of Cooperation between Academy of Sciences Malaysia and Chinese Academy of Sciences and Chinese Academy of Engineering at the Great Hall of the People, Beijing on 18 August 1999.

Upacara menandatangani memorandum berkenaan oleh Presiden ASM, Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc dan Presiden CAS, Professor Lu Yongxiang dan Presiden CAE, Dr Song Kian disaksikan oleh Perdana Menteri Malaysia, YAB Dato' Seri Dr Mahathir Mohamad dan Premier Zhu Rongji dan para Menteri, Ketua Menteri, Timbalan Menteri, dan tetamu kehormat yang lain dari Malaysia dan Republik Rakyat China.

Semasa perbincangan diantara Perdana Menteri dari kedua negara, YAB Dato' Seri Dr Mahathir Mohamad mencadangkan sebagai susulan kepada Memorandum Kerjasama ini satu program duahala dalam bidang sains, kejuruteraan dan teknologi yang konkrit dimulakan diantara Malaysia dengan China.

The signing by ASM President, Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc and the CAS President, Professor Lu Yongxiang and CAE President, Dr Song Kian was witnessed by the Prime Minister, YAB Dato' Seri Dr Mahathir Mohamad and Premier Zhu Rongji and Ministers, Chief Ministers, Vice Ministers, and other dignitaries from Malaysia and the Peoples Republic of China.

During subsequent discussion between the Prime Ministers of both countries, YAB Dato' Seri Dr Mahathir Mohamad proposed that as a follow up to the Memoranda of Cooperation a concrete bilateral SET programme be initiated between Malaysia and China.

Mesyuarat Penubuhan Association Of Asian Academies Of Sciences (AAAS)

Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc, Presiden Akademi Sains Malaysia dan Academician Dato' Ir Lee Yee Cheong FASc, Naib Presiden Akademi menghadiri mesyuarat penubuhan Association of Asian Academies of Sciences (AAAS) semasa lawatan mereka ke Seoul dari 7–10 April 1999. Presiden Chinese Academy of Sciences dan Presiden Siberian Branch dan Far East Branch, Russian Academy of Sciences turut hadir.

Meeting On The Establishment Of Association Of Asian Academies Of Sciences (AAAS)

Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc, President of the Academy of Sciences Malaysia and Academician Dato' Ir Lee Yee Cheong FASc, Vice President of the Academy attended a meeting on the establishment of an Association of Asian Academies of Sciences (AAAS) during their visit to Seoul from 7–10 April 1999. President of the Chinese Academy of Sciences and Chairmen of the Siberian Branch and the Far East Branch of the Russian Academy of Sciences also attended the meeting.

Delegasi Malaysia Ke National Academy Of Sciences, Republik Kyrghyz

Delegasi seramai lapan orang yang diketuai oleh Presiden Akademi Sains Malaysia, Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc telah melawat Bishkek dan mengadakan mesyuarat dan pebincangan dengan para saintis dari National Academy of Sciences, Kyrghyztan.

Objektif utama lawatan ini adalah untuk meninjau perkembangan terbaru dan peluang penyelidikan di dalam bidang sains, kejuruteraan dan teknologi di Kyrghyztan. Lawatan ini ditumpukan untuk memeteraikan program usahasama dan kerjasama sains dan teknologi di antara saintis Malaysia dengan saintis dari Republik Kyrghyz.

Delegasi melawat beberapa institusi semasa lawatan. Beberapa bidang yang berpotensi dikenalpasti untuk projek usahasama diantara Institut dan Universiti P&P Malaysia dan Institut P&P dari National Academy of Sciences, Republik Kyrghyz. Bidang tersebut adalah Teknologi Plasma, Standards, Sains Geologi, Sains Bahan Baru dan Getah dalam Kejuruteraan.

Satu protokol yang merangka mekanisma usahasama yang dipersetujui telah ditandatangani oleh Presiden dari kedua-dua Akademi. Semasa lawatan Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc telah dianugerahkan gelaran "Honorary Academician of the National Academy of Sciences of Kyrghyz Republic" .

Malaysian Official Delegation to the National Academy Of Sciences of the Kyrghyz Republic

An eight member delegation led by the President of the Academy of Sciences Malaysia, Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc visited Bishkek and had meetings and discussions with scientists from the National Academy of Sciences, Kyrghyztan.

The main objective of the visit to the Kyrghyz Republic was to explore new developments and opportunities in the areas of research in science, engineering and technology in Kyrghyztan. The visit was oriented to materialize joint venture programmes and scientific and technological cooperation between Malaysian scientists and scientists from the Kyrghyz Republic.

The delegation visited several Institutes. Several potential areas were identified for collaboration between Malaysian R&D Institutes and Universities and R&D Institutes from the National Academy of Sciences of the Kyrghyz Republic. They were Plasma Technology, Standards, Geological Science, New Materials Science and Rubber in Engineering.

A Protocol which outlined the agreed mechanism of collaboration was signed by the Presidents of both Academies. During the visit Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc received the title "Honorary Academician of the National Academy of Sciences of Kyrghyz Republic".

LAWATAN/PELAWAT

Sepanjang tahun 1999, Akademi telah menerima kunjungan beberapa pelawat termasuk dua pemenang Anugerah Nobel Akademi juga mengadakan lawatan ke China, Korea dan beberapa Akademi dan Institut P & P.

VISITS/VISITORS

During 1999, the Academy hosted several visitors including two Nobel Laureates. The Academy also initiated important visits to China, Korea and various Academies and R & D Institutes.

LAWATAN/VISITS

Tarikh/Date	Lawatan/Visits
17 – 23 March 1999	*Lawatan ke Australian Academy of Sciences dan Academy of Technological Sciences and Engineering* Visit to the Australian Academy of Sciences and Academy of Technological Sciences and Engineering
2 – 3 March 1999	*Lawatan ke Akademi Sains Indonesia, ASEAN Secretariat Functional Cooperation dan UNESCO Jakarta* Visit to the Indonesian Academy of Sciences, ASEAN Secretariat Functional Cooperation and UNESCO Jakarta
9 – 18 June 1999	*Lawatan ke National Academy of Sciences, Kyrghyztan* Visit to National Academy of Sciences, Kyrghyztan
17 – 23 October 1999	*Lawatan ke Chinese Academy of Sciences, institusi penyelidikan dan universiti* Visit to the Chinese Academy of Sciences, research institutions and universities

PELAWAT/VISITORS

Tarikh/Date	Pelawat/Visitors
7 – 12 February 1999	*Lawatan oleh Prof Emeritus Dr. Mu Shik Jhon, Presiden Korean Academy of Sciences and Technology (KAST)* Visit by Emeritus Prof Dr. Mu Shik Jhon, President of the Korean Academy of Sciences and Technology (KAST)
20 – 22 May 1999	*Lawatan oleh Prof S. Nilsson, Presiden Royal Swedish Academy of Sciences (IVA)* Visit by Prof S. Nilsson, President of the Royal Swedish Academy of Sciences (IVA)
24 – 26 August 1999	*Lawatan oleh Nobel Laureate Prof Werner Arber, Presiden International Council for Science (ICSU)* Visit of Nobel Laureate Prof Werner Arber, President of the International Council for Science (ICSU)
30 September 1999	*Lawatan oleh Professor Zhu Xuan, Setiausaha Agung, Chinese Academy of Sciences* Visit by Professor Zhu Xuan, Secretary General, Chinese Academy of Sciences
29 November – 2 December 1999	*Lawatan oleh Prof P.N. Tandon, Jabatan Neurosurgeri, All India Institute of Micro Surgery (AIIMS)* Visit of Prof P.N. Tandon, Department of Neurosurgery All India Institute of Micro Surgery (AIIMS)
12 – 18 December 1999	*Lawatan oleh Nobel Laureate Prof Douglas Osheroff, Stanford University California* Visit of Nobel Laureate Prof Douglas Osheroff of Stanford University California

PENERBITAN

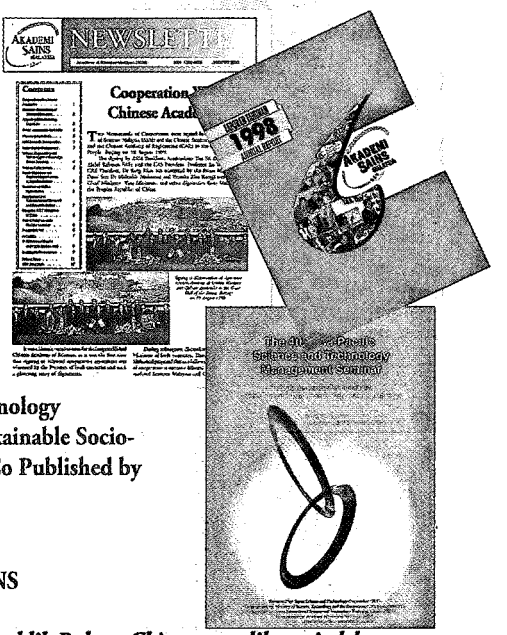
Senarai penerbitan Akademi bagi tahun 1999 adalah seperti berikut:

No **Penerbitan/Publications**

1. ***Laporan Tahunan & Penyata Kewangan 1998***
   1998 Annual Report & Statement of Accounts
2. ***The role of Scientists in Malaysia – Towards Excellence in Research***
3. ***Newsletter***
4. ***Prosiding Seminar Pengurusan Sains dan Teknologi Asia-Pasifik ke4: Strategic Approaches for Sustainable Socio-economic Growth in the Face of Global Changes – Penerbitan bersama oleh JST, MOSTE, JISTEC, ASM dan IEM***
   Proceedings of the 4th Asia-Pacific Science and Technology Management Seminar: Strategic Approaches for Sustainable Socio-economic Growth in the Face of Global Changes - Co Published by JST, MOSTE, JISTEC, ASM and IEM

PUBLICATIONS

The list of the 1999 publications of the Academy are as follows:

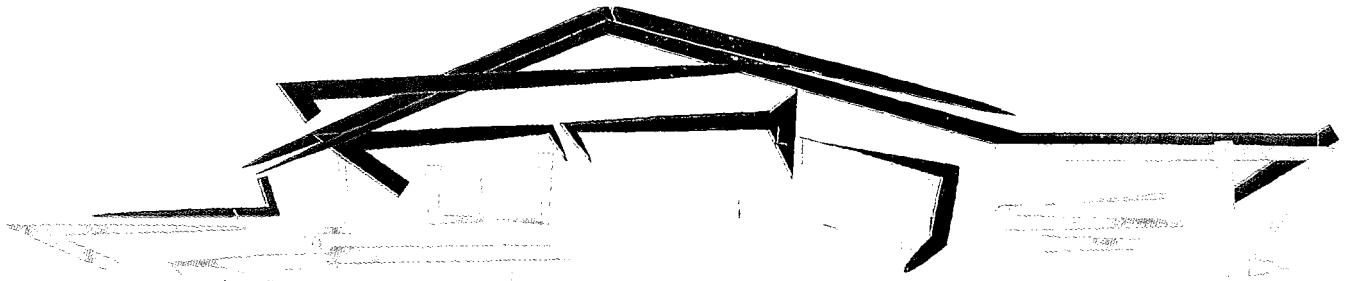


PENERBITAN DALAMAN/INTERNAL PUBLICATIONS

1. ***Laporan Lawatan Delegasi S.E.T. Malaysia ke Republik Rakyat China yang diketuai oleh Akademi Sains Malaysia***
   Report of the Visit of the Malaysian S.E.T. Delegation Led by the Academy of Sciences Malaysia to the People's Republic of China
2. ***Kertas Konsep Kajian Semula Polisi Sains, Kejuruteraan dan Teknologi Kebangsaan***
   Concept Paper on Review of the National Science, Engineering and Technology Policy .
3. ***Kertaskerja Seminar yang dibentangkan di Mesyuarat Tahunan Ketiga Akademi Sains, Kejuruteraan dan Teknologi ASEAN dan Organisasi Nasional yang Serupa dan Rakan Dialog dari Australia, Jepun dan China yang bertajuk "Competitiveness in a Knowledge-driven Economy: The Role of Science, Engineering and Technology in the Next Millennium" oleh Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc dan Dato' Dr Salleh Mohd Nor FASc***
   Seminar Paper presented at the Third Annual Meeting of ASEAN Academies of Science, Engineering and Technology and Similar National Organizations and Dialogue Partners from Australia, Japan and China entitled "Competitiveness in a Knowledge-driven Economy: The Role of Science, Engineering and Technology in the Next Millennium" by Academician Tan Sri Datuk Dr Omar Abdul Rahman FASc and Dato' Dr Salleh Mohd Nor FASc
4. ***Kertaskerja Seminar yang dibentangkan di Mesyuarat Tahunan Ketiga Akademi Sains, Kejuruteraan dan Teknologi ASEAN dan Organisasi Nasional yang Serupa dan Rakan Dialog dari Australia, Jepun dan China yang bertajuk "Global Water Initiatives in the 21st Century" oleh Tan Sri Dato' Ir Shahrizaila Abdullah FASc***
   Seminar Paper presented at the Third Annual Meeting of ASEAN Academies of Science Engineering and Technology and Similar National Organizations and Dialogue Partners

from Australia, Japan and China entitled "Global Water Initiatives in the 21st Century" by Tan Sri Dato' Ir Shahrizaila Abdullah FASc

5. *Kertaskerja Seminar yang dibentangkan di Mesyuarat Tahunan Ke Tiga Akademi Sains, Kejuruteraan dan Teknologi ASEAN dan Organisasi Nasional yang Serupa dan Rakan Dialog dari Australia, Jepun dan China yang bertajuk "Sustainable Consumption" oleh Academician Dato' Ir Lee Yee Cheong FASc*
   Seminar Paper presented at the Third Annual Meeting of ASEAN Academies of Science, Engineering and Technology and Similar National Organizations and Dialogue Partners from Australia, Japan and China entitled "Sustainable Consumption" by Academician Dato' Ir Lee Yee Cheong FASc
6. *Kertaskerja Seminar yang dibentangkan di Forum IKIM* Pengklonan Manusia – Satu Perspektif Islam *yang bertajuk "Cloning – the Science of the Possible" oleh Prof Dr Looi Lai Meng FASc*
   Seminar Paper presented at IKIM Forum on *Pengklonan Manusia – Satu Perspektif Islam* "Cloning – the Science of the Possible" by Prof Dr Looi Lai Meng FASc
7. *Kajian Semula Polisi Sains, Kejuruteraan dan Teknologi Kebangsaan: Laporan Interim*
   National Science, Engineering and Technology Policy Review: Interim Report
8. *Kajian Semula Polisi Sains, Kejuruteraan dan Teknologi Kebangsaan: Laporan Separuh Penggal*
   National Science, Engineering and Technology Policy Review: Mid Term Report
9. *Kajian Semula Polisi Sains, Kejuruteraan dan Teknologi Kebangsaan: Deraf Laporan Akhir*
   National Science, Engineering and Technology Policy Review: Draft Final Report
10. *"Frame Work of Science and Technology Policy: Investing for the Future" by Prof Datuk Dr Mohamad Zawawi Ismail FASc*
11. *Laporan Sains, Kejuruteraan dan Teknologi Australia: An Assessment of Australian Responses to Global Knowledge Economy*
    Report on the Australian Science, Engineering and Technology: An Assessment of Australian Responses to Global Knowledge Economy
12. *Laporan mengenai penyelidikan, pandangan dan pengalaman di Antartika bertajuk "Challenges of Antarctica Research: The Future"*
    Report on the research, impression and experience in Antarctica entitled "Challenges of Antarctica Research: The Future"



PENYATA KEWANGAN
STATEMENT OF ACCOUNTS

SURAT KETUA AUDIT NEGARA MENGENAI
AKAUN AKADEMI SAINS MALAYSIA
BAGI TAHUN BERAKHIR 31 DISEMBER 1999

SIJIL KETUA AUDIT NEGARA MENGENAI
AKAUN AKADEMI SAINS MALAYSIA
BAGI TAHUN BERAKHIR 31 DISEMBER 1999

Lembaran Imbangan Akademi Sains Malaysia pada 31 Disember 1999, penyata pendapatan dan perbelanjaan serta penyata aliran tunai bagi tahun tersebut telah diperiksa oleh Tetuan S. F. Yap & Co., Akauntan Awam, 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 berpandukan Standard Pengauditan Antarabangsa. Standard-standard 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 1999, hasil operasi serta aliran tunainya untuk tahun tersebut.

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

KUALA LUMPUR
3 APRIL 2000

AKADEMI SAINS MALAYSIA

PENYATA PRESIDEN DAN BENDAHARI KEHORMAT
AKADEMI SAINS MALAYSIA

Kami, **ACADEMICIAN TAN SRI DATUK Dr OMAR BIN ABDUL RAHMAN 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 1999 dan akaun pendapatan dan perbelanjaan untuk tahun berakhir tarikh itu; dan

(b) penyata aliran tunai untuk tahun berakhir pada 31 Disember 1999

Bagi pihak Majlis

Tan Sri Datuk Dr Omar bin
Abdul Rahman 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 : 20 Mac 2000

AKADEMI SAINS 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 14 MAR 2000

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

AKADEMI SAINS MALAYSIA

AKAUN PENDAPATAN DAN PERBELANJAAN
BAGI TAHUN BERAKHIR 31 DISEMBER 1999

	Nota	1999 RM	1998 RM
PENDAPATAN			
Pelbagai penerimaan		**8,380**	**17,847**
Faedah dari deposit jangka pendek		**742,344**	**989,958**
Kutipan Majlis Makan Malam		**33,580**	**46,679**
Sumbangan (Grant)		**454,318**	**845,000**
		1,238,622	**1,899,484**
PERBELANJAAN			
Emolumen		**445,298**	**411,539**
Perkhidmatan & bekalan		**413,121**	**349,564**
Penyelengaraan dan alat kelengkapan pejabat		**11,952**	**11,931**
Pemberian dan kenaan bayaran tetap		**4,992**	**4,842**
Perbelanjaan perbelanjaan lain		**7,712**	**9,645**
Susut nilai harta tetap		**148,095**	**148,012**
Majlis makan Malam		**48,382**	**45,488**
Perbelanjaan mengendalikan program sains		**734,194**	**467,681**
		1,813,746	1,448,702
(Kerugian)/Kelebihan pendapatan		**(575,124)**	**450,782**

AKADEMI SAINS MALAYSIA

LEMBARAN IMBANGAN PADA 31 DISEMBER 1999

	Nota	1999 RM	1998 RM
ASET TETAP	2	1,245,394	1,393,489
ASET SEMASA			
Lain-lain penghutang	3	30,061	164,049
Deposit jangka pendek	4	11,326,565	11,206,942
Wang tunai dan baki di bank	5	43,501	225,347
		11,400,127	11,596,338
LIABILITI SEMASA			
Lain-lain sipiutang	6	357,463	126,645
		357,463	126,645
ASET SEMASA BERSIH		11,042,664	11,469,693
		12,288,058	12,863,182
DIBIAYAI OLEH:			
Kumpulan Wang:			
Baki pada 1 Januari		12,863,182	12,412,400
(Kurangan)/Lebihan pendapatan atas perbelanjaan bagi tahun		(575,124)	450,782
Baki pada 31 Disember		12,288,058	12,863,182

AKADEMI SAINS MALAYSIA

PENYATA ALIRAN TUNAI BAGI
TAHUN BERAKHIR 31 DISEMBER 1999

	Nota	1999 RM	1998 RM
ALIRAN TUNAI DARI AKTIVITI OPERASI			
(Kerugian)/Lebihan pendapatan atas perbelanjaan		(575,124)	450,782
Pelarasan:			
Susutnilai		148,095	148,012
Faedah dari deposit jangka pendek		(742,345)	(989,958)
(Kerugian)/kelebihan pendapatan dari operasi sebelum perubahan modal kerja		(1,169,374)	(391,164)
(Lebihan)/kurangan siberhutang		133,988	(36,401)
Lebihan sipiutang		230,818	(194,785)
Tunai bersih (ke)/dari aktiviti operasi		**(804,568)**	**(622,350)**
ALIRAN TUNAI DARI AKTIVITI PELABURAN			
Pembelian aset tetap		0	(1,650)
Faedah diterima		742,345	989,958
Tunai bersih (ke)/dari aktiviti pelaburan		**742,345**	**988,308**
(PENGURANGAN)/PERTAMBAHAN BERSIH TUNAI DAN KESETARAAN TUNAI		(62,223)	365,958
TUNAI DAN KESETARAAN TUNAI PADA AWAL TAHUN		11,432,289	11,066,331
TUNAI DAN KESETARAAN TUNAI PADA AKHIR TAHUN	7	11,370,066	11,432,289

NOTA-NOTA KEPADA AKAUN BERAKHIR PADA 31 DISEMBER 1999

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 ASET TETAP

	Perkakas pejabat RM	Komputer RM	Kenderaan bermotor RM	Pengubah-suaian RM	1999 RM	1998 RM
KOS						
Pada 1 Januari	82,398	242,632	304,604	1,108,398	1,738,032	1,736,382
Tambahan	0	0	0	0	0	1,650
Pada 31 Disember	82,398	242,632	304,604	1,108,398	1,738,032	1,738,032
SUSUTNILAI TERKUMPUL						
Pada 1 Januari	35,506	97,655	161,504	49,878	344,543	196,531
Dikenakan	16,480	48,526	60,921	22,168	148,095	148,012
Pada 31 Disember	51,986	146,181	222,425	72,046	492,638	344,543
NILAI BUKU BERSIH						
31.12.1999	30,412	96,451	82,179	1,036,352	1,245,394	-
31.12.1998	46,891	144,978	143,100	1,058,520	-	1,393,489

3 LAIN-LAIN SIBERHUTANG

	1999 RM	1998 RM
Pendahuluan	5,849	5,448
Faedah Terakru	24,212	158,601
	30,061	164,049

4 DEPOSIT JANGKA PENDEK

	1999 RM	1998 RM
Deposit disimpan dalam institusi kewangan berlesen	11,326,565	11,206,942

5 WANG TUNAI DAN BAKI DI BANK

	1999 RM	1998 RM
Bank	41,501	223,347
Tunai Runcit	2,000	2,000
	43,501	225,347

Termasuk dalam tunai dan baki dibank adalah baki:

	1999 RM	1998 RM
Geran Ranjit Baghwan Singh	61,625	16,540
Dana "Science Awareness Programme" - Petrosains	237,125	446,281

6 LAIN -LAIN SIPIUTANG

	1999 RM	1998 RM
Kumpulan Wang Simpanan Pekerja	10,856	9,191
Jabatan Hasil Dalam Negeri	2,377	3,259
Gaji	0	0
Pejabat Pencen	428	412
Cek yang belum ditunaikan	2,499	2,499
Sipiutang Am (Sundry Creditors)	317,698	103,284
S & T Polisi (prepayment)	17,100	0
Peruntukan Perkhid. Audit & Akaun	6,505	8,000
	357,463	126,645

7 TUNAI DAN KESETARAAN TUNAI

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

	1999 RM	1998 RM
Deposit jangka pendek	11,326,565	11,286,941
Wang tunai dan baki di bank	43,491	225,347
	[illegible]	[illegible]

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