AKADEMI SAINS MALAYSIA

laporan tahunan 2007 annual report

in pursuit of excellence in science

MOSTI

PERNYATAAN MISI
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... mencapai, menggalak, serta meningkatkan kecemerlangan dalam bidang sains, kejuruteraan dan teknologi khusus untuk kemajuan dan pembangunan Negara dan juga kebaikan manusia sejagat.

... the pursuit, encouragement and enhancement of excellence in the fields of science, engineering and technology for the development of the nation and the benefit of mankind.

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

Tel: 603 - 2694 9898
Fax: 603 - 2694 5858
E-mail: admin@akademisains.gov.my

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LAPORAN PRESIDEN
PRESIDENT'S REPORT



Tan Sri Datuk Dr
Yusof Basiron, FASc

Presiden, Akademi Sains Malaysia

President, Academy of Sciences Malaysia

Tahun ini, sambutan 50 tahun kemerdekaan Malaysia, sungguh bermakna kepada Negara kita. Tahun ini akan terpahat di ingatan buat selama-lamanya; kerana selaras dengan visi kita menjadi sebuah Negara kompetitif, Malaysia telah menjangkau peningkatan yang cemerlang dan memperoleh pengiktirafan global dalam arena sains angkasa. Kita telah berjaya meletakkan seorang insan di angkasa lepas—seorang angkasawan anak watan. Kejayaan ini merupakan hasil dedikasi ramai individu yang bertungkus-lumus tanpa mengenal penat lelah dalam menzahirkan program angkasa ini, terutamanya diterajui oleh Kementerian Sains, Teknologi dan Inovasi (MOSTI); dan Akademi juga turut berbangga kerana telah memainkan peranan.

This year, 50 years after Independence, has indeed been a significant one for our nation. It will be etched in memory for time immemorial; for in line with our vision of becoming a competitive nation, we saw a meteoric rise and global recognition of Malaysia in the arena of space science. We have put a man in space—our own cosmonaut. This was due to the dedication of many who have strived hard to realise this space programme, principally spear-headed by the Ministry of Science, Technology and Innovation (MOSTI); and the Academy is also proud to have had played its part in this.

PRESIDENT'S REPORT

Satu lagi mercu kecemerlangan Akademi—12 tahun selepas penubuhannya—ialah penerbitan *ASM Science Journal*. Pencapaian ini juga merupakan satu pencapaian yang membanggakan oleh ASM. Kini kita menyaingi institut dan akademi bertaraf dunia lain kerana berjaya menghasilkan sebuah jurnal saintifik yang mendapat pengiktirafan para pengamal sains, sekaligus menyumbang kepada pertumbuhan sains dan pengetahuan saintifik, serta terlibat sama dalam ledakan maklumat global. Pencapaian seterusnya ialah penganugerahan Felo Kehormat ASM oleh Akademi Sains Malaysia kepada Prof Ahmed Zewail, pemenang Hadiah Nobel dalam bidang kimia tahun 1999. Sebagai maklum an Prof Zewail merupakan ahli Lembaga Penasihat Antarabangsa untuk *ASM Science Journal*.

Sesungguhnya tahun 2007 mencatat banyak peristiwa bersejarah, sebagaimana yang dapat dilihat menerusi pelbagai aktiviti dan program S&T termasuk bengkel, forum dan seminar baik di arena tempatan mahupun di persada antarabangsa, dalam menyuntik kecemerlangan dan kesedaran dalam bidang sains, serta menjalin jaringan antarabangsa. Malah khidmat profesional, penjanaan akademik, ketekunan dan kecekalan yang menjadi tonggak kemajuan dan pertumbuhan dinamik dalam segala sektor aktiviti melalui pengukuhan fungsi teras kita juga terserlah. Sesungguhnya, keyakinan kita semakin memuncak berikutan peningkatan fungsi dan sumbangan yang diamanahkan kepada ASM. Sebagaimana yang dibuktikan melalui aktiviti kita yang kian meluas, pengerak utama di sebalik keterampilan Akademi ialah Kementerian Sains, Teknologi dan Inovasi (MOSTI) serta pembiayaannya. Akademi terus menerima peruntukan di bawah Rancangan Malaysia Kesembilan (RMK9) untuk enam projek selain pembiayaan beberapa projek terdahulu. MOSTI juga meyalurkan peruntukan dana kepada Akademi untuk beberapa projek dan aktiviti khusus/khas.

Kerja-kerja pembangunan sistem pemeringkatan yang membolehkan pemantauan prestasi program penyelidikan biayaan MOSTI sedang giat dijalankan. Sistem pemeringkatan ini menentukan dana P&P yang disalurkan kepada universiti dan institut penyelidikan berwibawa memacu Negara ke arah industri berteraskan pengetahuan serta mampu berdaya saing di arena global.

Di bawah RMK9, ASM diperuntukkan dana demi memperkasa keupayaan dan kemampuan saintis tempatan untuk bertindak sebagai penasihat kepada Negara dan menyediakan laporan strategik pakar berhubung isu

Another pip for the Academy—after nearly 12 years of its formation—is the publication of the *ASM Science Journal*. This also signifies a great achievement for ASM. We have now joined the status of other world academies and institutions in having a peer-reviewed scientific journal, contributing to the growth of science and scientific knowledge, and being part of the global information explosion. Another milestone was the conferment of Honorary Fellowship of ASM to the Nobel Laureate for Chemistry in 1999, Prof Ahmed Zewail, by the Academy of Sciences Malaysia. We are also aware that Prof Zewail is in the International Advisory Board of the *ASM Science Journal.*

Certainly the year 2007 was an eventful one, as evident from the numerous S&T activities and programmes, including workshops, fora and seminars locally and overseas, in fostering excellence and awareness in science and establishing international linkages. Moreover the professional service, academic output, hard work and perseverence leading to further progress and dynamic growth in all sectors of activities through consolidation of our core functions was also brought to light. Indeed we are all the more confident with the added functions and contributions entrusted on the Academy. As increasingly shown in our expanded activities, the prime force behind the Academy is the Ministry of Science, Technology and Innovation (MOSTI), and its funding. The Academy continued to receive funding under the 9th Malaysia Plan (9MP) for six projects besides continuation of funding for other earlier projects. MOSTI has also allocated funds to the Academy for special projects and activities.

Work in the development of a system of rating that would allow for tracking of the performance of research programmes/activities funded by MOSTI, is in progress. The ranking system ensures R&D funds allocated to universities and research institutions result in output that would propel the nation towards knowledge intensive industries and global competitiveness.

The Academy has been allocated 9MP funding to build on the capacity and capability of local scientists to carry out advisory roles to the nation and prepare expert strategic reports on STI issues.

STI. Akademi, menerusi Kumpulan Disiplin Perubatan, telah menghasilkan Laporan Kajian ASM bertajuk, *Perubahan Landskap Perhutanan: Kesan Terhadap Kesihatan Luar Bandar* yang telah diterbitkan tahun itu. Bagi membolehkan Laporan Kajian/Penasihat kepada Kerajaan untuk menangani isu berkaitan peningkatan dalam Sistem Bersepadu Tanaman Sawit-Haiwan Ruminan (ITCRS), satu bengkel dianjurkan dengan kerjasama MARDI demi mengenal pasti pilihan polisi yang sesuai untuk ITCRS dalam membantu agenda pembangunan Negara. Laporan Penasihat untuk Polisi dan Perancangan Respons terhadap Bencana Gempa Bumi dan Tsunami di Malaysia, Perubahan Iklim, dan Makanan Binatang Ternakan: Isu, Strategi dan Peluang, dijangka akan disiapkan sebelum hujung tahun 2008.

Kini banyak acara berada dalam perancangan Akademi bagi mengenal pasti teknologi yang berwibawa bagi menentukan agar Negara terus membangun. Nanoteknologi semakin dinobat sebagai wahana terkini yang berupaya menjulang pertumbuhan ekonomi dunia. Disebabkan tidak mahu terlepas peluang yang ditawarkan oleh sektor ini, Akademi telah menyediakan satu taklimat mengenai Initiatif Nanoteknologi Kebangsaan yang dijangka akan terus diperkukuh berdasarkan pengetahuan dan pengalaman negara-negara lain. Nanoteknologi Malaysia 2007, iaitu satu acara penting (29 November–1 Disember) yang dianjurkan buat julung kali sebagai acara utama di bawah Initiatif Nanoteknologi Kebangsaan, merupakan sebahagian daripada Pameran dan Persidangan Inovasi Kebangsaan. Prosiding dan laporan Persidangan ini sedang disusun. Satu misi ke California Nanosystems Institute, University of California, Los Angeles juga telah membantu Akademi memperoleh sokongan dalam menjalin kerjasama yang menguntungkan saintis Malaysia selain memupuk kenalan penting yang bakal dipelawa sebagai penceramah di Nanotech Malaysia 2007.

Sebagai sebuah Negara membangun dalam bidang STI, Malaysia telah menyediakan peruntukan untuk memperkasa keupayaan dan kemampuannya dalam bidang P&P. Akademi memainkan peranan penting dalam menyahut cabaran ini dengan menghayati budaya kecemerlangan sains melalui program-program yang dirumus bagi pelbagai kelompok sasaran. Menerusi wadah ini, Akademi mempelawa ramai Nobel Laureate dan saintis tersohor dengan hasrat menjalin jaringan dan kerjasama dengan pusat-pusat kecemerlangan S&T di serata dunia. Dalam konteks ini, ASM telah menyelaras lawatan YB Datuk Seri Dr Jamaludin Mohd Jarjis, Menteri Sains, Teknologi dan Inovasi, ke California Institute of Technology. Kunjungan ini membuka laluan kepada

The Academy through the Medical Discipline Group produced an ASM Study Report entitled *Changing Forest Landscape: Impact on Rural Health* which was published during the year. For a Study/Advisory Report to the Government to address issues related to improvement in the integrated tree crops-ruminant production systems (ITCRS), a workshop was held with the collaboration of MARDI to identify policy options appropriate to ITCRS to assist the nation's development agenda. Advisory Reports on P*olicy and Planning Responses for Earthquake and Tsunami Hazards in Malaysia, Climate Change*, and *Animal Feedstuff: Issues, Strategies and Opportunities*, are also expected to be delivered by the end of 2008.

Many events are planned by the Academy to identify technologies that would allow the nation to progress. Nanotechnology is being increasingly touted as a new engine for world economic growth. Not to miss out on the opportunities that this sector might open up, the Academy has prepared a brief on the National Nanotechnology Initiative which is expected to be further firmed up, drawing on the knowledge and experiences of other countries. Nanotechnology Malaysia 2007 was a one major event (29 November–1 December) which was organised for the first time as the highlight of the National Nanotechnology Initiative, forming part of the National Innovation Conference and Exhibition. Proceedings and reports on the Conference are being compiled. A mission to the California Nanosystems Institute, University of California, Los Angeles also assisted the Academy in securing support for mutually beneficial collaboration with Malaysian scientists and obtained useful contacts for invitation as speakers for Nanotech Malaysia 2007.

Malaysia as a rapid developing nation in STI has made provisions to increase its capacity and capability in R&D. The Academy plays a vital role in meeting this demand by fostering a culture of scientific excellence through programmes for various target groups. Through this platform, the Academy invites many Nobel laureates and eminent scientists with the aim of building networks and collaboration with many of the world's centres of excellence in S&T. In this context, ASM co-ordinated the visit of the Hon. Minister of Science, Technology and Innovation, Datuk Seri Dr Jamaludin Mohd Jarjis, to the California Institute of Technology. This resulted in the visit

lawatan Prof Ahmed Zewail, pemenang hadiah Nobel dalam bidang Kimia 1999, ke Malaysia bulan Ogos lalu untuk menghadiri beberapa program yang telah disediakan. Tiga pemegang hadiah Nobel lain juga telah menyampaikan syarahan umum, dialog, dan pidato sains. Justeru minat dalam bidang sains tersuntik dalam hati warga muda. Akademi, selaku rakan kongsi antarabangsa Majlis Lindau telah menyelaraskan penglibatan empat saintis muda daripada disiplin fisiologi atau perubatan di Mesyuarat Tahunan Para Pemenang Hadiah Nobel di Lindau. Penglibatan di majlis berprestij seumpama ini dapat membuka peluang kepada Penyelidik Malaysia mencapai kecemerlangan dalam bidang sains di samping mencapai pengiktirafan antarabangsa. Mesyuarat di Lindau juga menjadi satu forum saintifik yang unik dalam menyuntik dialog bagi merangsangkan penemuan baru dan penyelidikan harian mengenai kesan lebih meluas yang terjana hasil kerja P&P Laureate, yang sesungguhnya merupakan satu pengalaman pembelajaran luar biasa.

Dalam usaha membantu para saintis tersohor, yang mempunyai rekod kecemerlangan dalam sesuatu bidang utama di bidang sains asas, pembiayaan penyelidikan diberikan di bawah Pembiayaan Penyelidikan Saintifik Lanjutan (SAGA). Pembiayaan ini bermatlamat menjulang saintis sebegini ke persada pencapaian yang lebih unggul termasuk meraih pengiktirafan antarabangsa dalam penjanaan pengetahuan dan penemuan baru. Dewasa ini, 89 projek yang melibatkan hampir RM19.4 juta dibiayai menggunakan dana SAGA. Bidang penyelidikan utama yang dibiayai merangkumi bidang-bidang fisiologi/perubatan, kimia dan fizik seperti denggi, kanser, malaria, sel stem, produk bioaktif baru, nanostruktur/nanotiub baru dan hablur cecair. Berdasarkan Laporan Kemajuan Projek Bulan ke-20 untuk 59 projek dalam tahun 2007, SAGA yang membiayai saintis cemerlang yang mempunyai rekod kecemerlangan dalam bidang utama di bidang sains asas, berjaya menghasilkan 392 penerbitan sains dan tujuh paten hasil kerja P&P.

Berikutan kerumitan dan penekanan di bidang STI, negara harus membangunkan agenda penyelidikan yang lebih tertumpu kepada penekanan terhadap kecemerlangan. Tahun ini, Anugerah Sains Mahathir, anugerah kecemerlangan Malaysia yang paling berprestij untuk penyelidikan tropika telah dihadiahkan kepada Prof Joseph Sriyal Malik Peiris dari University of Hong Kong atas sumbangan cemerlang beliau terhadap perubatan tropika, khususnya penemuan agen etiologi yang menyebabkan SARS, seterusnya memahami patogenesis dan epidemiologi penyakit

of Prof Ahmed Zewail, the Nobel Laureate for Chemistry in 1999, to Malaysia in August to attend several planned programmes. Three other Nobel Laureates also gave public lectures, dialogues and scientific orations, and interest in science was inculcated in the young. The Academy, as one of the international partners of the Lindau Council facilitated the participation of four young scientists from the physiology or medical discipline at the Annual Meeting of the Nobel Prize Winners in Lindau. Participation in these prestigious meetings should pave the way for Malaysian researchers to achieve excellence in science as well as gain international recognition. The Lindau Meetings also provide a unique scientific forum for stimulating dialogue on new findings and day-to-day research on the wider consequences of the Laureate's R&D work, which constitute a remarkable learning experience.

In a move to support budding scientists with a proven track record in identified priority areas of fundamental sciences, research funding has been initiated under the Scientific Advancement Fund Allocation (SAGA). The aim of such an allocation is to allow these scientists to move to the next level of achievement including gaining international recognition for knowledge generation and new discoveries. Currently 89 projects amounting to about RM19.4 million are being funded with SAGA funds. The major research areas funded in the fields of physiology/medicine, chemistry and physics are dengue, cancer, malaria, stem cell, novel bioactive products, novel nanostructures/nanotubes and liquid crystals. SAGA which supports budding scientists with a proven track record in identified priority areas of research in fundamental sciences, yielded 392 scientific publications and 7 patents emanating from R&D work, based on the SAGA *20th Month Project Progress Reports* for 59 projects in 2007.

There is a need for the nation to develop a more focused research agenda with emphasis on excellence because of the increasing complexity and emphasis in STI. This year, the Mahathir Science Award, Malaysia's most prestigious scientific excellence Award for tropical research, was bestowed on Prof Joseph Sriyal Malik Peiris of the University of Hong Kong for his outstanding contribution to tropical medicine, specifically for his discovery of the aetiological agent causing SARS leading to the understanding of pathogenesis and epidemiology of the disease in 2003.

tersebut dalam tahun 2003. Pelawaan pencalonan bagi tahun 2008 dibuka melalui laman web Akademi. Kecemerlangan yang ditonjolkan melalui Anugerah ini amat penting untuk dipelihara demi pengiktirafan antarabangsa. Kecemerlangan saintifik juga memerlukan inovasi dan kreativiti di kalangan penyelidik dan bakat-bakat tersohor kita. Demi merangsang Agenda Inovasi Kebangsaan ke arah membangunkan modal intelek yang berwibawa bagi memacu ekonomi ke hadapan, tahun ini Akademi sekali lagi telah dimandatkan bagi menganjurkan Anugerah Inovasi Kebangsaan untuk pencipta inovasi dan penyelidik cemerlang kita serta mengetengahkan idea-idea ini supaya diberi penilaian pakar bagi tujuan pengkomersilan. Pemenang bersama Anugerah tahun ini ialah School of Computer Science, Universiti Sains Malaysia dan Dr Fazilah Fazan, AMREC, SIRIM (Kategori Produk); Mohd Shahrizan Ali dari Pusat Giatmara Kuantan, dan Bugs Tan Yeow Kiang (Kategori Akar Umbi); Unit Bank Tisu, Hospital Universiti Sains Malaysia (Kategori Perkhidmatan Awam) dan Sekolah Menengah Teknikal, Kuala Lumpur (Kategori Sekolah).

Aktiviti Kesedaran Sains kita telah diperkemas dari aspek strategi, pendekatan dan rangkuman subjek. Syarahan Memorial, Syarahan Perdana ASM, Siri Syarahan Sterling, Syarahan Tokoh Tersohor dan Syarahan Umum merupakan aktiviti utama kita dalam memperteguh dan berkongsi pengalaman serta membangunkan jaringan oleh masyarakat saintifik kita. Bagi menyuntik budaya celik sains di kalangan generasi muda, projek berterusan kita ialah Cabaran Sains Kebangsaan, Program Kembali ke Sekolah ASM dan pelbagai Program Jangkauan Luar. Sejajar dengan RMK9, Cabaran Sains Kebangsaan telah dinaik taraf melalui penukaran format bertujuan membolehkan pelajar yang merangkul kemenangan berada di persada yang setanding dengan pelajar antarabangsa. Penuntut yang mengambil bahagian disyaratkan mempunyai kemahiran dari segi praktikal dan teori. Kini pertandingan ini terserlah sebagai acara tahunan yang ulung dan penukaran formatnya menyamai pembangunan bidang STI di arena antarabangsa selain menjadi aspirasi pendidikan kita.

Akademi juga telah diperuntukkan dana untuk memperkukuh jaringan S&T dengan Pertubuhan Negara-negara Islam (OIC) dan negara lain dan tindakan ini semakin ketara menerusi peranan penganjuran bersama yang dikendalikan oleh Akademi, selain kehadiran banyak negara-negara OIC di acara-acara berikut. Pertama, Simposium Antarabangsa terhadap Sains, Teknologi dan Inovasi Islam bertemakan '*Towards a Properous and Secure Islamic World*' yang telah melibatkan World Islamic Call Society, Islamic World Academy of Sciences,

Call for norminations for the 2008 Award was announced in the ASM website. It is important that the excellence that this Award signifies is sustained for international recognition. Scientific excellence also calls for innovation and creativity among our top notch researchers and talents. To invigorate the national Innovation Agenda towards developing intellectual capital to propel the economy forward, this year the Academy was again entrusted with organising a National Innovation Award for our outstanding innovators and researchers and to draw on these ideas for expert evaluation for possible commercialisation. This year the Award was jointly won by the School of Computer Sciences, Universiti Sains Malaysia and Dr Fazilah Fazan, AMREC, SIRIM (for Product Category); Mohd Shahrizan Ali of Pusat Giatmara Kuantan, and Bugs Tan Yeow Kiang (Grass Root Category); Tissue Bank Unit, Hospital Universiti Sains Malaysia (Public Services Category) and Secondary Technical School, Kuala Lumpur (School Category).

Our Science Awareness activities have seen further refining in strategies, approaches and subject areas. Memorial Lectures, ASM Inaugural Lectures, Sterling Lecture Series, Eminent Persons' Lectures and Public Lectures constitute a steady component of our efforts towards strengthening and sharing of experiences and building on linkages by our scientific community. Towards inculcating a culture of scientific inquiry among the young, our ongoing projects are the National Science Challenge, ASM Back to School Programme and various Outreach Programmes. For the National Science Challenge, in line with the 9MP, the competition was upgraded with a change in format to enable winning students to be at par with international students. Participating students are required to be proficient at practical and theoretical levels. The competition has now emerged as a premier annual event and changes to the format are equal to international developments in STI and our educational aspirations.

The Academy has also been given funds to consolidate S&T linkages with OIC and other countries and this was evident by the significant co-organising role played by the Academy, and the participation of many from the OIC countries in the following events. Firstly, the International Symposium on Islamic Science, Technology and Innovation with the theme 'Towards a Prosperous and Secure Islamic World' which involved the World Islamic Call Society, Islamic World Academy of Sciences,

Pertubuhan Pendidikan Sains dan Pendidikan Islam , Scientific and Cultural Organisation, Bank Pembangunan Islam, Akademi Saintis Muda Dunia dan Akademi Sains Dunia Ketiga. Simposium ini diadakan pada 9–11 Ogos bertempat di Pusat Konvensyen Kuala Lumpur dan bermatlamat memperlihatkan bahawa Islam bukan setakat menegaskan soal agama malah memberi penekanan penting soal memperoleh pengetahuan S&T untuk pembangunan ekonomi dan modal insan. Aktiviti kedua merupakan Bengkel Belia Antarabangsa terhadap STI, diadakan pada 6–7 Ogos juga di tempat yang sama. Bengkel ini mendapat sokongan Bank Pembangunan Islam, Akademi Sains Dunia Islam, Akademi Sains Dalam Dunia Membangun, Jawatankuasa Tetap Kerjasama Sains dan Teknologi OIC, dan Pertubuhan Pendidikan Sains dan Kebudayaan Islam. Bengkel ini bermatlamat membangunkan satu forum belia dan jaringan STI dan mempromosi konsep pembangunan modal manusia dari perspektif Islam Hadhari. Sejumlah 90 saintis muda menghadiri bengkel ini. Daripada jumlah ini kesemua hadirin, kecuali 25 peserta, datang daripada 14 buah negara OIC. Di penghujung bengkel, satu resolusi mengenai belia Muslim dalam bidang STI dirumus. Para peserta juga komited dalam mewujudkan portal-portal pengurusan pengetahuan STI selain berkongsi serta membangunkan secara bersama perkakas untuk pengurusan penyelidikan oleh penyelidik muda di negara-negara Islam. Satu lagi, Kursus Latihan Pengurusan S&T untuk para Penyelidik di Negara OIC juga telah dikelolakan di Kuala Lumpur. Terakhir sekali, pameran mengenai 'Kecemerlangan Sains dalam Tamadun Islam: Sains Islam Mendahului Zaman' diadakan pada 8 Januari–14 Februari bertempat di Pusat Konvensyen Kuala Lumpur. Pameran kelolaan MOSTI, Pusat Sains Kebangsaan dan ASM dengan kerjasama Institut Sejarah Sains Arab - Islam, Frankfurt, Germany ini dikunjungi lebih suku juta pengunjung.

Jaringan dengan institut-institut penyelidikan antarabangsa, akademi-akademi dan institusi-institusi pembelajaran tinggi lain dimeterai bagi mempromosi interaksi di serata dunia secara kental dan penuh bersemangat telah diperkukuh dan meliputi bidang yang seimbang lagi merangkumi pelbagai disiplin sains. Perwakilan ASM hadir di beberapa mesyuarat antarabangsa dan akademi telah diberi kesempatan untuk menceburi banyak projek. Ini merupakan satu perkembangan yang sungguh bermakna dalam misi Akademi mencapai kecemerlangan di bidang sains demi pembangunan Negara dan manfaat manusia segajat.

Penubuhan pejabat serantau Majlis Antarabangsa Sains (ICSU) untuk Asia dan Pasifik, pada tahun 2006,

Islamic Education, Scientific and Cultural Organisation, Islamic Development Bank, World Academy of Young Scientists and the Third World Academy of Sciences. This was held from 9–11 August at the KL Convention Centre. The aim was to reveal that Islam not only emphasises on religion but also places utmost importance on acquiring knowledge in S&T for economic and human capital development. The other is the two-day International Youth Workshop on STI, held at the same venue from 6–7 August, supported by the Islamic Development Bank, Islamic World Academy of Science, Academy of Sciences in the Developing World, OIC Standing Committee on Scientific and Technological Co-operation, and Islamic Educational Scientific and Cultural Organisation. The objectives of the workshop were to establish a youth forum and networking in STI and to promote a concept of human capital development from the perspective of Islam *Hadhari*. A total of 90 young scientists attended the Workshop. All but 25 were from 14 OIC countries. At the end of the Workshop, a resolution on Muslim youths in STI was produced. The participants were also committed to establish STI knowledge management portals and to share and co-develop new tools for research management for young scientists in the Islamic countries. Yet another S&T Management Training Course for Researchers in OIC Countries was also held in Kuala Lumpur, and finally, an exhibition on 'Scientific Excellence in Islamic Civilisation: Islamic Science Ahead of its Time' was held from 8 January–14 February at the KL Convention Hall. More than a quarter of a million people visited the exhibition which was organized by MOSTI, National Science Centre and ASM in collaboration with the Institute for the History of Arab-Islamic Sciences, Frankfurt, Germany.

Linkages with international research institutions, other world academies and institutions of higher learning designed to promote robust and vigorous interactions across the globe were well consolidated and have covered balanced and varied disciplines of the sciences. ASM was represented in several international meetings and the Academy has been given the opportunity to participate in many projects. This is a significant development for the Academy in our mission to pursue excellence in science for development of the nation and benefit of mankind.

The establishment of the International Council for Science (ICSU) regional office for Asia and the Pacific, in

atas penajaan Akademi telah menyumbang terhadap memperkukuh jaringan Akademi dengan badan-badan S&T antarabangsa. Dalam pada itu, satu lagi perkembangan yang tidak kurang pentingnya ialah persetujuan Kerajaan membangunkan Pusat Kerjasama Selatan - Selatan Antarabangsa dalam bidang STI di Kuala Lumpur, di bawah naungan UNESCO demi meningkatkan keupayaan pengurusan STI di semua negara membangun. Perkembangan ini juga akan menyumbang kepada perkukuhan jaringan Akademi dengan Badan-badan S&T dalam ekonomi yang sedang membangun.

Program Penyelidikan Antartika Malaysia (MARP) telah mengalami peneguhan dan kemajuan ketara berikutan peningkatan projek-projek penyelidikan baru dan usaha kerjasama. Dalam tahun 2007, sepuluh projek penyelidikan biologi dan tujuh penyelidikan sains fizikal dijalankan. MARP juga telah mempertingkat keupayaan dalam soal tenaga manusia. Pendek kata MARP telah mengorak langkah demi menjulang penyelidikan Malaysia ke tahap kelas dunia di samping mempromosi kerjasama di peringkat kebangsaan dan antarabangsa bagi memperkasa keupayaan dan kemampuan sains Negara. Sokongan ASM dan berbagai-bagai kementerian Kerajaan teramat penting dalam menentukan MARP mengekalkan momentumnya dalam usaha meletakkan Malaysia di kalangan masyarakat saintifik antarabangsa dan dalam Sistem Perjanjian Antartika. Kerja-kerja penyelidikan juga telah memperhebatkan sumbangan saintis Malaysia dalam isu-isu global seperti perubahan iklim, pemuliharaan persekitaran, dan secara tidak langsung memperteguhkan penglibatan kita dalam mempromosi Antartika sebagai milik bersama manusia sejagat baik di perhimpunan Bangsa-Bangsa Bersatu mahupun forum antarabangsa lain. Kini program pendidikan ini mempunyai lapan pemegang ijazah PhD, 21 pemegang ijazah MSc dan tujuh mahasiswa yang berkecimpung dalam pelbagai bidang penyelidikan saintifik di Antartika.

Berikutan kecemerlangan felo-felo yang mempunyai pelbagai kepakaran disiplin, Akademi ini kerap diundang untuk terlibat sama dalam projek-projek penting terutama yang penting kepada MOSTI. Kementerian telah mengamanahkan Akademi bertanggungjawab dalam pelaksanaan beberapa inisiatif dan demi mencapai matlamat ini Akademi telah membangunkan beberapa panel kajisemula pakar. Pada tahun 2005, ASM dilantik sebagai agensi peneraju berhubung 'Bencana Seismos dan Tsunami dan Kajian Risiko di Malaysia' dan diberi kepercayaan untuk mengendalikan dan menyelaraskan pelaksanaan kajian ini. Hingga kini, ASM

2006, hosted by the Academy has contributed towards further strengthening of the Academy's linkages with international S&T bodies. On the same note, of equal significance is the approval by the Government to set up the International Centre for South-South Co-operation in STI in Kuala Lumpur, under the Auspices of UNESCO to increase the capacity for management of STI throughout developing countries. It will also contribute towards further strengthening the Academy's linkages with S&T bodies in developing economies.

The Malaysian Antarctica Research Programme (MARP) has seen further consolidation and progress with the admission of new research projects and collaborations. Ten biological and seven physical science research projects were undertaken in 2007. MARP has also increased its capacity in the area of human resource. Overall, MARP has forged the way to bring Malaysia's research to a world-class level as well as promote national and international co-operation to increase the nation's scientific capability and capacity. The support of ASM and the various ministries in the Government is vital in order for MARP to maintain its momentum to secure Malaysia's place in the international scientific community as well as the Antarctic Treaty System. Research efforts have also increased Malaysian scientific contributions on global issues such as climate change and environmental conservation and indirectly strengthened our stake in promoting Antarctica as a common heritage for all mankind in UN and other international fora. The research programme currently has 8 PhD, 21 MSc and seven undergraduate candidates working on various fields of scientific research in Antarctica.

By virtue of pre-eminance of its Fellows and the multi-disciplinary nature of its expertise, the Academy is frequently called upon to undertake important projects of especial significance for MOSTI. The Ministry has entrusted the Academy to undertake the implementation of a number of initiatives and towards this, the Academy has set up a number of expert review panels. In 2005 ASM was appointed as the lead organization in Seismic and Tsunami Hazards and Risk Study in Malaysia and was entrusted to manage and co-ordinate the implementation of the study. To date, ASM has submitted three progress

telah membentangkan tiga laporan kemajuan kepada 'Jawatankuasa Antara Agensi kepada Pengurusan Risiko Gempa Bumi dan Tsunami'. Kajian ini dijangka siap sebelum September 2008.

Program Brain Gain juga mencerminkan peranan dan kepakaran Akademi dalam menentukan penyediaan laporan pakar strategik berhubung pelbagai aspek penerapan STI. Malaysia perlu membangunkan asas yang kuat dan menyediakan kepakaran secara berterusan demi mempertingkatkan kadar inovasi seraya menjulang daya saing Negara. Selain ini, Malaysia perlu melipatgandakan kerjasama P&P untuk meningkatkan tahap inovasi kebangsaan, penghasilan penyelidikan tempatan dan kejayaan pengkomersilan. Program Brain Gain baru Malaysia meneliti cara-cara inovatif untuk mencungkil kepakaran saintis antarabangsa yang tersohor, tanpa memerlukan mereka berpindah secara fizikal. Definisi baru Brain Gain menggandingkan para saintis dengan industri—demi merapatkan jurang antara para saintis dan pengkomersilan. Tambahan pula, program Brain Gain ini akan menumpukan fokus memenuhi permintaan pasaran dengan mengembleng tenaga dengan sektor awam untuk menepati keperluan kepakaran mereka. Panel Kajisemula Pakar telah membuat dua puluh tujuh kunjungan jerayawara ke institusi-institusi dan satu ke sebuah Institut Penyelidikan. Tujuh permohonan di bawah setiap program iaitu Program Pelawat Unggul dan *International Fellowship* dan *Post Doctoral Programme* diluluskan. Satu lawatan promosi publisiti ke Amerika Syarikat mengenai Program Brain Gain Malaysia telah dirancang dari 22 Julai – 1 Ogos 2007.

Satu lagi bidang yang dititikberatkan oleh Kerajaan merupakan pendekatan strategik terhadap Pendidikan Sains. Akademi telah diberi peruntukan di bawah RMK9 menerusi Program Jangkauan Luar Pendidikan Sains. Objektif Program ini ialah untuk memperkasa sistem pendidikan Negara terutama dalam bidang sains dan teknologi demi pertumbuhan dan pembangunan ekonomi, dan untuk menanam sifat kreativiti dan kecemerlangan di kalangan pendidik mata pelajaran sains dan matematiks.

Sepanjang tempoh lima tahun RMK9, Akademi telah diberikan peruntukan untuk memulakan program penerbitan termasuk jurnal saintifik bertaraf antarabangsa dan mendapat pengiktirafan pengamal. Justeru lahirlah *ASM Science Journal* sebagai satu wadah penyebaran penemuan P&P, analisis polisi dan prespektif penyelidikan yang berwibawa. Isu pertama *ASM Sc. J.*, Vol 1, No.1, 2007 yang merangkumi pelbagai disiplin diterbitkan

reports to the Inter-Agency Committee on Earthquake and Tsunami Risk Management. The study is expected to be completed by September 2008.

The Brain Gain Programme also reflects the role and expertise of the Academy in requiring the preparation of strategic expert reports on various aspects of STI uptake. Malaysia needs to develop a strong base and supply of scientists to increase the pace of innovation and improve national competitiveness. In addition, it needs to intensify R&D collaboration to increase national innovation levels, indigenous research output and commercialisation successes. Malaysia's new Brain Gain Programme looks at innovative ways to tap into the expertise of top international scientists, without physically relocating these individuals. The new definition of Brain Gain links scientists with industry—to bridge the gap between research and commercialisation. In addition, the Brain Gain programme will focus on fulfilling market demands by working with the private sector to meet their need for talents. Twenty-seven roadshow visits were made to institutions and one to a research institute by the expert review panel. Seven applications each under the Distinguished Visitor Programme and International Fellowship and Post-doctoral Programme were also approved. A promotion tour to the USA to publicize the Brain Gain Malaysia programme was also undertaken on 22 July – 1 August 2007.

Another area of concern to the Government is the strategic approach to Science Education. The Academy has been given a 9MP allocation under the Science Education Outreach Programme. The objectives of the Programme are to strengthen the Nation's education system in the areas of science and technology for the growth and development of the economy, and to instill the educators of science and mathematics with a sense of creativity and excellence.

Over the five-year period of the 9MP, the Academy has been given funding to initiate a publications programme including an internationally recognised and peer-reviewed primary scientific journal. Thus the *ASM Science Journal* was initiated to serve as a forum for disseminating significant R&D findings, policy analyses and research perspectives. The first issue of our multi-disciplinary *ASM Sc. J.*, Vol. 1, No. 1, 2007 was published

pada suku ketiga tahun 2007 dan sebanyak 1700 naskah diedar ke serata dunia sebagai naskah hadiah untuk publisiti serta menarik sumbangan artikel. Penerbitan isu bertema mengenai Antartika/Ekspedisi ke kutub dan fotonik masih dalam perancangan, selain memaparkan seluruh Jurnal di Internet sebagai capaian terbuka. Sementara itu penerbitan seperti terbitan bulanan *Estidotmy* yang diterbitkan secara berterusan disasar agar dapat menyuntik lebih kesedaran dan minat dalam bidang sains di kalangan belia kita. Dengan tekad yang kental Akademi mempromosi penggunaan bahasa Melayu dalam bidang S&T. Dalam memenuhi hasrat ini, sepanjang tahun ini, dua penerbitan iaitu *Pengembaraan Merentasi Masa: Satu Perjalanan ke Arah Hadiah Nobel* dan *Kecemerlangan Sains dalam Tamadun Islam: Sains Islam Mendahului Zaman* telah diterjemah daripada bahasa Inggeris. *Estidotmy* merupakan penerbitan berbilang bahasa.

Kita telah menjangkaui batas usia 12 tahun dan peranan Akademi ditakrif semula dalam menentukan arah tuju atau 'Pelan Strategi' baru Akademi telah dimeterai—ini merupakan satu lagi haluan dalam proses pertumbuhan kita. Sesungguhnya, pelaksanaan strategi ini sudah pun dikuatkuasakan: dalam proses penerbitan kita, carta aliran telah digunakan untuk Laporan Penasihat ASM. Sebaik sahaja rancangan strategik dinamik ini diselaraskan sepenuhnya, kita akan menggaris semula akan peri penting peranan kita, bukan hanya sebagai penasihat kepada Kerajaan berhubung STI, malah skop dan aktiviti kita akan dirombak semula mengikut penekanan semasa sebagaimana yang digariskan oleh MOSTI dan ekonomi Negara yang berasaskan inovasi; selain terus memainkan peranannya sebagai penyumbang pemikiran terhadap agenda S&T Negara dalam peringkat pertumbuhan dan pembangunan yang semakin kritikal. S&T telah menjalani evolusi dan kerumitan, justeru kita mestilah bersedia menjejaki perbatasan baru dalam mencari kebenaran, sesungguhnya itulah sains.

Sepanjang tahun ini, usaha yang bukan kepalang dan pelaburan dana serta masa yang bukan sedikit telah dicurahkan melalui pelbagai aktiviti. Hasrat murni Akademi, selaku contoh yang ulung di bidang sains untuk Negara serta kebaikan masyarakat, ialah setiap tindakan akan dikuasai dengan penuh dedikasi daripada semua pihak, demi memastikan benih yang disemai menghasilkan pulangan lumayan mengikut masanya—demi kemakmuran Negara.

Saya ingin mengambil kesempatan ini untuk merakamkan setinggi-tinggi penghargaan kepada Kerajaan Malaysia, khususnya kepada Yang Berhormat Menteri Sains,

during the third quarter of 2007 and 1700 copies have been sent throughout the world as complimentary copies to publicize the Journal and to attract article contributions. Plans are afoot to publish thematic issues on Antarctic/Polar expedition and photonics, and for the full text of the Journal to be made available on the internet as open access. Meanwhile publications such as the monthly *Estidotmy*, targeted at inculcating greater awareness and interest in science among our young have been regularly published. The Academy has keenly promoted the Malay language in the use of S&T, and in this endeavour two publications during the year, namely *Pengembaraan Merentasi Masa: Satu Perjalanan ke Arah Hadiah Nobel* and *Kecemerlangan Sains dalam Tamadun Islam: Sains Islam Mendahului Zaman* were translated from English. *Estidotmy* is a multi-lingual publication.

We have passed the 12-year mark since our inception and the Academy's re-defined role has been finalised in the Academy's new roadmap or 'Strategy Plan'—this is another direction in the growth process. In fact, implementation of this has already begun in real earnest: we have applied the flow chart for ASM Advisory Reports in our publication process. Once the dynamic stategic plan is fully adopted we will re-affirm our relevance not only as an advisor to the Government on STI but our scope and activities will be re-alligned with the present emphasis of MOSTI's and the nation's 'innovation-led economy' and continue to perform the role of a thought provider to the nation's S&T agenda in this increasingly critical stage of our growth and development. S&T has evolved with time and in complexity and we must be geared to seek new frontiers in the search for truth, that is science.

Great efforts, substantive funds and time were invested in varied activities during the year; and it is the sincere desire of the Academy as a paragon in science for the nation and the betterment of society, that every effort will be mustered, with sincere dedication of all quarters concerned, to ensure that these seeds planted will reap a great harvest in due time—all for the progress of the Nation.

I would like to take this opportunity to express my deep gratitude to the Government of Malaysia, particularly the Honourable Minister of Science, Technology and

PRESIDENT'S REPORT

Teknologi dan Inovasi, atas sokongan padu Kementerian beliau (MOSTI) yang telah membolehkan Akademi menjejaki objektifnya. Sesungguhnya kita menghargai keyakinan yang diletakkan di bahu Akademi dalam melaksanakan projek-projek ini serta memastikan semuanya membuahkan hasil. Juga saya ingin memanjatkan rasa terima kasih kepada ahli akademi, para felo, institut penyelidikan, institusi pengajian tinggi, dan komuniti saintifik yang sudi meluangkan masa dan tenaga demi kesejahteraan Akademi. Akhir kata, syabas dan terima kasih yang tidak terhingga kepada semua sekretariat Akademi Sains Malaysia atas dedikasi, komitmen dan ketekunan yang dicurahkan sepanjang menjalankan tugas. Penghargaan tulus saya juga ditujukan kepada semua 'Rakan Erat' Akademi.

Innovation, and the support of the Ministry (MOSTI) which has enabled the Academy to pursue its objective. We certainly appreciate the confidence accorded to the Academy to undertake these projects and bring it to successful fruition. I would also like to acknowledge my appreciation to the Academicians, Fellows, research institutes, institutions of higher learning, and the scientific community for making available their time and effort to the cause of the Academy. Finally, *syabas* and a very sincere thank you to the staff at the ASM Secretariat for their dedication, commitment and diligence in carrying out their tasks. My sincere appreciation is also conveyed to all the dear 'Friends' of the Academy.



Tan Sri Datuk Dr Yusof Basiron, FASc

Presiden, Akademi Sains Malaysia

President, Academy of Sciences Malaysia

FUNGSI ASM
FUNCTIONS OF ASM

Menggalakkan dan merangsang pembangunan sains, kejuruteraan dan teknologi	To promote and foster the development of science, engineering and technology
Mengadakan forum pertukaran pendapat di kalangan ahli sains, jurutera dan ahli teknologi	To provide a forum for the inter-change of ideas among scientists, engineers and technologists
Menggalakkan kesedaran, pemahaman dan penghargaan akan negara peranan sains, kejuruteraan dan teknologi dalam kemajuan manusia	To promote national awareness, understanding and appreciation of the role of science, engineering and technology in human progress
Menggalakkan daya reka-ciptaan di kalangan ahli sains, jurutera dan ahli teknologi	To promote creativity among scientists, engineers and technologists
Menggalakkan sifat berdikari negara dalam bidang sains, kejuruteraan dan teknologi	To promote national self-reliance in the fields of science, engineering and technology
Bertindak sebagai forum bagi 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 pembangunan negara	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
Menganalisa masalah-masalah tertentu negara dan mengenalpasti di mana sains, kejuruteraan dan teknologi dapat memberi sumbangan kepada penyelesaian masalah dengan membuat syor-syor kepada Kerajaan	To analyse particular national problems and identify where science, engineering and technology can contribute to their solution and accordingly to make recommendations to the Government
Sentiasa mengambil perhatian tentang perkembangan sains, kejuruteraan dan teknologi serta mengenalpasti perkembangan yang relevan dengan keperluan negara dan membawa kepada perhatian Kerajaan akan perkembangannya	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
Menyediakan laporan, kertas-kerja atau dokumen lain berhubungan dengan dasar sains, kejuruteraan dan teknologi negara dan membuat syor-syor yang perlu kepada Kerajaan	To prepare reports, papers or other documents relating to the national science, engineering and technology policy and make the necessary recommendations to the Government

FUNCTIONS OF ASM

Mendayausahakan dan membiayai kajian pelbagai disiplin yang berkaitan serta keperluan pemahaman yang lebih mendalam tentang implikasi sosial dan ekonomi yang terbit dari sains, kejuruteraan dan teknologi	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
Menggalakkan penyelidikan dan pembangunan dan pendidikan serta latihan untuk tenaga manusia yang sesuai dalam bidang saintifik, kejuruteraan dan teknologi	To encourage research and development and education and training of human resource in the appropriate scientific,engineering and technical fields
Mengadakan dan mengekalkan hubungan antara Akademi dan badan-badan luar negeri yang mempunyai objektif yang hampir serupa dengan objektif Akademi	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
Melakukan apa-apa perkara lain dalam bidang sains, kejuruteraan dan teknologi sebagaimana yang diminta oleh Kerajaan dari semasa ke semasa	To advise on matters related to science, engineering and technology as may be requested by the Government from time to time
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 do such other acts which are consistent with 1994 Academy of Sciences 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.

PIAGAM PELANGGAN SEKRETARIAT
SECRETARIAT CLIENT CHARTER

Kami, Sekretariat ASM, berjanji dan komited untuk memberi perkhidmatan yang profesional, berkualiti, cekap dan mesra kepada pelanggan ke arah pencapaian kecemerlangan sains, kejuruteraan dan teknologi melalui:

- Pemberian perkhidmatan keurusetiaan kepada Majlis, Jawatankuasa Kerja dan Badan Bertindak.
- Pemberian perkhidmatan sokongan kepada Felo.
- Pengurusan dan pemantauan Projek Rancangan Malaysia Ke-9 (RMK9) mengikut Indikator Prestasi Kerja (KPI) yang telah ditetapkan.
- Pelaksanaan Projek Khas mengikut terma dan tempoh yang ditentukan oleh pihak berkepentingan.

We, the ASM Secretariat promise and commit to provide professional, quality, efficient and friendly service to our clients in pursuit of excellence in science, engineering, and technology by:

- Providing secretariat services to the Council, Working Committees, and Task Force.
- Providing support services to Fellows.
- Managing and monitoring Ninth Malaysia Plan (9MP) projects according to the determined Key Performance Indicators.
- Implementing Special Projects according to the required terms and time frame determined by the stakeholders.



FELO KEHORMAT
HONORARY FELLOW



YAB Dato' Seri Abdullah Ahmad Badawi

Perdana Menteri Malaysia

Prime Minister of Malaysia



YABhg Tun Dr Mahathir Mohamad

Bekas Perdana Menteri Malaysia

Former Prime Minister of Malaysia

HONORARY FELLOW



Nobel Laureate Prof Ahmed H. Zewail

Pemenang Hadiah Nobel 1999 (Kimia)

Nobel Laureate 1999 (Chemistry)

FELO KANAN
SENIOR FELLOWS



Academician Datuk Dr Abdul Aziz S. A. Kadir, FASc

Felo Kanan Baru dilantik pada 2007
New Senior Fellow appointed in 2007

1	Academician Tan Sri Datuk Dr Omar Abdul Rahman, FASc	S&T Development and Industry	Senior Fellow 1999
2	Academician Dato' Ir Lee Yee Cheong, FASc	Engineering Sciences	Senior Fellow 1999
3	Academician Tan Sri Datuk Dr Augustine Ong Soon Hock, FASc	Chemical Sciences	Senior Fellow 1999
4	Academician Dr M. K. Rajakumar, FASc	Medical Sciences	Senior Fellow 1999
5	Academician Tan Sri Dato' Dr Mohd Rashdan Baba, FASc	S&T Development and Industry	Senior Fellow 2001
6	Academician Emeritus Prof Yong Hoi Sen, FASc	Biological Sciences	Senior Fellow 2002
7	Academician Tan Sri Dato' Seri Ir (Dr) Shamsuddin Abdul Kadir, FASc	Information Technology	Senior Fellow 2002
8	Academician Dato' Seri Dr Salleh Mohd Nor, FASc	Biological Sciences	Senior Fellow 2004
9	Academician Prof Looi Lai Meng, FASc	Medical Sciences	Senior Fellow 2005
10	Academician Datuk Dr M. Jegathesan, FASc	Medical Sciences	Senior Fellow 2006

FELO BARU
NEW FELLOWS



Tan Sri Datuk Dr Mohd Ismail Merican, FASc



Prof Cheah Phaik Leng, FASc



Dr Lim Boo Liat, FASc



Prof Datin Paduka Khatijah Mohd Yusoff, FASc



Prof Roslan Abd Shukor, FASc



Prof Wong Chiow San, FASc



Dr Goh Lai Yoong neé Wong Lai Yoong, FASc



Prof Dato' Muhammad Idiris Saleh, FASc



Datuk Dr Ahmad Tasir Lope Pihie, FASc



Dr Ahmad Ibrahim, FASc

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2. Academician Prof Looi Lai Meng, FASc
3. Academician Datuk Dr M. Jegathesan, FASc
4. Tan Sri Dato' Seri Dr Abdul Majid Ismail, FASc
5. Prof Mak Joon Wah, FASc
6. Dato' Dr Lim Kee Jin, FASc
7. Datuk Dr Hussein Awang, FASc
8. Emeritus Prof Dato' Khalid Abdul Kadir, FASc
9. Datuk Dr G. Sreenevasan, FASc
10. Tan Sri Dato' Dr Yahya Awang, FASc
11. Tan Sri Dato' Dr Abu Bakar Dato' Suleiman, FASc
12. Emeritus Prof Dato' Lam Sai Kit, FASc
13. Tan Sri Dato' Seri Musa Mohamad, FASc
14. Dato' Paduka Dr Mustaffa Embong, FASc
15. Prof Puan Sri Datin Nafisah Nik Mohd Adeeb, FASc
16. Cmdr Prof Dato' Hashim Yaacob, FASc
17. Prof Yap Sook Fan, FASc
18. Prof Cheong Soon-Keng, FASc
19. Prof Dato' Khairul Anuar Abdullah, FASc
20. Prof Dato' C. P. Ramachandran, FASc
21. Prof Asma Ismail, FASc
22. Prof Dato' Anuar Zaini Md Zain, FASc
23. Prof Victor Lim Kok Eow @ Azman Lim, FASc
24. Prof Dato' Khalid Yusoff, FASc
25. Prof Dato' Sharifah Hapsah Syed Hasan Shahabudin, FASc
26. Prof Mohd Ismail Noor, FASc
27. Tan Sri Datuk Dr Mohd Ismail Merican, FASc
28. Prof Cheah Phaik Leng, FASc

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3. Tan Sri Dato' Ir Dr Shahrizaila Abdullah, FASc
4. Dato' Dr Muhammad Ridzuan Salleh, FASc
5. Tan Sri Dato' Ir Muhammad Yusuff Muhammad Yunus, FASc
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7. En Hijjas Kasturi, FASc
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13. Prof Abang Abdullah Abang Ali, FASc
14. Prof Dato' Sahol Hamid Abu Bakar, FASc
15. Prof Mohd Ali Hashim, FASc
16. Dr Ma Ah Ngan, FASc
17. Prof Dato' Goh Sing Yau, FASc
18. Dato' Seri Dr Jamaludin Mohd Jarjis, FASc
19. Prof Radin Umar Radin Sohadi, FASc
20. Tan Sri Prof Mohd Zulkifli Tan Sri Mohd Ghazali, FASc
21. Prof Tan Hong Siang, FASc
22. Prof Datuk Ow Chee Sheng, FASc

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3. Emeritus Prof Abdul Latif Ibrahim, FASc
4. Emeritus Prof Dato' Ahmad Nawawi Ayob, FASc
5. Emeritus Prof Tan Sri Dato' Syed Jalaluddin Syed Salim, FASc
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11. Prof Mak Chai @ Mak Lian Fong, FASc
12. Prof Ho Yin Wan, FASc
13. Assoc. Prof Koh Chong Lek, FASc
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15. Dr Rajanaidu Nookiah, FASc
16. Prof Dato' Sheikh Omar Abdul Rahman, FASc
17. Prof Muhamad Awang, FASc
18. Emeritus Prof Dato' Mohamed Mahyuddin Mohd Dahan, FASc
19. Dato' Dr Yeang Hoong Yeat, FASc
20. Prof Dato' Abdul Latiff Mohamad, FASc
21. Prof Ghazally Ismail, FASc
22. Prof Mohamed Abdul Majid, FASc
23. Prof Helen Nair, FASc
24. Dr Soh Aik Chin, FASc
25. Dr C. Devendra, FASc
26. Dr Lim Boo Liat, FASc
27. Prof Datin Paduka Khatijah Mohd Yusoff, FASc

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2. Tan Sri Datuk Dr Ahmad Tajuddin Ali, FASc
3. Emeritus Prof Dato' Mohd Sham Mohd Sani, FASc
4. Prof Datuk R. Ratnalingam, FASc
5. Datuk Fateh Chand, FASc
6. Dr Shaharir Mohamed Zain, FASc
7. Sr. Prof Chia Swee Ping, FASc
8. Dr Fon Wai Chu, FASc
9. Prof Dato' Hassan Said, FASc
10. Prof Dato' Chuah Hean Teik, FASc
11. Prof Datuk Ibrahim Komoo, FASc
12. Prof Bahrom Sanugi, FASc
13. Prof Harith Ahmad, FASc
14. Prof Kurunathan Ratnavelu, FASc
15. Prof Tou Teck Yong, FASc
16. Prof Muhammad Yahaya, FASc
17. Prof Lim Ming Huat, FASc
18. Prof Wong Chiow San, FASc
19. Prof Roslan Abd Shukor, FASc

SAINS KIMIA | CHEMICAL SCIENCES

1. Academician Tan Sri Datuk Dr Augustine Ong Soon Hock, FASc
2. Dr Badri Muhamad, FASc
3. Prof Dato' V. G. Kumar Das, FASc
4. Emeritus Prof Ng Soon, FASc
5. Dr Ho Chee Cheong, FASc
6. Datuk Dr Mohinder Singh S. Sucha Singh, FASc
7. Dr Goh Swee Hock, FASc
8. Prof Dr Halimaton Hamdan, FASc
9. Prof Dato' Md Ikram Mohd Said, FASc
10. Dr Lee Chnoong Kheng, FASc
11. Prof Datuk Sukiman Sarmani, FASc
12. Dato' Dr Choo Yuen May, FASc
13. Prof Ibrahim Abdullah, FASc
14. Prof Datuk A. Hamid A. Hadi, FASc
15. Dr Goh Lai Yoong neé Wong Lai Yoong, FASc
16. Prof Dato' Muhammad Idiris Saleh, FASc

TEKNOLOGI MAKLUMAT | INFORMATION TECHNOLOGY

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

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

1. Academician Tan Sri Datuk Dr Omar Abdul Rahman, FASc
2. Academician Tan Sri Dato' Dr Mohd Rashdan Baba, FASc
3. Academician Datuk Dr Abdul Aziz S. A. Kadir, FASc
4. Tan Sri Dato' Dr Ani Arope, FASc
5. Tan Sri Dato' Dr Mohamed Yusof Hashim, FASc
6. Tan Sri Dato' Ir Wan Abdul Rahman Wan Yaacob, FASc
7. Tan Sri Datuk Yong Poh Kon, FASc
8. Tan Sri T. Ananda Krishnan, FASc
9. Tan Sri Datuk Dr Yusof Basiron, FASc
10. Datuk Alladin Hashim, FASc
11. Prof Datuk Mazlan Othman, FASc
12. Ir Mohamed Zohari Mohamed Shaharun, FASc
13. Datuk Dr Saharan Anang, FASc
14. Dato' Dr Ong Eng Long, FASc
15. Prof Jalani Sukaimi, FASc
16. Prof Khalijah Mohd Salleh, FASc
17. Dr Chan Kook Weng, FASc
18. Dato' Dr Abdul Razak Mohd Ali, FASc
19. Dato' Ir Lai Pin Yong, FASc
20. Datuk Dr Soon Ting Kueh, FASc
21. Datuk Dr Mohd Basri Wahid, FASc
22. Dr Ahmad Ibrahim, FASc
23. Datuk Dr Ahmad Tasir Lope Pihie, FASc

AHLI MAJLIS
COUNCIL MEMBERS

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President:

Tan Sri Datuk Dr Yusof Basiron, FASc

Naib Presiden:
Vice-President:

Prof Datuk Mazlan Othman, FASc

Setiausaha Agung:
Secretary General:

Academician Datuk Seri Dr Salleh Mohd Nor, FASc

Bendahari Kehormat:
Honorary Treasurer:

Datuk Ir Dr Ahmad Zaidee Laidin, FASc

Ahli Majlis:
Council Members:

Tan Sri Dato' Ir Shahrizaila Abdullah, FASc
Academician Prof Emeritus Yong Hoi Sen, FASc
Datuk Fateh Chand, FASc
Prof Dato' Md Ikram Mohd Said, FASc
Prof Ho Chee Cheong, FASc
Prof Muhamad Awang, FASc
Prof Emeritus Dato' Mohamed Mahyuddin Mohd Dahan, FASc
Datuk Dr Mohinder Singh S. Sucha Singh, FASc
Prof Dato' Khairul Anuar Abdullah, FASc
Prof Dato' C. P. Ramachandran, FASc
Prof Dato' Chuah Hean Teik, FASc
Prof Asma Ismail, FASc



Majlis telah mengadakan enam (6) mesyuarat bagi tahun berakhir pada 31 Disember 2007 iaitu:

- Mesyuarat Majlis ke-71: Selasa, 13 Februari 2007
- Mesyuarat Majlis ke-72: Jumaat, 30 Mac 2007
- Mesyuarat Majlis ke-73: Sabtu, 27 Mei 2007
- Mesyuarat Majlis ke-74: Sabtu, 28 Julai 2007
- Mesyuarat Majlis ke-75: Sabtu, 29 September 2007
- Mesyuarat Majlis ke-76: Sabtu, 24 November 2007

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

- Penilaian Semula Belanjawan 2006 dan Belanjawan 2007
- Projek-projek di bawah Rancangan Malaysia Kesembilan
  - Program Nasihat kepada Kerajaan
  - Program Mencapai Kecemerlangan dalam STI
  - Program Kesedaran Sains
  - Program Antarabangsa
  - Penerbitan
- Program dan Aktiviti ASM

The Council met six (6) times for the year ending 31 December 2007, as follows:

- 71th Council Meeting: Tuesday, 13 February 2007
- 72th Council Meeting: Friday, 30 March 2007
- 73th Council Meeting: Saturday, 27 May 2007
- 74th Council Meeting: Saturday, 28 July 2007
- 75th Council Meeting: Saturday, 29 September 2007
- 76th Council Meeting: Saturday, 24 November 2007

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

- 2006 Budget Review and 2007 Budget
- Projects under the Ninth Malaysia Plan
  - Advice to Government Programmes
  - Achieving Excellence in STI Programmes
  - Science Awareness Programmes
  - International Programmes
  - Publications
- ASM Programmes and Activities

MESYUARAT AGUNG KE-12 Sabtu, 28 April 2007

12TH ANNUAL GENERAL MEETING Saturday, 28 April 2007

Mesyuarat Agung Tahunan ke-12 Akademi Sains Malaysia telah diadakan pada 28 April 2007 di Bilik Seminar, ASM. Mesyuarat tersebut dipengerusikan oleh Presiden, Tan Sri Datuk Dr Ahmad Zaharudin Idrus, FASc dan dihadiri oleh 65 orang Felo. Pengerusi telah menyampaikan ucapan aluan dan terima kasih atas kehadiran Felo Akademi.

Pengerusi mengumumkan bahawa tempoh enam tahun beliau sebagai Presiden Akademi telah berakhir. Beliau turut memaklumkan bahawa Presiden baru Akademi akan dilantik oleh DYMM Yang Di-Pertuan Agong dan urusan berkenaan sedang dijalankan. Sementara proses perlantikan itu, Majlis ASM yang baru dilantik yang diketuai oleh Naib Presiden akan menguruskan perjalanan ASM.

Mesyuarat telah membincangkan dan meluluskan perkara-perkara berikut:

- Laporan Tahunan 2006 dan Penyata Kewangan berakhir 31 Disember 2006; dan
- Seramai 10 orang Felo baru telah dilantik oleh Akademi Sains Malaysia iaitu:

The Academy held its 12th Annual General Meeting on 28 April 2007 at the Seminar Hall, ASM. The President, Tan Sri Datuk Dr Ahmad Zaharudin Idrus, FASc was the Chairman who presided at the AGM which was attended by 65 Fellows of the Academy. The Chairman presented his welcome address and thanked members for their attendance.

The Chairman announced the end of his six-year term as President of the Academy and informed the members that the new President of the Academy would be appointed by DYMM Yang Di-Pertuan Agong at a later stage as the necessary arrangements were being done. During the interim, the newly-appointed Council, headed by the Vice-President, would manage the Academy.

The meeting discussed and approved the following:

- 2006 Annual Report and Statement of Accounts for the year ending 31 December 2006; and
- Election of ten new Fellows of the Academy of Sciences Malaysia as follows:

Tan Sri Datuk Dr Mohd Ismail Merican, FASc	Sains Perubatan / Medical Sciences
Prof Cheah Phaik Leng, FASc	Sains Perubatan / Medical Sciences
Dr Lim Boo Liat, FASc	Sains Biologi / Biological Sciences
Prof Datin Paduka Khatijah Mohd Yusoff, FASc	Sains Biologi / Biological Sciences
Prof Roslan Abd Shukor, FASc	Sains Matematik dan Fizik / Mathematical and Physical Sciences
Prof Wong Chiow San, FASc	Sains Matematik dan Fizik / Mathematical and Physical Sciences
Dr Goh Lai Yoong née Wong Lai Yoong, FASc	Sains Kimia / Chemical Sciences
Prof Dato' Muhammad Idiris Saleh, FASc	Sains Kimia / Chemical Sciences
Datuk Dr Ahmad Tasir Lope Pihie, FASc	Pembangunan Sains dan Teknologi dan Industri / Science and Technology Development and Industry
Dr Ahmad Ibrahim, FASc	Pembangunan Sains dan Teknologi dan Industri / Science and Technology Development and Industry

12TH ANNUAL GENERAL MEETING

Perlantikan Ahli Majlis / Appointment of Council Members

• Prof Asma Ismail, FASc	– Ahli Majlis / Council Member
• Prof Dato' Khairul Anuar Abdullah, FASc	– Ahli Majlis / Council Member
• Prof Dato' C.P. Ramachandran, FASc	– Ahli Majlis / Council Member
• Datuk Dr Mohinder Singh S. Sucha Singh, FASc	– Ahli Majlis / Council Member
• Prof Dato' Chuah Hean Teik, FASc	– Ahli Majlis / Council Member
• Prof. Dato' Mohamed Mahyuddin Mohd Dahan, FASc	– Ahli Majlis / Council Member

Pengerusi juga memaklumkan tentang perlantikan Datuk Dr Abdul Aziz S.A. Kadir, FASc sebagai Felo Kanan yang baru sepertimana yang dipersetujui oleh Ahli Majlis ASM.

The Chairman informed the Meeting of the appointment of Datuk Dr Abdul Aziz S.A. Kadir, FASc as a new Senior Fellow as agreed to by the ASM Council.



Felo ASM di Mesyuarat Agung.
ASM Fellows at the Annual General Meeting.

JAWATANKUASA KERJA DAN BADAN BERTINDAK
WORKING COMMITTEES AND TASK FORCE

JAWATANKUASA KERJA
WORKING COMMITTEES

JAWATANKUASA EKSEKUTIF
EXECUTIVE COMMITTEE

Presiden / President
Tan Sri Datuk Dr Yusof Basiron, FASc

Naib Presiden / Vice-President
Prof Datuk Mazlan Othman, FASc

Setiausaha Agung / Secretary General
Academician Dato' Seri Dr Salleh Mohd Nor, FASc

Bendahari Kehormat / Honorary Treasurer
Dato' Ir Ahmad Zaidee Laidin, FASc

PENGERUSI KUMPULAN DISIPLIN
CHAIRMAN OF DISCIPLINE GROUPS

Sains Perubatan / Medical Sciences
Prof Dato' Dr C. P. Ramachandran, FASc

Sains Kejuruteraan / Engineering Sciences
Prof Abang Abdullah Abang Ali, FASc

Sains Biologi / Biological Sciences
Academician Prof Emeritus Yong Hoi Sen, FASc

Sains Matematik dan Fizik / Mathematical and Physical Sciences
Senior Prof Chia Swee Ping, FASc

Sains Kimia / Chemical Sciences
Academician Tan Sri Datuk Dr Augustine Ong Soon Hock, FASc

Teknologi Maklumat / Information Technology
(To be Appointed)

Pembangunan S&T dan Industri / S&T Development and Industry
Academician Datuk Dr Abdul Aziz S.A. Kadir, FASc

JAWATANKUASA KEWANGAN
FINANCE COMMITTEE

Pengerusi / Chairman
Datuk Ir Ahmad Zaidee Laidin, FASc

JAWATANKUASA KEAHLIAN
MEMBERSHIP COMMITTEE

Pengerusi / Chairman
Academician Dato' Seri Dr Salleh Mohd Nor, FASc

JAWATANKUASA PELABURAN
INVESTMENT COMMITTEE

Pengerusi / Chairman
Datuk Ir Ahmad Zaidee Laidin, FASc

JAWATANKUASA PERJAWATAN
ESTABLISHMENT COMMITTEE

Pengerusi / Chairman
Academician Dato' Seri Dr Salleh Mohd Nor, FASc

JAWATANKUASA AUDIT
AUDIT COMMITTEE

Pengerusi / Chairman
Tan Sri Dato' Ir Shahrizaila Abdullah, FASc

JAWATANKUASA NASIHAT KEPADA KERAJAAN
ADVICE TO GOVERNMENT COMMITTEE

Pengerusi / Chairman
Tan Sri Datuk Dr Yusof Basiron, FASc

Naib Pengerusi / Deputy Chairman
Prof Datuk Mazlan Othman, FASc

WORKING COMMITTEES AND TASK FORCE

BADAN PENASIHAT BERTINDAK KEPADA PERUBAHAN LANDSKAP PERHUTANAN: KESAN TERHADAP KESIHATAN LUAR BANDAR
ADVISORY TASK FORCE ON CHANGING OF FOREST LANDSCAPE: IMPACT ON RURAL HEALTH

Pengerusi / Chairman
Prof Dato' C. P. Ramachandran, FASc

BADAN PENASIHAT BERTINDAK KEPADA PERATURAN ORGANISMA UBAH SUAI GENETIK DAN PRODUK
ADVISORY TASK FORCE ON REGULATION OF GENETICALLY ENGINEERED ORGANISMS AND PRODUCTS

Pengerusi / Chairman
Prof Yap Sook Fan, FASc

BADAN PENASIHAT BERTINDAK KEPADA SISTEM BERSEPADU TANAMAN SAWIT – HAIWAN RUMINAN (ITCRS)
ADVISORY TASK FORCE ON INTEGRATED TREE CROPS-RUMINANT SYSTEMS (ITCRS)

Pengerusi / Chairman
Dr C. Devendra, FASc

BADAN PENASIHAT BERTINDAK KEPADA NANOTEKNOLOGI
ADVISORY TASK FORCE ON NANOTECHNOLOGY

Pengerusi / Chairman
Prof Halimaton Hamdan, FASc

BADAN PENASIHAT BERTINDAK KEPADA PERUBAHAN IKLIM
ADVISORY TASK FORCE ON CLIMATE CHANGE

Pengerusi / Chairman
Prof Muhammad Awang, FASc

BADAN PENASIHAT BERTINDAK KEPADA TENAGA
ADVISORY TASK FORCE ON ENERGY

Pengerusi / Chairman
Datuk Ir Ahmad Zaidee Laidin, FASc

BADAN PENASIHAT BERTINDAK MAKANAN HALAL
ADVISORY TASK FORCE ON HALAL FOOD

Pengerusi / Chairman
Prof Emeritus Tan Sri Dato' Syed Jalaludin Syed Salim, FASc

BADAN PENASIHAT BERTINDAK KEPADA PENYAKIT VIRUS
ADVISORY TASK FORCE ON VIRAL DISEASES

Pengerusi / Chairman
Academician Datuk Dr M. Jegathesan, FASc

BADAN PENASIHAT BERTINDAK KEPADA SAINS ANGKASA
ADVISORY TASK FORCE ON SPACE SCIENCE

Pengerusi / Chairman
Prof Datuk Mazlan Othman, FASc

BADAN PENASIHAT BERTINDAK KEPADA BENCANA ALAM
ADVISORY TASK FORCE ON NATURAL HAZARDS

Pengerusi / Chairman
Datuk Fateh Chand, FASc

JAWATANKUASA HAL EHWAL ANTARABANGSA
INTERNATIONAL AFFAIRS COMMITTEE

Pengerusi / Chairman
Prof Datuk Mazlan Othman, FASc
(Naib Presiden/Vice-President)

JAWATANKUASA CABARAN SAINS KEBANGSAAN
NATIONAL SCIENCE CHALLENGE COMMITTEE

Pengerusi / Chairman
Datuk Dr Mohinder Singh S. Sucha Singh, FASc

JAWATANKUASA PENERBITAN
PUBLICATIONS COMMITTEE

Pengerusi / Chairman
Prof Datuk Mazlan Othman, FASc

JAWATANKUASA BUDAYA CEMERLANG
CULTURE OF EXCELLENCE COMMITTEE

Pengerusi / Chairman
Academician Dato' Seri Dr Salleh Mohd Nor, FASc

JAWATANKUASA PEMANTAUAN PROJEK RMK9
9MP PROJECT MONITORING COMMITTEE

Pengerusi / Chairman
Prof Datuk Mazlan Othman, FASc

JAWATANKUASA PEMANDU PERUNTUKAN DANA PENGGALAKKAN SAINS
SCIENTIFIC ADVANCEMENT FUND ALLOCATION STEERING (SAGA) COMMITTEE

Pengerusi / Chairman
Prof Datuk Mazlan Othman, FASc

JAWATANKUASA ANUGERAH SAINS MAHATHIR
MAHATHIR SCIENCE AWARD COMMITTEE

Pengerusi / Chairman
Academician Dato' Seri Dr Salleh Mohd Nor, FASc

JAWATANKUASA PERUBATAN TABUNG AMANAH DR RANJEET BHAGWAN SINGH
DR RANJEET BHAGWAN SINGH MEDICAL TRUST FUND COMMITTEE

Pengerusi / Chairman
Prof Dato' C.P. Ramachandran, FASc

JAWATANKUASA PEMERINGKATAN PROGRAM PENYELIDIKAN
RANKING RESEARCH PROGRAMME COMMITTEE

Pengerusi / Chairman
Prof Datuk Mazlan Othman, FASc

JAWATANKUASA KESEDARAN SAINS DAN TEKNOLOGI
SCIENCE AND TECHNOLOGY AWARENESS COMMITTEE

Pengerusi / Chairman
Dr Ho Chee Cheong FASc

BADAN BERTINDAK | TASK FORCE

PROGRAM AIR
WATER PROGRAMME

Pengerusi / Chairman
Tan Sri Dato' Shahrizaila Abdullah, FASc

BIOTEKNOLOGI DAN PERTANIAN
BIOTECHNOLOGY AND AGRICULTURE

Pengerusi / Chairman
Prof Emeritus Dato' Mohamed Mahyuddin Mohd Dahan, FASc

TANAH ASM
ASM LAND

Pengerusi / Chairman
Prof Datin Paduka Khatijah Mohd Yusoff, FASc

EKSPEDISI SAINTIFIK
SCIENTIFIC EXPEDITION

Pengerusi / Chairman
Prof Dato' Ibrahim Komoo, FASc

WORKING COMMITTEES AND TASK FORCE

PEMBANGUNAN LESTARI DAN BIODIVERSITI
BIODIVERSITY, ENVIRONMENT AND SUSTAINABLE DEVELOPMENT COMMITTEE

Pengerusi / Chairman
Academician Prof Emeritus Yong Hoi Sen, FASc

P&P ANTARTIKA DI MALAYSIA
MALAYSIAN R&D IN ANTARCTICA

Pengerusi / Chairman
Academician Dato' Seri Dr Salleh Mohd Nor, FASc

KURSUS LATIHAN PENGURUSAN S&T
S&T MANAGEMENT TRAINING COURSE

Pengerusi / Chairman
Academician Datuk Dr Abdul Aziz S. A. Kadir, FASc

JARINGAN KERJASAMA
COLLABORATION AND NETWORK

WAKIL ASM UNTUK MESYUARAT KEBANGSAAN DAN ANTARABANGSA
ASM REPRESENTATIVE AT NATIONAL AND INTERNATIONAL MEETINGS

Wakil / Representative
Prof Datuk Mazlan Othman, FASc

MAJIS PEMBANGUNAN KEMAJUAN SAINS NEGARA (MPKSN)
NATIONAL COUNCIL FOR SCIENTIFIC RESEARCH AND DEVELOPMENT

Wakil / Representative
Prof Datuk Mazlan Othman, FASc

INTER ACADEMY COUNCIL (IAC)

Wakil / Representative
Academician Dato' Seri Dr Salleh Mohd Nor, FASc

INTER ACADEMY PANEL WATER PROGRAM (IAP)

Wakil / Representative
Prof Datuk Mazlan Othman, FASc
(Naib Presiden/Vice-President)

FEDERATION OF ASIAN SCIENTIFIC ACADEMIES AND SOCIETIES (FASAS)

Wakil / Representative
Academician Tan Sri Datuk Dr Omar Abdul Rahman, FASc

INTERNATIONAL COUNCIL FOR SCIENCE (ICSU)

Wakil / Representative
Prof Dr Muhammad Awang, FASc

INTER ACADEMY MEDICAL PANEL (IAMP)

Wakil / Representative
Academician Prof Looi Lai Meng, FASc

SCIENCE COUNCIL OF ASIA (SCA)

Wakil / Representative
Prof Emeritus Mohd Nordin Hassan, FASc

COMSTECH – NETWORK OF ACADEMIES OF SCIENCE IN OIC COUNTRIES (NASIC)

Wakil / Representative
Academician Datuk Seri Dr Salleh Mohd Nor, FASc

ASSOCIATION OF ACADEMIES OF SCIENCES IN ASIA (AASA)

Wakil / Representative
Datuk Dr Soon Ting Kueh, FASc

CONSORTIUM OF SCIENCE, TECHNOLOGY AND INNOVATION FOR THE SOUTH (COSTIS)

Wakil / Representative
Prof Datuk Mazlan Othman, FASc

PROJEK KHAS
SPECIAL PROJECT

KAJIAN RISIKO BENCANA DAN RISIKO SEISMOS DAN TSUNAMI DI MALAYSIA
SEISMIC AND TSUNAMI HAZARD & RISK IN MALAYSIA

Pengerusi / Chairman
Datuk Fateh Chand, FASc

JAWATANKUASA PENGURUSAN PROJEK BENCANA SEISMOS DAN KAJIAN RISIKO DI MALAYSIA
PROJECT MANAGEMENT COMMITTEE ON SEISMIC HAZARD AND RISK STUDY IN MALAYSIA

Pengerusi / Chairman
Datuk Fateh Chand, FASc

JAWATANKUASA TEKNIKAL BENCANA SEISMOS DAN KAJIAN RISIKO DI MALAYSIA
TECHNICAL COMMITTEE ON SEISMIC HAZARD AND RISK STUDY IN MALAYSIA

Pengerusi / Chairman
Tan Sri Dato' Ir Shahrizaila Abdullah, FASc

JAWATANKUASA PENGURUSAN PROJEK BRAIN GAIN MALAYSIA
PROJECT MANAGEMENT COMMITTEE OF BRAIN GAIN MALAYSIA

Pengerusi / Chairman
Prof Datuk Dr Mazlan Othman, FASc

BADAN BERTINDAK ANUGERAH INOVASI
INNOVATION AWARD TASK FORCE

Pengerusi / Chairman
Prof Datuk Dr Mazlan Othman, FASc

BADAN BERTINDAK VISI 1441 (OIC)
TASK FORCE ON VISION 1441 (OIC)

Pengerusi / Chairman
Academician Datuk Seri Dr Salleh Mohd Nor, FASc

PANEL KHAS PENILAIAN INNOFUND
SPECIAL PANEL FOR EVALUATION OF INNOFUND

Pengerusi / Chairman
Datuk Ir Ahmad Zaidee Laidin, FASc

PANEL KHAS PENILAIAN TECHNOFUND
SPECIAL PANEL FOR EVALUATION OF TECHNOFUND

Pengerusi / Chairman
Prof Dato' Ir Dr Chuah Hean Teik, FASc

PANEL KHAS PENILAIAN DANA SAINS
SPECIAL PANEL FOR EVALUATION OF SCIENCE FUND

Pengerusi / Chairman
Datuk Fateh Chand, FASc

SIMPOSIUM ANTARABANGSA TERHADAP SAINS, TEKNOLOGI DAN INOVASI
INTERNATIONAL SYMPOSIUM ON SCIENCE, TECHNOLOGY AND INNOVATION

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

BENGKEL BELIA ANTARABANGSA TERHADAP SAINS, TEKNOLOGI DAN INOVASI
INTERNATIONAL YOUTH WORKSHOP ON SCIENCE, TECHNOLOGY AND INNOVATION

Pengerusi / Chairman
Prof Khalijah Mohd Salleh, FASc

CARTA ORGANISASI ASM

ASM ORGANISATIONAL CHART

MAJLIS AKADEMI SAINS MALAYSIA
ACADEMY OF SCIENCES MALAYSIA COUNCIL

JAWATANKUASA
COMMITTEES

- Eksekutif / Executive
- Kewangan / Finance
- Keahlian / Membership
- Pelaburan / Investment
- Perjawatan / Establishment
- Audit / Audit
- Nasihat kepada Kerajaan / Advice to Government
- Hal Ehwal Antarabangsa/ International Affairs
- Cabaran Sains Kebangsaan / National Science Challenge
- Penerbitan / Publications
- Budaya Cemerlang / Culture of Excellence
- Pemantauan Projek RMK9 / 9MP Project Monitoring
- Jawatankuasa Pemandu SAGA
  SAGA Steering Committee
- Pendidikan Sains dan Teknologi
  Science and Technology Education
- Anugerah Sains Mahathir / Mahathir Science Award
- Tabung Amanah Dr. Ranjeet Bhagwan Singh
  Dr. Ranjeet Bhagwan Singh Medical Research Fund
- Program Penilaian Pemeringkatan Penyelidikan
  Ranking Research Programme
- Kesedaran Sains & Teknologi
  Science &Technology Awareness
- Pengurusan Projek Bencana Seismos & Kajian Risiko di Malaysia / Project Management of Seismic Hazard & Risk Study in Malaysia
- Teknikal Bencana Seismos & Kajian Risiko di Malaysia
  Technical on Seismic Hazard & Risk Study in Malaysia
- Pengurusan Projek Brain Gain Malaysia
  Project Management of Brain Gain Malaysia
- Panel Khas Penilaian Innofund
  Special Panel for Evaluation of Innofund
- Panel Khas Penilaian Technofund
  Special Panel for Evaluation of Technofund
- Panel Khas Penilaian Dana Sains
  Special Panel for Evaluation of Science Fund
- Simposium Antarabangsa terhadap Sains, Teknologi dan Inovasi / International Symposium on Science, Technology and Innovation
- Bengkel Belia Antarabangsa terhadap Sains, Teknologi dan Inovasi / International Youth Workshop on Science, Technology and Innovation

BADAN BERTINDAK
TASK FORCE

- Program Air / Water Program
- Bioteknologi & Pertanian
  Biotechnology & Agriculture
- Tanah ASM / ASM Land
- Visi 1441 (OIC)
  Vision 1441 (OIC)
- Ekspedisi Saintifik
  Scientific Expedition
- Pembangunan Lestari Dan Biodiversiti / Biodiversity, Environment and Sustainable Development
- P&P Malaysia di Antartika / Malaysian R&D in Antarctica
- Kursus Latihan Pengurusan S&T / S&T Management Training Course
- Anugerah Inovasi
  Innovation Award
- Visi 1441 (OIC)
  Vision 1441 (OIC)

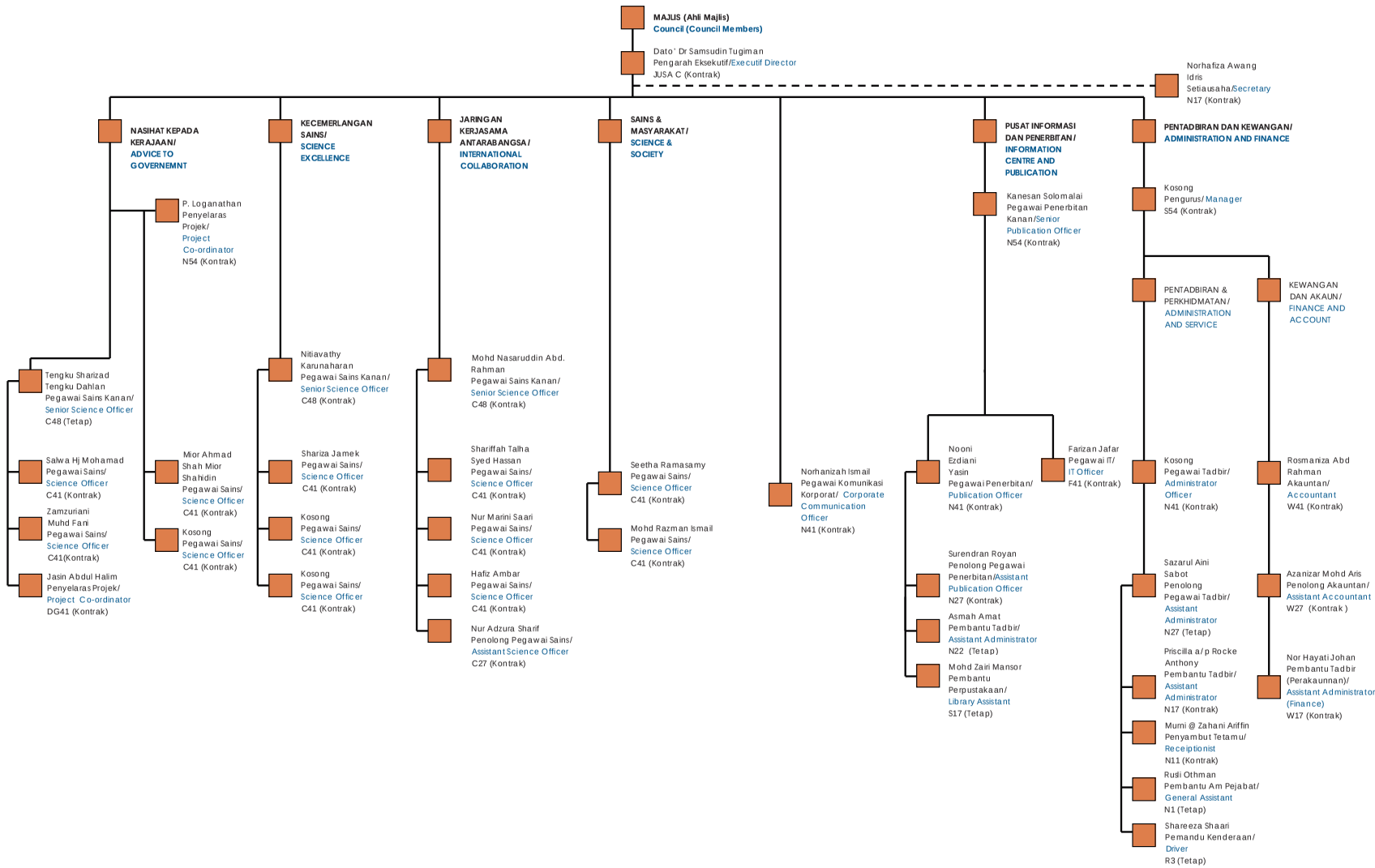
KUMPULAN DISIPLIN
DISCIPLINE GROUPS

- Sains Perubatan
  Medical Sciences
- Sains Kejuruteraan
  Engineering Sciences
- Sains Biologi
  Biological Sciences
- Sains Matematik dan Fizikal / Mathematical and Physical Sciences
- Sains Kimia
  Chemical Sciences
- Teknologi Maklumat
  Information Technology
- Pembangunan S&T dan Industri / S&T Development and Industry

SEKRETARIAT
SECRETARIAT

CARTA ORGANISASI SEKRETARIAT

ORGANISATIONAL CHART OF SECRETARIAT



Tan Sri Ir. (Dr) J. G. Daniel

Selepas mengecapi kerjaya yang begitu menggagumkan baik di arena tempatan mahupun antarabangsa, Tan Sri Ir (Dr) J.G. Daniel meninggal dunia pada 16 September 2007. Mendiang yang merupakan bekas Ketua Pengarah Jabatan Saliran dan Pengairan (1972–1976) menjejaki alam pendidikan di Victoria Institution, Technical College Kuala Lumpur (kini dikenali sebagai Universiti Teknologi Malaysia), sebelum melanjutkan pengajian di University of London. Selaku Ketua Pengarah, mendiang bertanggungjawab menentukan arah keseluruhan, kawalan dan pengurusan bukan sahaja Jabatan Persekutuan malah operasi tiga belas Jabatan Negeri. Semasa memegang jawatan selaku Ketua Pengarah, mendiang telah mengkonsepsikan dan memperoleh pembiayaan Projek Perparitan Johor Barat dari Bank Dunia.

Mendiang juga bertanggungjawab tentang penerbitan, buat julung kali pelbagai piawai yang digunakan untuk perparitan, hidrologi dan hidraulik luar bandar, yang kini dijadikan rujukan standard oleh para pengamal di bidang saliran, pengairan dan pemuliharaan sungai. Juga, buat pertama kali, mendiang telah memperkenalkan konduit poliester bertetulang kaca yang begitu sesuai dalam pengagihan pengairan ke sawah padi dengan pantas. Kaedah ini memungkinkan padi ditaman lima kali setiap dua tahun. Amalan ini telah meletakkan Negara kita ke arah pencapaian matlamat berdikari dalam pengeluaran hasil beras. Mendiang seterusnya menjadi penasihat pakar kepada Kerajaan Malaysia dalam bidang saliran, pengairan, hidrologi hidraulik, saliran luar bandar dan pengawalan banjir. Jawatan di arena antarabangsa pun menyusul malah mendiang dilantik sebagai ahli dan juga felo kehormat di pelbagai organisasi Antarabangsa dan tempatan dalam bidang saliran, pertanian dan kejuruteraan.

Mendiang telah dianugerahkan beberapa anugerah di peringkat negeri dan persekutuan. Penganugerahan ini mencapai puncaknya pada tahun 1976 apabila mendiang dianugerahkan pingat Panglima Setia Mahkota, mengenangkan Jabatan Saliran dan Pengairan berjaya muncul sebagai Jabatan Kerajaan yang paling kemas pengendaliannya di serata Malaysia.



Tan Sri Ir. (Dr) J. G. Daniel

Tan Sri Ir (Dr) J. G. Daniel passed away on 16 September 2007 after a distinguished career recognized both locally and internationally. A former Director General of the Drainage and Irrigation Department (1972 to 1976), he was educated at the Victoria Institution, Technical College Kuala Lumpur (now University Teknologi Malaysia), and the University of London. He was responsible, as Director General, for the overall direction, control and management of not only the Federal Department but also thirteen State Departments. During his term as Director General, he conceptualized and prepared the West Johore Drainage Project for funding by the World Bank.

He was also responsible for the publication, for the first time, of various standards for urban drainage, hydrology and hydraulics, which have since become standard references to practitioners in the fields of drainage, irrigation and river conservancy. He introduced, also for the first time, glass-reinforced polyester conduits for the rapid distribution of irrigation water to padi fields, making it possible to grow five crops of rice in two years, thus setting the country firmly on the road towards its declared aim of achieving self-sufficiency in rice production. He became an expert advisor to the Malaysian Government on drainage, irrigation, hydrology, hydraulics, urban drainage and flood control. International positions soon followed and he was a member and honorary fellow of various International and Malaysian organizations on drainage, agriculture and engineering.

He had been the recipient of several State and Federal awards and this culminated in 1976 when he was awarded the Panglima Setia Mahkota in recognition of the fact that the Drainage and Irrigation Department was considered as the “best-run” Government Department in the country.

Pada tahun 1995, mendiang dilantik sebagai Felo Pengasas Akademi Sains Malaysia dan seterusnya berkhidmat dalam Majlis Pentadbir Pertama Akademi selama tiga tahun. Sesudah itu mendiang dilantik selaku Felo Kanan dan bertugas sebagai Pengerusi Bahagian Kejuruteraan. Pada tahun 1998, Universiti Teknologi Malaysia mengurniakan mendiang Kedoktoran Kehormat dalam bidang Kejuruteraan Sivil. Pemergian mendiang merupakan suatu kehilangan besar kepada keluarga mendiang, pihak Akademi malah Negara ini.

In 1995, he was appointed a Foundation Fellow of the Academy of Sciences Malaysia and served in the First Governing Council of the Academy for three years. He was later appointed a Senior Fellow of the Academy, as Chairman of the Division of Engineering. In 1998, University Teknologi Malaysia conferred on him a Honorary Doctorate in Civil Engineering. His demise has robbed his beloved family, the Academy and the nation of a distinguished personage.

Datuk Dr Keshmahinder Singh

Datuk Dr Keshmahinder Singh, salah seorang oftamologis tersohor di Negara ini, meninggal dunia ketika berusia 85 tahun pada 23 Mei 2007. Mendiang memainkan peranan penting dalam pembentukan Hospital Mata Kebangsaan Tun Hussein Onn, di Petaling Jaya pada tahun 1986. Mendiang telah menghadiahkan semua peralatan perubatan sebaik klinik mendiang ditutup. Mendiang telah memegang jawatan Pengarah Eksekutif Hospital Mata berkenaan berikutan pesaraan mendiang pada tahun 1988 dan menamatkan perkhidmatan ini pada tahun 1990.

Mendiang telah menyumbang terhadap pembangunan penjagaan mata di Negara ini, malah dikenali sebagai salah seorang pembedah mata terkemuka di Malaysia. Mengenang sumbangan mendiang dalam bidang perubatan, mendiang dilantik sebagai Presiden Pertubuhan Perubatan Malaysia (MMA) pada tahun 1990. Mendiang juga merupakan Felo Akademi Perubatan, Malaysia di samping muncul sebagai seorang Presiden Pengasas (1972) Balai Ikhtisas Malaysia. Mendiang juga berkecimpung secara aktif dalam Kelab Rotrari dan menjadi presiden Bab Diraja Kuala Lumpur dari 1966-1967. Seterusnya, mendiang dilantik selaku presiden Kelab Rotrari Malaysia dari 1982–1983. Mendiang dilantik sebagai Felo Pengasas Akademi Sains Malaysia pada tahun 1995.



Datuk Dr Keshmahinder Singh

Datuk Dr Keshmahinder Singh, one of the country's foremost opthamologists, passed away at the age of 85 on 23 May 2007. He was instrumental in initiating the setting up of the Tun Hussein Onn National Eye Hospital, Petaling Jaya in 1986 and donated all his equipment to the hospital when he closed his clinic. He served as its Executive Director after his retirement in 1988, and left the Eye Hospital in 1990.

He contributed towards the development of eye care in the country and was reputed as one of Malaysia's best eye surgeons. In acknowledgement of his contribution to the medical profession, he was made president of the Malaysian Medical Association for 1970. He was also a Fellow of the Academy of Medicine, Malaysia and a founding President (1972) of Balai Ikhtisas Malaysia (Malaysian Professional Centre). He was also active in Rotary and was the president of the Kuala Lumpur Diraja Rotary Club in 1966–1967 and later became the president of the Rotary District 3300 in 1982 –1983. He was appointed as a Foundation Fellow of the Academy of Sciences Malaysia in 1995.

Projek Rancangan Malaysia Kesembilan (RMK9)

Ninth Malaysia Plan Projects (9MP)

PROJEK RANCANGAN MALAYSIA KESEMBILAN (RMK9)

NINTH MALAYSIA PLAN PROJECTS (9MP)

Di bawah Projek Rancangan Malaysia Kesembilan (2006–2010), Akademi Sains Malaysia, diperuntukkan RM16 000 000 untuk pembiayaan empat program di bawah enam projek. Peruntukan tambahan berjumlah RM11 153 137 juga diberikan untuk Penerbitan Saintifik (RM4 074 000), Program Pendidikan Sains (RM4 000 000), Cabaran Sains Kebangsaan (RM1 000 000) dan Program Latihan dan Pengurusan S&T (RM2 079 137).

Segala projek dan dana yang diluluskan bagi tahun 2007 dipaparkan di bawah.

The Academy of Sciences Malaysia, under the Ninth Malaysia Plan (2006–2010), has been allocated RM16 000 000 for four programmes under six projects. A further RM11 153 137 was also allocated for Scientific Publications (RM4 074 000), Science Education Programme (RM4 000 000), National Science Challenge (1 000 000) and S&T Management and Training Programme (RM2 079 137).

The projects, and the funds approved for 2007 are outlined in the table below.

Peruntukan RMK9
9MP Allocation

No	Program/Projek Programme/Project	Dana Diluluskan Fund Approved (2006–2010)	Dana Diluluskan Fund Approved (2007)
1	Nasihat kepada Kerajaan Advice to Government		
	- Menyediakan Laporan Kajian Strategik dan pandangan pakar dalam isu STI Preparation of Expert Strategic Reports on STI	1 000 000	200 000
	- Program Penilaian Pemeringkatan Penyelidikan Research Assessment Programme	2 000 000	200 000
2	Program Kecemerlangan Saintifik Scientific Excellence Programme	4 500 000	900 000
	- Program Nobel Laureate Kebangsaan National Nobel Laureate Programme		
3	Ekspedisi Saintifik Scientific Expedition	1 500 000	300 000
4	Program Antarabangsa International Programmes		
	- Penyelidikan Antartika Kebangsaan National Antarctic Research	6 000 000	1 690 000
	- Jaringan Kerjasama Antarabangsa International Collaboration	1 000 000	200 000
	Jumlah/Total	16 000 000	3 490 000

Nasihat kepada Kerajaan

Disebabkan Akademi Sains Malaysia merupakan sebuah institusi yang diterajui oleh felo-felo yang tersohor dari pelbagai disiplin, Akademi sering diminta untuk memberi khidmat nasihat kepada Kerajaan berkaitan isu-isu strategik Negara. Dalam hal ini, Akademi tidak hanya diberikan tanggungjawab melaksanakan projek jangkamasa pendek dan panjang, tetapi juga diminta untuk mengendalikan 'due diligence' ke atas cadangan yang dikemukakan kepada Kerajaan berkaitan pembangunan strategik sains dan teknologi.

Advice to Government

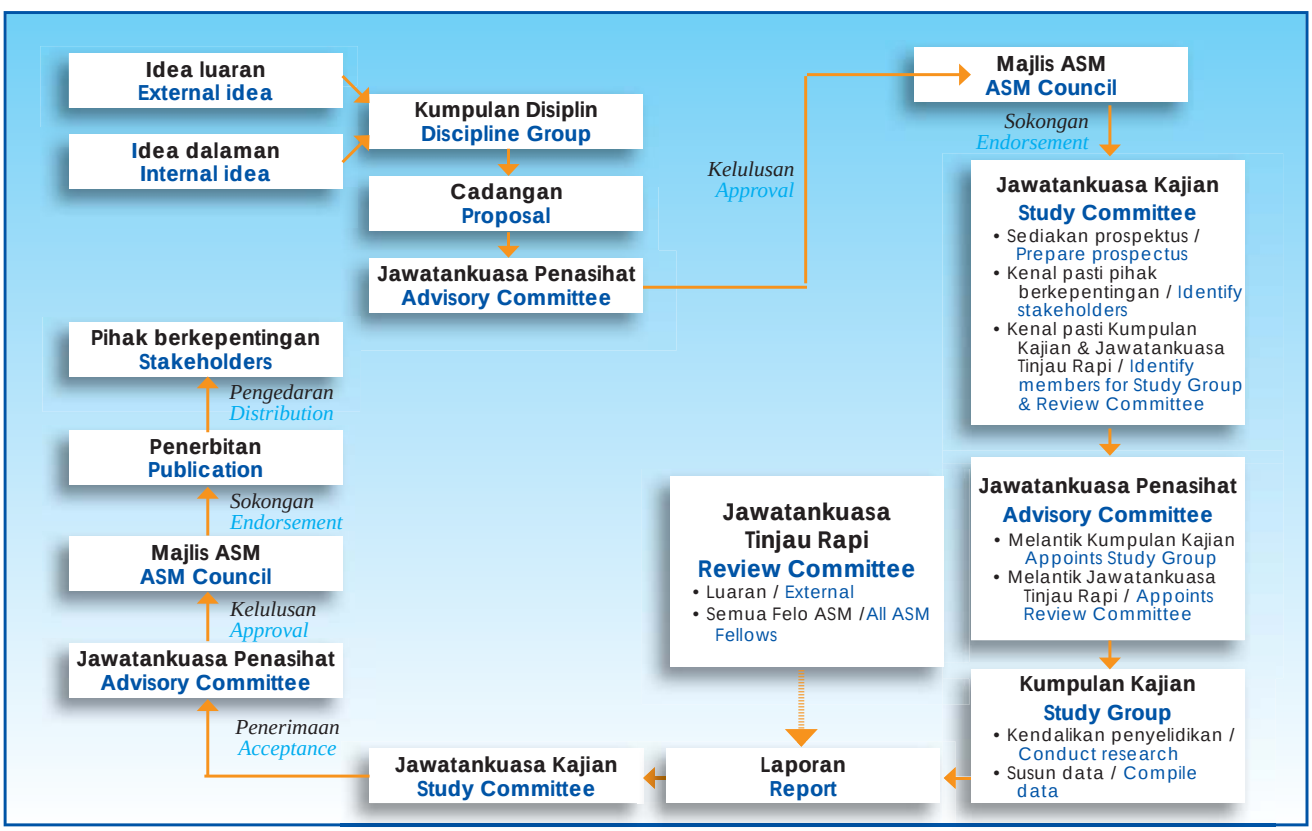
Due to its multi-disciplinary nature and the high standing of its Fellows, the Academy is frequently called upon to provide independent advice to the Government on issues of national strategic interest. In this regard, not only is the Academy given specific short- and long-term projects, ASM is also called upon to conduct due diligence on proposals related to S&T development that are submitted to the Government.

Perancangan Strategik (2007–2020) Akademi Sains Malaysia

Dalam usaha menentukan pencapaian matlamat strategik Akademi Sains Malaysia, SIRIM Berhad telah menyiapkan satu kajian yang memberi gambaran keseluruhan status semasa Akademi serta harapan para pemimpin dan pihak berkepentingan. Kajian ini juga telah menyediakan satu aturcara ringkas mengenai metodologi dan pendekatan yang mampu membentuk matlamat strategik berkenaan dan bertindak sebagai langkah pertama dalam menetapkan semula peranan ASM agar selaras dengan hasrat pihak berkepentingan dan

Strategic Planning (2007–2020) for the Academy of Sciences Malaysia

Sirim Bhd has completed the background study in support of the roadmap for the Academy which gave an overview of the Academy's present status and the expectations of the leaders and stakeholders as a guide for developing its strategic directions. The study also provided a summary of the methodology and the approach taken to developing the strategic direction and emphasized re-defining ASM's role in accordance with the needs of the stakeholders and the nation as the



Proses aliran menjana Laporan Penasihat
Process flow for generating Advisory Report

Negara. Pelan ini berobjektif memperkukuh kedudukan ASM dalam membimbing Malaysia memenuhi azam memperoleh pengetahuan baru dalam bidang sains demi kesejahteraan masyarakat. Laporan kajian ini telah dibahaskan oleh beberapa panel yang terdiri daripada Felo ASM yang meyetujui rangka perancangan strategik yang mengariskan visi, misi, nilai-nilai bersama, matlamat, strategi utama dan pelan tindakan yang dicadangkan. Rangka perancangan strategik yang dicadangkan ini juga dibahaskan di mesyuarat-mesyuarat Jawatankuasa Disiplin yang mencadangkan beberapa program/ aktiviti yang telah diolah dan diterapkan ke dalam kelompok/kluster projek Akademi melalui RMK9 untuk dilaksanakan. Carta aliran (mukasurat sebelum) untuk Laporan Nasihat ASM telah pun diluluskan dan diterima oleh Jawatankuasa Nasihat kepada Jawatankuasa Kerajaan.

Pemeringkatan Program Penyelidikan

Akademi Sains Malaysia telah diberi mandat oleh MOSTI untuk membangunkan satu sistem penilaian dan pemeringkatan program penyelidikan dan pusat-pusat kecemerlangan di Malaysia yang dibiayai awam. Sistem ini membolehkan Kementerian memantau prestasi program-program ini dan pusat-pusat kecemerlangan mengikut masa dan perbandingan antara satu sama lain. Amalan pemeringkatan begini membolehkan Kerajaan menghulurkan sokongan yang diperlukan, dana, kemudahan pembangunan sumber manusia untuk membolehkan pusat-pusat kecemerlangan ini mencapai daya saing antarabangsa dalam bidang keutamaan masing-masing mengikut penekanan pembangunan Negara.

Demi mencapai matlamat ini, Akademi telah melaksanakan satu kaedah penilaian yang sistematik, terlaras, objektif lagi holistik terhadap semua program penyelidikan dan projek yang dibiayai awam. Kajian ini bermatlamat menjana satu makanisme atau sistem pemeringkatan program penyelidikan di universiti-universiti dan institusi-institusi penyelidikan di Malaysia secara menilai program penyelidikan berasaskan kriteria tertentu; dan membolehkan pengamatan kekuatan penyelidikan sesuatu universiti, institut penyelidikan dan program penyelidikan. Mesyuarat pihak berkepentingan dan mesyuarat Kumpulan Panel telah dilaksanakan bagi membincangkan segala penemuan dan metodologi yang disyorkan untuk memperoleh input/cadangan dan pandangan mengenai kriteria penilaian yang paling

first step. The objective of this plan is to enable ASM to strengthen its position in guiding Malaysia in its pursuit of new knowledge in science for the benefit of society. The study report has been deliberated by various panels comprising ASM Fellows who have agreed on the strategic planning framework that outlines the proposed vision, mission, shared values, goals, key strategies and action plan. The proposed framework of the strategic plan has been deliberated at Discipline Committee meetings and they have come out with proposed programmes / activities that have been synthesized and incorporated into the Academy's RMK9 project cluster for implementation. The flow chart (previous page) for the ASM Advisory Report was approved and adopted by the Advice to Government Committee.

Ranking of Research Programmes

The Academy of Sciences Malaysia has been entrusted by MOSTI to set up a system for the rating and ranking of publicly funded research programmes and centres of excellence in Malaysia. The system will enable the Ministry to track the performances of these programmes and centres of excellence through time, and in relation to each other. Such a rating exercise would also enable the Government to provide necessary support, funding, facilities, human resource development, to enable these centres of excellence attain global competitiveness in their identified niche areas in concordance with the development thrusts of the country.

To achieve this, the Academy has undertaken a systematic, co-ordinated, objective and holistic assessment of research programmes and projects that have been publicly funded. The objectives of the study were to develop a mechanism or a system for ranking of research programmes in Malaysian universities and research institutions by assessing the research programmes based on some selected criteria; and to enable the identification of the research strength of universities, research institutions, research programmes. Stakeholder meetings and Panel Group meetings were conducted to discuss findings and proposed methodology and to obtain input and views on the assessment criteria that can best measure the performance of the fields. Some

baik sesuai untuk menyukat prestasi bidang-bidang ini. Sebahagian daripada isu dan cabaran ini berbangkit kerana penumpuan aktiviti penyelidikan di serata Negara banyak dipengaruhi oleh evolusi pembangunan kerangka institusi berkenaan yang menyokongnya. Justeru, pengkelompokkan penyelidikan merupakan satu langkah positif yang harus diberi keutamaan. Melalui pengkelompokan penyelidikan, usaha penyelidikan kita boleh disusun mengikut keutamaan dan dana disalurkan dengan lebih lancar. Projek ini telah menghasilkan satu manual mengenai penilaian dan pemeringkatan penyelidikan sains di Malaysia yang dibiayai awam. Manual ini menyediakan satu pendekatan mudah, selangkah demi selangkah, dalam pengimplimentasian metodologi penilaian dan pemeringkatan penilaian penyelidikan yang merangkumi empat komponen seperti tertera di bawah:

- Metodologi pengukuran, penilaian dan pemeringkatan penyelidikan
- Mekanisme pengimplimentasian
- Set soal selidik; dan
- Soalan yang kerap dikemukakan.

Metodologi ini merangkumi langkah-langkah yang direka bagi menyukat pelbagai penyelidikan dan jenis-jenis pusat kecemerlangan. Mekanisme pengimplimentasian mengariskan proses penguatkuasaan secara selangkah demi selangkah mengikut kekerapan kitaran penilaian dua tahun sekali. Dalam melaksanakan langkah ini, kerjasama erat dengan pihak berkepentingan akan menentukan lestari tindakan ini di samping anjakan ke arah melahirkan para penyelidik bermutu tinggi di negara ini.

LAPORAN PENASIHAT/LAPORAN KAJIAN ASM

Di bawah teras Penasihat kepada Kerajaan, ASM telah membangunkan beberapa Badan Bertindak bagi mengkaji pelbagai bidang yang dimaklumkan oleh Kumpulan Disiplin ASM dan pihak berkepentingan seperti MOSTI.

of the issues and challenges are that the concentration of research activity throughout the country is heavily influenced by the evolution of the institutional framework supporting it and thus the clustering of research is therefore a step forward that needs to be considered seriously. Through clustering of research, our research efforts can be further prioritized and funds can be allocated more efficiently. The outcome of this project is a manual on research assessment and ranking for fully publicly funded science research in Malaysia. The manual was prepared as a simple, step-by-step guide for the implementation of the Research Assessment and Ranking Methodology which comprised the four following components:

- The research assessment, rating and ranking methodology
- The implementation mechanism
- The questionnaire sets; and
- Frequently asked questions.

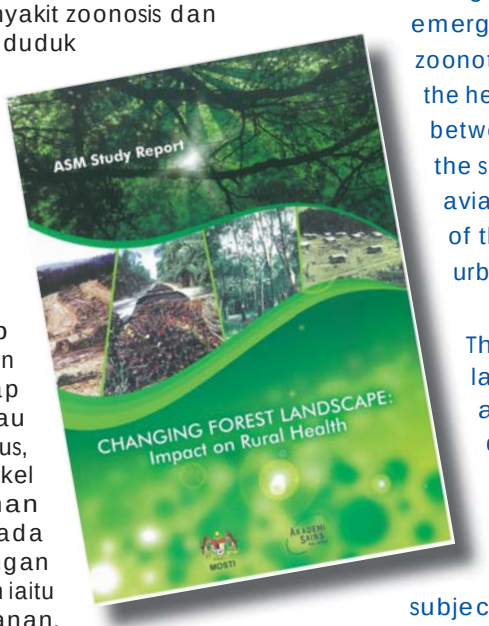
The methodology covered the sets of measures devised to measure various programmes and type of centre of excellence. The implementation mechanism outlines the step-by-step process to implement each of the two-year assessment cycle. A close collaboration with the stakeholders in carrying out this exercise would ensure the sustainability of this exercise as well as the positive progress of high quality research in this country.

ASM ADVISORY REPORTS/STUDY REPORTS

Under the Advice to Government thrust, the Academy has established several Task Forces to study various areas identified by ASM Discipline Groups and stakeholders such as MOSTI.

Perubahan Landskap Perhutanan: Kesan terhadap Kesihatan Luar Bandar

Laporan Kajian ini diterbitkan setahun selepas satu tinjauan semula yang dijalankan oleh Jawatankuasa Perubahan Landskap Perhutanan yang dipengerusikan Prof Dato' C. P. Ramachandran, FASc. Persoalan utama Laporan ini merupakan perkaitan antara perubahan landskap perhutanan dengan kemunculan penyakit-penyakit baru, terutama sekali penyakit zoonosis dan kesannya terhadap kesihatan penduduk luar bandar. Perkaitan rapat antara manusia dengan haiwan boleh mencetuskan penyebaran/penularan penyakit seperti SARS dan selesema burung yang mengugat kesihatan tanpa mengira yang kaya atau yang miskin; penduduk luar bandar atau penduduk bandar.



Keadaan perubahan landskap perhutanan, kesan terhadap kesihatan luar bandar, dan implikasi terhadap pembangunan lestari telah ditinjau semula oleh sekumpulan pakar khusus, melalui satu tinjauan mengenai artikel yang diterbitkan. Tinjauan bahan bercetak ini menumpukan fokus pada tiga isu khusus yang berkaitan dengan persoalan utama Laporan berkenaan iaitu soal perubahan landskap perhutanan, perkaitan antara perubahan landskap perhutanan dengan kesihatan luar bandar, dan kesannya terhadap pembangunan lestari.

Changing Forest Landscape: Impact on Rural Health

This Study Report, was published in the year after a review undertaken by the Committee on Changing Forest Landscape chaired by Prof Dato' C. P. Ramachandran, FASc. The central concern of this Report is the links between change in the forest landscape and the emergence of new diseases, especially zoonotic diseases and their implications on the health of the rural population. Contacts between humans and animals can lead to the spread of diseases such as SARS and avian flu that would threaten the health of the poor and rich, the rural and the urban population alike.

The nature of the changing forest landscape, impact on rural health, and implications for sustainable development were reviewed by a group of selected specialists, through a survey of the published literature. This literature survey focussed on three specific issues related to the subject of the Report viz. the changing forest landscape, the link between a changing forest landscape and rural health, and the implications of these on sustainable development.

Sistem Bersepadu Tanaman Sawit-Haiwan Ruminan

Suatu jawatankuasa yang dipengerusikan oleh Dr C. Devendra, FASc telah dibentuk untuk menyediakan satu Laporan Penasihat kepada Kerajaan demi menangani isu-isu berkaitan mempertingkat sistem bersepadu tanaman sawit-haiwan ruminan. Sehubungan ini satu bengkel telah dibentuk dengan kerjasama MARDI (4–5 September) dengan objektif-objektif berikut:

Integrated Tree Crops-Ruminant Systems

A committee under the chairmanship of Dr. C. Devendra, FASc was formed to prepare an Advisory Report to the Government to address issues related to improvement in integrated tree crops-ruminant production systems. A workshop was thus organised with the collaboration of MARDI (4–5 September) with the following objectives:

- Menilai status semasa sistem bersepadu di Malaysia, berdasarkan soal kepentingan, takat, amalan dan polisi
- Menyenarai masalah dan halangan serta rintangan terhadap pembangunan sistem ini
- Mengenal pasti peluang, termasuk kerjasama antara kementerian, dan antara agensi demi memperbaiki dan menggalakkan proses pembangunan; dan
- Mengenal pasti pilihan yang bersesuaian kepada ITCRS demi membantu agenda pembangunan negara.



- Assess the current status of integrated systems in Malaysia, with reference to the importance, extent, practice, and policies
- Enumerate problems and constraints as well as impediments for the development of the system
- Identify opportunities, including inter-ministry and inter-agency co-operation, for improving and promoting the development process; and
- Identify policy options appropriate to ITCRS to assist the nation's development agenda.

Sekitar 100 peserta menghadiri Bengkel ini di mana 15 kertas kerja telah dibentangkan. Prosiding, Laporan Kajian dan Laporan Penasihat sedang disediakan.

About 100 participants attended the Workshop where 15 papers were presented. The Proceedings, a Study Report and an Advisory Report are being prepared.

Biodiversiti dan Pembangunan Negara: Pencapaian, Peluang dan Cabaran

Badan Bertindak, diketuai oleh Academician Prof Yong Hoi Sen, FASc bercadang mengadakan satu Persidangan pada bulan April 2008 bertajuk 'Biodiversiti dan Pembangunan Negara: Pencapaian, Peluang dan Cabaran'. Persidangan ini akan memaparkan bahawa biodiversiti telah menyumbang kepada pembangunan negara sepanjang tempoh 50 tahun yang lalu dan mengenal pasti peluang dan cabaran untuk menggunakan biodiversiti secara lestari untuk pembangunan negara. Hasil persidangan ini merupakan satu set Prosiding yang akan diedarkan kepada semua agensi termasuk agensi Kerajaan dan institusi swasta.



Sebuah Badan Bertindak Biodiversiti juga telah dibentuk bertujuan menyediakan maklumat terkini mengenai isu yang melibatkan biodiversiti untuk semua pihak berkepentingan termasuk Agensi Kerajaan, Badan-badan bukan Kerajaan, institut-institut penyelidikan

Biodiversity and National Development: Achievements, Opportunities and Challenges

The Task Force, chaired by Academician Prof Yong Hoi Sen, FASc have planned to hold a Conference in April 2008 entitled 'Biodiversity and National Development: Achievements, Opportunities and Challenges'. The Conference will show how biodiversity has contributed to national development in the last 50 years and to identify opportunities and challenges for sustainable utilization of biodiversity for national development. The output of the Conference will be a set of Proceedings which will be circulated to agencies including government and private institutions.

A Biodiversity Task Force was also formed with the aim of providing up-to-date information relating to issues that affect biodiversity to all the stakeholders including Government Agencies, NGOs, research institutes and the public to enable them

dan orang awam bagi membolehkan mereka merumus polisi, undang-undang dan peraturan bersesuaian di samping mengambil langkah-langkah sesuai serta merancang dan menguruskan aktiviti berkaitan dengan bidang biodiversiti. Satu simposium bertajuk, 'Biodiversiti dalam Pembangunan Negara' dijadualkan diadakan pada bulan Mei 2008, dan prosidingnya akan diedarkan kepada agensi-agensi termasuk institusi-institusi kerajaan dan swasta.

to formulate appropriate policies, legislations and regulations as well as to take necessary action and to plan and manage activities in the areas of biodiversity. A symposium entitled 'Biodiversity in National Development' is scheduled for May 2008, and the proceedings will be circulated to agencies including government and private institutions.

Perubahan Iklim

Majlis ASM menyokong usul mengesa ASM membangunkan Program Penyelidikan Perubahan Iklim di Malaysia dan memohon pembiayaannya diperoleh menerusi satu usul kewangan di bawah RMK9 (Kajian Separuh Penggal). Badan Bertindak Perubahan Iklim, yang dipengerusi oleh Prof Muhamad Awang, FASc telah mengadakan satu bengkel pada 17 November. Badan Bertindak berkenaan telah memutuskan untuk lebih fokus dalam mengenal pasti jurang pengetahuan saintifik yang boleh dijangkaui oleh ASM yang boleh mengkomplemen kerja-kerja yang sedang dikendalikan oleh agensi-agensi dan institut-institut kerajaan. Maka diputuskan ASM akan menumpukan fokus untuk mengkaji kesan perubahan iklim dan meninjau aspek sosioekonomi yang akan melanda di pelbagai peringkat di kalangan penduduk negara ini. Satu Laporan Penasihat untuk pertimbangan kerajaan berhubung sains, kesan dan keperluan adaptasi dalam usaha memperlengkapkan Malaysia menghadapi perubahan iklim dan Laporan Kajian untuk semua kementerian akan diedarkan pada penghujung tempoh RMK9 atau RMK10 nanti.

Climate Change

The ASM Council, had endorsed a proposal for ASM to develop the Malaysian Climate Change Research Programme and to seek funding for it in a financial proposal under the 9MP (Mid-Term Review). The Climate Change Task Force, under the chairmanship of Prof Muhamad Awang, FASc held a Workshop on 17 November. The Task Force decided that it needed to focus on identifying the gaps in scientific knowledge that can be covered by ASM which will complement work currently being undertaken by government agencies and research institutes. As such, it was decided that ASM would focus on the study of the impact of climate change and would address the socio-economic aspect of its impact on various levels of the population in the country. An Advisory Report for the government's consideration on the science, impact and adaptation needs in preparing Malaysia to face climate change and Study Reports for various Ministries would be delivered by end of the 9MP and 10MP periods.

Makanan Haiwan Ternakan: Isu, Strategi dan Peluang

Badan Bertindak Bioteknologi dan Pertanian yang dipengerusikan oleh Prof Dato' Mohamed Mahyuddin Mohd Dahan, FASc telah mengikuti satu taklimat oleh Kementerian Pertanian dan Industri Asas Tani (MOA) akan status, isu dan cabaran yang dihadapi Negara dalam usaha melangkah ke arah pertanian. Satu seminar dijadualkan bulan April 2008 untuk meneliti bidang mengimpot makanan haiwan ternakan yang menjadi beban kewangan kepada Kerajaan. Isu makanan haiwan ternakan yang membantu mengenal pasti



Animal Feedstuffs: Issues, Strategies and Opportuntities

The Biotechnology and Agriculture Task Force, chaired by Prof Emeritus Dato' Mohamed Mahyuddin Mohd Dahan, FASc was given a briefing by the Ministry of Agriculture and Agro-based Industries (MOA) on the status, issues and challenges faced by the nation in its thrust towards agriculture. A seminar is scheduled for April 2008 to look into this area, as it is costing the Government a massive amount of money to import feedstuff. Animal feed issues that will also aid in identifying R&D requirements and production of animal

keperluan P&P dan penghasilan makanan haiwan ternakan juga akan dikaji. Prosiding seminar berkenaan dan satu Laporan Penasihat dijangka akan diterbitkan dan diserah kepada MOA sebelum penghujung tahun 2008.

Polisi dan Perancangan Reaksi Terhadap Bencana Gempa Bumi dan Tsunami

Majlis ASM telah bersetuju bahawa Universiti Kebangsaan Malaysia (UKM) menjalankan, bagi pihak Akademi, satu projek nasihat berjudul 'Polisi dan Perancangan Reaksi Terhadap Bencana Gempa Bumi dan Tsunami di Malaysia'. Kajian ini dijangka ditamatkan pada bulan Julai 2008 dan satu Laporan Penasihat yang menyentuh perkara-perkara berikut akan dikemukakan:

- Pemahaman saintifik mengenai mekanisme tektonik dan seismositi di Utara Sumatra dan wilayah Sulawesi dan bagaimana ia menggugat keselamatan dan kestabilan jangka panjang muka bumi di Malaysia;
- Maklumat berasaskan GIS mengenai tektonik, seismositi dan bencana akibat seismo di kawasan Asia Tenggara yang mengakibatkan kemungkinan risiko kepada Malaysia yang boleh digunakan dalam perancangan dan polisi mengenai respons;
- Pendokumenan mengenai analisis risiko gempa bumi dan tsunami di Semenanjung Malaysia dan Sabah; dan
- Syor-syor berhubung polisi dan perancangan bagi menghadapi/menangani risiko gempa bumi dan tsunami di Malaysia.

feed will also be addressed. The Proceedings and an Advisory Report are expected to be published and delivered to MOA by the end of 2008.

Policy and Planning Responses for Earthquake and Tsunami Hazards

The ASM Council has agreed that Universiti Kebangsaan Malaysia (UKM) undertake an advisory project entitled 'Policy and Planning Responses for Earthquake and Tsunami Hazards in Malaysia' for the Academy. The Study would be completed by July 2008 and an Advisory Report would be presented addressing the following:

- Scientific understanding on the mechanism of tectonicity and seismicity in the Northern Sumatra and Sulawesi regions and how it affects the safety and long term stability of Malaysian land;
- GIS-based information on tectonic, seismic and seismic-induced hazards to the South East Asian region which pose potential risks to Malaysia that can be used for planning and policy responses;
- Documentation on earthquake and tsunami risk analysis for Peninsular Malaysia and Sabah; and
- Recommendations on policy and planning for managing earthquake and tsunami risk in Malaysia.

Kecemerlangan Sains

Malaysia, sebagai sebuah negara yang maju dan pesat membangun dalam bidang sains, teknologi dan inovasi, perlu meningkatkan kebolehan dan kemampuan di dalam bidang penyelidikan dan pembangunan. Akademi memainkan peranan yang penting dalam membantu negara mencapai matlamat ini dengan menerajui program-program kecemerlangan sains melalui pelbagai aktiviti melibatkan pelbagai kumpulan sasar. Melalui program ini, Akademi telah menjemput ramai pemenang Hadiah Nobel dan saintis terkenal dengan tujuan membina jaringan kerjasama dengan pusat kecemerlangan sains dan teknologi dunia. ASM juga mengurus dana SAGA untuk penyelidikan sains asas bagi membangunkan sains asas yang bertaraf antarabangsa.

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Science Excellence

It is imperative for Malaysia as a fast growing nation in science, technology and innovation, to increase its capacity and capability in research and development. The Academy plays a vital role in meeting this demand by fostering a culture of scientific excellence through programmes for various target groups. Through this platform, the Academy invites many Nobel Laureates and eminent scientists with the aim of building networks and collaboration with many of the world's centres of excellence in S&T. Under this thrust, the Academy also manages the Scientific Advancement Fund Allocation (SAGA) for Fundamental Science research which is awarded to develop a strong fundamental science base of international standard in Malaysia.

Anugerah Sains Mahathir 2007

ASM telah menghadiahkan Anugerah Sains Mahathir 2007 kepada Prof Joseph Sriyal Malik Peiris dari University of Hong Kong mengenangkan sumbangan luar biasa beliau mengenai Perubatan Tropika, khususnya penemuan agen etiologi yang menyebabkan SARS yang membuka jalan untuk memahami patogenesis dan epidemiologi penyakit berkenaan dalam tahun 2003. Beliau menerima hadiah RM100 000, satu pingat emas dan sijil.

Anugerah Sains Mahathir dihadiahkan kepada mana-mana saintis, institusi atau persatuan di serata dunia mengenangkan sumbangan dan inovasi ke arah menyelesaikan masalah yang melanda kawasan tropika melalui sains dan teknologi. Anugerah ini dihadiahkan kepada individu yang paling layak berdasarkan merit. Melalui hadiah ini Akademi berharap satu tanda aras baru akan tercipta untuk kerja-kerja berhubung sains tropika dan profil sains di Malaysia di kawasan tropika akan menjulang ke peringkat yang lebih unggul.

Mahathir Science Award 2007

ASM awarded the Mahathir Science Award 2007 to Prof Joseph Sriyal Malik Peiris of the University of Hong Kong for his outstanding contributions to Tropical Medicine, especially for his discovery of the aetiological agent causing SARS leading to understanding of the pathogenesis and epidemiology of the disease in 2003. He will receive RM100 000, a gold medal and a certificate.

The Mahathir Science Award is bestowed on any scientist, institution or organization worldwide in recognition of contributions and innovations towards solving problems in the tropics through science and technology and it is to be awarded to the most deserving based on merit. The Academy hopes that through this award a new benchmark will be set for work related to tropical sciences and the profile of science in Malaysia in the region of the tropics would rise to greater heights.

Lawatan ke California Institute of Technology (Caltech), Pasadena, California

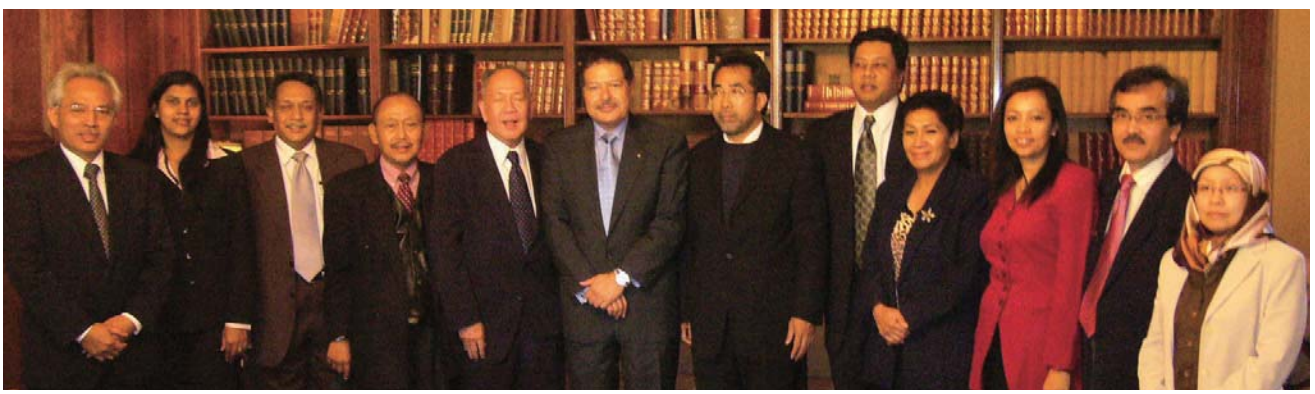
Akademi telah menyelaraskan dan turut serta dalam lawatan ke Caltech dan mengatur pertemuan antara Prof Ahmed Zewail (Pemenang Hadiah Nobel dalam bidang Kimia 1999) dengan YB Menteri Sains, Teknologi dan Inovasi serta delegasi beliau pada tanggal 1 Mei. Lawatan ini telah membawa kepada lawatan Prof Zewail ke Malaysia pada 4–11 Ogos 2007 untuk menghadiri beberapa program utama termasuk acara penganugerahan Felo Kehormat oleh ASM dan Doktor Kehormat oleh dua Universiti tempatan serta pelancaran buku Prof Zewail bertajuk *Voyage Through Time* yang diterjemah ke bahasa Melayu.

Visit to the California Institute of Technology (Caltech), Pasadena, California

The Academy co-ordinated and participated in the visit to Caltech and the meeting with Prof Ahmed Zewail (Nobel Prize Winner in Chemistry, 1999) by the Hon. Minister of Science, Technology and Innovation and his delegation (1 May). This visit resulted in Prof Zewail's visit to Malaysia on 4–11 August 2007 for several key programmes including the conferment of the ASM Honourary Fellowship and Honourary Doctorates by two Malaysian Universities as well as the launching of the translation of Prof Zewail's book, *Voyage Through Time* into Malay.



Perbincangan bersama-sama Prof Ahmad Zewail di Caltech.
Discussion with Prof Ahmed Zewail at Caltech. ▲



Deligasi Malaysia ke Caltech.
Malaysian delegation to Caltech. ▲

Lawatan ke California Nanosystems Institute (CNSI), University of California, Los Angeles (UCLA)

Misi ke CNSI di ULCA bermatlamat membuka laluan kerjasama dengan industri dan membolehkan pengkomersilan segera segala penemuan dalam bidang nanosistem. Ia memudahkan satu pendekatan pelbagai-disiplin demi membangunkan segala maklumat, bioperubatan dan teknologi perkilangan, yang akan mendominasi sains dan ekonomi dalam abad ke-21. Semasa dalam lawatan tersebut (30 April), delegasi ASM telah mempelajari cara membangunkan Inisiatif Nanoteknologi Malaysia berasaskan model Amerika Syarikat. Delegasi juga telah menimba maklumat

Visit to the California Nanosystems Institute (CNSI), University of California, Los Angeles (UCLA)

The mission of CNSI in UCLA is to promote collaboration with industry and to enable the rapid commercialization of discoveries in nanosystems. It facilitates a multi-disciplinary approach to develop the information, biomedical and manufacturing technologies that will dominate science and economy in the 21st century. The ASM delegation during the visit (30 April) obtained insights on how to develop the Malaysian Nanotechnology Initiative based on the US model. They garnered information on how to forge partnerships with industry as a way

mengenai cara menjalin rakan kongsi dengan industri sebagai satu jalan untuk mempercepatkan pemindahan teknologi di kalangan masyarakat pada amnya di samping mempelajari pentingnya memiliki kepakaran tertentu dalam menikmati kemajuan dalam bidang nanosains dan nanoteknologi di arena antarabangsa yang bersaing sengit. Mereka juga tertarik dengan maklumat mengenai pembangunan penyelidikan secara kerjasama, berkongsi pengetahuan dan bertukar-tukar pelajar. Lawatan ini telah membantu Akademi meraih sokongan untuk menjalin kerjasama dua hala selain memperoleh kenalan penting untuk dipelawa sebagai pensyarah di Nanotech Malaysia 2007.

to accelerate technological changes for society in general and learnt the importance of being equipped with the expertise essential in making rapid progress in nanoscience and nanotechnology against fierce international competition. Information on developing collaborative research, sharing knowledge and student exchange was also impressed upon them. The visit also assisted the Academy in securing support for mutually beneficial collaboration with Malaysian scientists and obtained useful contacts for invitation as speakers for Nanotech Malaysia 2007.



Deligasi ASN ke CNSI.
ASM delegates to CNSI ▲



Deligasi ASN di NSF.
ASM delegation at NSF. ►

Lawatan ke US National Science Foundation (NSF)

Semasa dalam lawatan pada 4 Mei, delegasi ASM telah berbincang dan mempelajari peranan, fungsi dan mekanisme pembiayaan NSF di samping memperoleh maklumat dan jaringan yang penting bagi membolehkan perancangan Akademi terutamanya dalam urusan penilaian projek untuk pembiayaan P&P, pengagihan kewangan dan pemantauan. ASM juga digalakkan menghubungi Pegawai Sains di Kedutaan Amerika Syarikat untuk menjalin kerja-kerja usaha sama.

Visit to the US National Science Foundation (NSF)

The ASM delegation, during the visit on 4 May, discussed and learnt the roles, functions and funding mechanism of the NSF, and obtained the necessary information and linkages for assistance in facilitating the Academy's planning of programmes and collaboration, particularly in relation to management of vetting of projects for R&D funding, disbursements, monitoring and evaluation. ASM was also encouraged to contact the Science Officer of the US Embassy for collaborative work.

PROGRAM BERSAMA NOBEL LAUREATE DI MALAYSIA

Sepanjang tahun 2007, ASM telah berjaya menyusun program di Malaysia untuk empat Pemenang Hadiah Nobel. Program-program ini telah merekodkan peningkatan jumlah hadirin. Malah sesetengah acara berjaya menarik hampir seribu atau lebih hadirin. Peningkatan hadirin ini mungkin disebabkan oleh minat masyarakat berhubung syarahan Nobel Laureate yang semakin meningkat di samping peningkatan publisiti yang dilakukan oleh Akademi.

Dr Richard Roberts (Pemenang Hadiah Nobel dalam bidang Fisiologi atau Perubatan, 1993)

Dr Richard Roberts, pemenang hadiah Nobel dalam bidang fisiologi perubatan tahun 1993 berikutan penemuan gen rekah, telah menyampaikan suatu Syarahan Umum (bertajuk '*Friends and Foes—The Unseen Bugs Who Share Our Planet*') bertempat di Pusat Konvensyen Kuala Lumpur. Di majlis ini beliau telah memberitahu hampir 550 hadirin mengenai dunia kita yang mempersonakan ini yang dikelilingi oleh pelbagai benda hidup—yang terlihat oleh mata kasar dan yang mikroskopik. Pada hari yang sama syarahan Motivasi Sains beliau yang bertajuk, 'Mengapa Belajar Sains?' yang ditujukan kepada seramai lebih kurang 350 pelajar sekolah juga telah diadakan di Pusat Sains Negara di mana pelajar muda ini telah belajar pentingnya sains, menyelami apa yang tidak diketahui dan diberitahu bahawa dalam sains tiada yang mustahil.

PROGRAMMES WITH NOBEL LAUREATES IN MALAYSIA

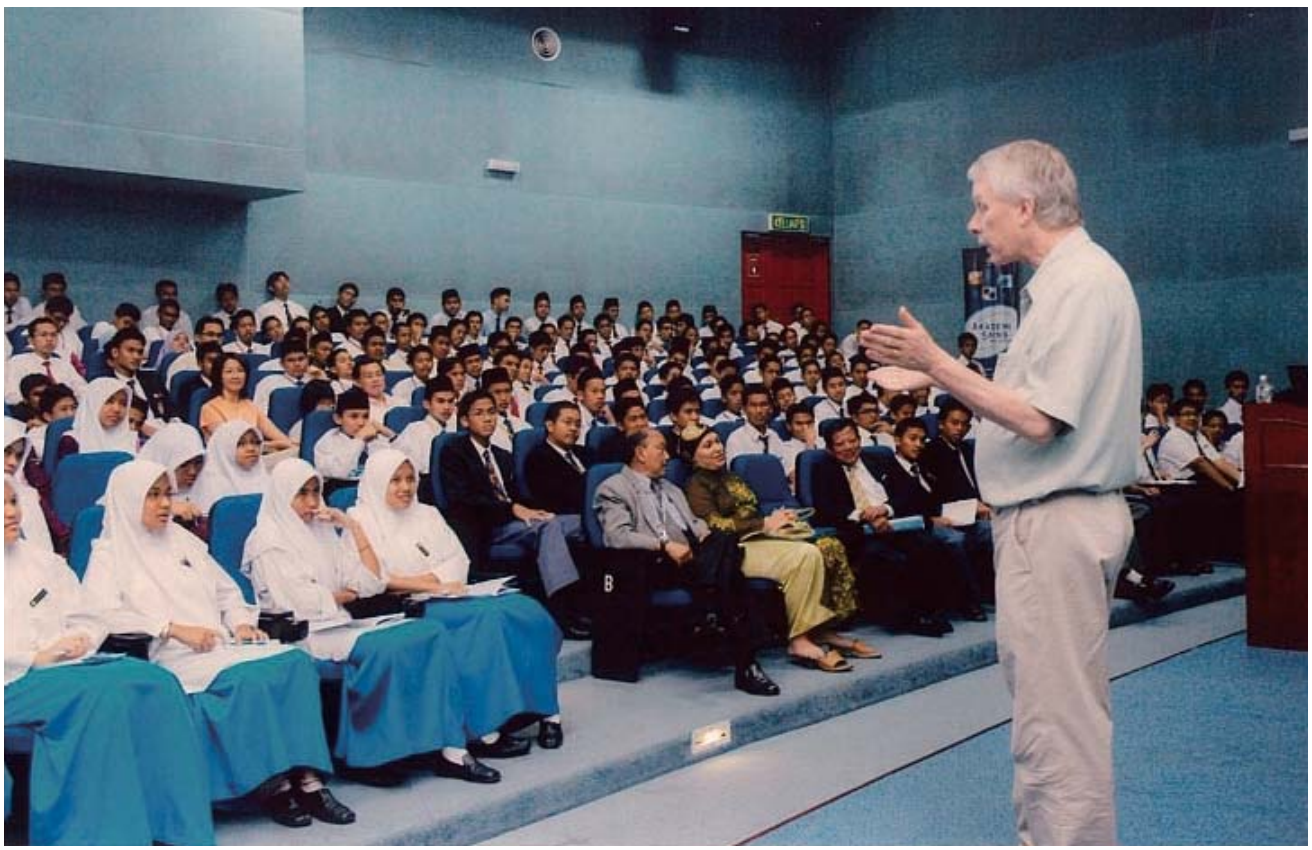
In 2007, the Academy successfully organized programmes in Malaysia with four Nobel Prize Winners. These programmes showed a significant increase in attendance with some events drawing an audience of almost one thousand or more. The increase in attendance could be attributed to greater public interest in the Nobel Laureate Lectures as well as the increased publicity efforts by the Academy.

Dr Richard Roberts (Nobel Prize in Physiology or Medicine, 1993)

Dr Richard Roberts, the Nobel Prize winner in physiology of medicine in 1993 for the discovery of split genes, delivered a Public Lecture (entitled 'Friends and Foes—The Unseen Bugs Who Share Our Planet') on 5 April at the KL Convention Centre where he enlightened the audience of around 550 people on the fascinating world surrounded by life—the visible and microscopic. His Science Motivation talk, 'Why Study Science?' targeted for around 350 school students, was also held on the same day at the National Science Centre in which the importance of science, exploring the unknown, and that there is nothing impossible in science was inculcated in the young, who dominated the audience.



Dr Richard bersama Presiden ASM dan Felo.
Dr Richard with ASM President and Fellows. ►



Syarahan disampaikan oleh Dr Roberts.
Dr Roberts' presentation. ▲

Dr Mohamed El Baradei (Pemenang Nobel Peace Prize, 2005)

ASM, dengan kerjasama Agensi Nuklear Malaysia dan Lembaga Perlesenan Tenaga Atomik, di bawah pucuk pimpinan MOSTI, telah menganjurkan siri Syarahan Umum di atas pada tanggal 18 Julai. Dr El Baradei, Ketua Pengarah International Atomic Energy Agency telah memberikan syarahan bertajuk '*Nuclear Power: Looking to the Future*', di mana beliau menegaskan akan peningkatan permintaan tenaga di serata dunia terutama sekali oleh negara-negara membangun selain kebangkitan semula minat dalam tenaga nuklear sebagai sumber tenaga. Dr El Baradei merupakan penerima pertama hadiah Peace Prize yang telah menyampaikan syarahan umum di bawah Program Nobel Laureate Kebangsaan. Mengikut amalan biasa

Dr Mohamed El Baradei (Nobel Peace Prize in 2005)

On 18 July, ASM in collaboration with the Malaysian Nuclear Agency and Atomic Energy Licensing Board under the leadership of MOSTI, organized another Public Lecture. Dr El Baradei, the Director General of the International Atomic Energy Agency lectured on the subject of 'Nuclear Power: Looking to the Future', where he emphasized on the growing demand for energy worldwide especially in developing countries and the renewed interest in nuclear power for energy. Dr El Baradei was the first Nobel Peace Prize Laureate to have delivered a public lecture under the National Nobel Laureate Programme, thus moving away from the norm

hanya Nobel Laureate dalam bidang sains diundang untuk menyampaikan syarahan. Seramai hampir 700 hadirin menghadiri syarahan ini di mana beberapa komen dan soalan telah dijawab oleh Dr El Baradei, semasa syarahan dan juga sewaktu persidangan akhbar.



Dr Mohamed El Baradei semasa menyampaikan Syarahan Umum beliau.
Dr Mohamed El Baradei during his Public Lecture. ▲

Prof Ahmed Zewail (Pemenang Hadiah Nobel dalam bidang Kimia, 1999)

Pada tanggal 8 Ogos, bertempat di KLCC, Prof Zewail telah menyampaikan Syarahan Umum bertajuk '*Investing in the Future*' yang dihadiri oleh lebih kurang 1800 orang yang mewakili pelbagai kementerian, dan agensi di bawah naungan MOSTI, universiti, penuntut dan orang awam. Di Majlis Makan Malam ASM dan Simposium Antarabangsa, beliau telah dianugerahkan Felo Kehormat ASM. Beliau menjadi penerima ketiga anugerah ini sehingga kini. Di majlis ini juga beliau telah menghadiahkan sijil kepada Felo dan Felo Kanan yang baru dilantik.

Program utama lain bersama Prof Zewail di Malaysia ialah:

Pada 7 Ogos di UM, Upacara Konvokesyen Khas penganugerahan Doktor Kehormat oleh Universiti Malaya (UM) kepada Prof Zewail disampaikan oleh Tuanku Pro-Chancellor UM, Raja Dr Nazrin Shah dan Sesi Dialog dengan Para Penyelidik UM mengenai Sains Bioperubatan dan Sains Fizikal di samping satu lawatan ke makmal Combinatorial Catalysis; Ucapan Pleno di Upacara Pembukaan Simposium Antarabangsa

of only hosting Nobel Laureates in the sciences. About 700 attended the lecture and numerous comments and queries were entertained by Dr El Baradei, both at the lecture and press conference.



Khalayak di Syarahan Umum Dr El Baradei.
Audience at Dr El Baradei's Public Lecture. ▲

Prof Ahmed Zewail (Nobel Prize in Chemistry, 1999)

Prof Zewail delivered a Public Lecture entitled 'Investing in the Future' on 8 August which was attended by an audience of around 1800 from various Ministries and Agencies under MOSTI, universities, students and the general public, at the KLCC. At the subsequent ASM and International Symposium Dinner he was conferred the Honorary Fellowship of ASM, only the third person ever to date, and he also presented certificates to the newly appointed Fellows and a Senior Fellow.

Other key programmes with Prof Zewail in Malaysia were:

Special Convocation ceremony for the conferment of Honorary Doctorate by University of Malaya (UM) to Prof Zewail by Tuanku Pro-Chancellor UM, Raja Dr Nazrin Shah and Dialogue Session with UM Researchers on Biomedical Science and Physical Sciences as well as a visit to Combinatorial Catalysis laboratory at UM on 7 August; Plenary Address at the Opening Ceremony

mengenai Sains, Teknologi dan Inovasi Islam bertajuk '*Reflection on Science, Technology and Innovation in the Muslim World*'; pelancaran buku Prof Zewail *Voyage Through Time* yang diterjemahkan ke Bahasa Melayu oleh YB Menteri, MOSTI; upacara Konvokesyen Khas penganugerahan Doktor Kehormat oleh Universiti Kebangsaan Teknologi, kunjungan hormat menemui YAB Perdana Menteri pada 9 Ogos.

of the International Symposium on Islamic Science, Technology and Innovation entitled 'Reflections on Science, Technology and Innovation in the Muslim World'; launch of Prof Zewail's Book: *Voyage Through Time* translated into Malay by YB Minister, MOSTI; Special Convocation ceremony for the Conferment of Honorary Doctorate by University Technology Malaysia, Courtesy Call on YAB Prime Minister on 9 August.



◄ *Syarahan Umum oleh Prof Ahmed Zewail.*
Public Lecture by Prof Ahmed Zewail.



Prof Zewail bergandingkan dengan wakil dari ASM dan universiti.
Prof Zewail with ASM and university officials. ▲

Prof Sherwood Rowland (Pemenang Hadiah Nobel dalam bidang Kimia, 1995)

Prof Sherwood Rowland (Pemenang Hadiah Nobel dalam bidang Kimia, 1995) telah menyampaikan syarahan bertajuk 'Peningkatan Suhu Global dan Perubahan Iklim' bertempat di Palace of Golden Horses pada 21 Ogos. Syarahan ini telah dihadiri oleh lebih 400 penyelidik dan perumus polisi yang terlibat dalam bidang perubahan iklim di Malaysia.

Dalam syarahan beliau, Prof Rowland memberitahu bahawa pencairan ais dan permafrost di kawasan kutub utara dan penyusutan glasier merupakan petunjuk mengenai peningkatan suhu global yang bukan hanya merupakan satu amaran mengenai masa depan sebaliknya menunjukkan perubahan yang telah berlaku. Kesan awal peningkatan suhu ini memang sudah jelas, dan apa yang merunsingkan ialah perubahan besar iklim dalam masa terdekat. Beliau juga membincangkan model kemungkinan masa depan terhadap atmosfera akibat meningkatnya pembebasan gas-gas rumah hijau dan sesetengah kesan yang mungkin berlaku berikutan

Professor Sherwood Rowland (Nobel Prize in Chemistry 1995)

Prof Sherwood Rowland (1995 Nobel Laureate in Chemistry) delivered a lecture entitled 'Global Warming and Climate Change' at the Palace of Golden Horses Hotel on 21 August which was attended by more than 400 researchers and policy makers involved in the area of climate change in Malaysia.

In his lecture, Prof Rowland mentioned that the melting of ice and permafrost in the North Polar region and the shrinking of glaciers are signals that global warming is no longer solely a warning about the future, but changes which have already taken place. The initial effects of this warming are noticeably present already, and the concerns were now of substantial climate change in the near future. He also discussed modeling of the future consequences to the atmosphere from increased release of greenhouse gases and some of the possible

perubahan iklim, umpamanya peningkatan paras air laut dan pencairan ais di kutub utara.

Kemudian dalam satu dialog yang dihadiri seramai 40 orang penyelidik dan perumus polisi yang terlibat dalam soal perubahan iklim merangkumi Felo dari Akademi, Ahli ASM dalam Badan Bertindak Perubahan Iklim, saintis penyelidik universiti-universiti, Jabatan Metereologi Malaysia, Jabatan Kimia, Agensi Nuklear Malaysia dan pakar tempatan yang telah bersara telah berbincang mengenai penyelidikan terhadap unjuran dan model iklim, pembangunan keupayaan, pemindahan teknologi dan usaha kerjasama.

consequences of climate change, such as rising sea levels and melting of the north polar ice.

At a dialogue which ensued, 40 researchers and policy makers involved in the area of climate change comprising Fellows of the Academy, Climate Change Task Force Members of ASM, research scientists from universities, Malaysian Meteorological Department, Department of Chemistry, Malaysian Nuclear Agency, and local retired experts discussed matters related to research on climate projection and modeling, capacity building, technology transfer and collaboration.



◄ *Prof Sherwood Rowland dan Felo ASM. Prof Sherwood Rowland with ASM Fellows.*

Syarahan Umum oleh Prof Sherwood Rowland. Public Lecture by Prof Sherwood Rowland. ►



Penyertaan Delegasi Malaysia di Mesyuarat Pemenang Hadiah Nobel dengan Saintis Muda di Lindau, Jerman, 2007

Empat saintis muda Malaysia: Dr Chan Yoke Fun (Pensyarah Virologi Molekul), Dr Tunku Kamarul Zaman Tunku Zainol Abidin (Pensyarah Surgeri Ortopedik), Tee Kok Keng (Mahasiswa PhD, Epidemiologi Molekul mengenai HIV) dan Mohd Mokrish Md Ajat (Tutor/ Mahasiswa PhD, Nanobioteknologi) terpilih untuk menghadiri Mesyuarat Nobel Laureate dengan saintis muda ke-57 di Lindau, Jerman khusus untuk disiplin fisiologi atau perubatan yang telah berlangsung pada 1–6 Julai.

Participation of Malaysian Delegation in the 2007 Meeting of Nobel Prize Winners with Young Scientists in Lindau, Germany

Four Malaysian young scientists: Dr Chan Yoke Fun (Lecturer, Molecular Virology), Dr Tunku Kamarul Zaman Tunku Zainol Abidin (Lecturer, Orthopaedic Surgery), Tee Kok Keng (PhD student, Molecular Epidemiology of HIV) and Mohd Mokrish Md Ajat (Tutor/PhD student, Nanobiotechnology), were selected to participate in the 57th Lindau Nobel Laureates meeting dedicated to the physiology of medicine discipline that was held on 1–6 July in Lindau, Germany.

Mesyuarat Nobel Laureate bersama Saintis Muda di Lindau merupakan satu majlis perhimpunan tahunan bertempat di Tasik Constance, Jerman sejak 1951. Mesyuarat ini telah berubah wajah menjadi pertemuan di peringkat antarabangsa antara para Pemenang Hadiah Nobel dengan saintis muda dan penuntut dari lebih 40 buah negara dari serata dunia dengan minda terbuka. Setiap tahun lebih 11 500 belia pintar dan saintis muda dari serata dunia bertanding untuk menghadirinya tetapi hanya 500 calon yang berjaya dipilih. Malaysia telah menghadiri mesyuarat ini sejak tahun 2004. Berikutan satu Memorandum Persefahaman yang termeterai dalam tahun 2005, ASM dianggap sebagai rakan Majlis Lindau yang bertanggungjawab dalam pencalonan saintis muda ke mesyuarat ini.

Mesyuarat Lindau yang merupakan satu pengalaman pembelajaran yang luar biasa, menyediakan satu forum saintifik unik untuk dialog yang merangsangkan mengenai penemuan baru, dan penyelidikan atau perbincangan harian terhadap kesan lebih meluas yang terhasil daripada usaha P&P Pemenang Hadiah Nobel. Prof Looi Lai Meng, FASc mengetuai Delegasi Malaysia ke Mesyuarat ini selain mewakili ASM di mesyuarat Rakan Akademik pada 3 Julai, di mana Majlis Lindau telah menyatakan rasa puas hati akan mutu saintis muda Malaysia yang dicalon menghadiri mesyuarat tersebut melalui proses pemilihan ASM yang tegas. Penglibatan Delegasi Malaysia di Mesyuarat Lindau menerima liputan media terutama RTM menerusi berita Perdana.

Sebelum delegasi Malaysia berlepas ke Lindau, pada 22 Jun mereka telah menghadiri satu sesi orientasi yang telah dikelolakan oleh ASM. Majlis ini turut dihadiri oleh TYT Herbert D. Jess, Duta Besar Jerman ke Malaysia yang telah menyampaikan satu syarahan bertajuk, *Sejarah Latarbelakang Mesyuarat Pemenang Hadiah Nobel di Lindau dan Prespektif terhadap Penyelidikan dan Pembangunan Jerman*. Di samping ini terdapat dua penyampaian lagi yang disampaikan oleh Academician Prof Looi Lai Meng, FASc mengenai *Overview of Research Focus Areas in the Field of Physiology or Medicine in Malaysia and Globally* dan satu pidato yang disampaikan oleh Prof Asma Ismail, FASc bertajuk, *Overview of the Post Lindau Meeting Visit to Centres of Excellence in UK*. Sesi orientasi ini yang telah mendapat liputan media secara meluas dan disertai oleh 12 perwakilan media tempatan.

The Lindau Nobel Laureates Meeting with Young Scientists is an annual Gathering in Lindau on Lake Constance, Germany since 1951. The Lindau Nobel Laureates Meeting has developed into an international open-minded encounter between Laureates, young scientists and students from over 40 countries worldwide. Annually over 11 500 young top talents and young scientists worldwide compete to participate and only around 500 are selected. This meeting has seen Malaysian participation since 2004. ASM is the partner organization of the Lindau Council which is responsible for the Malaysian nominations of young scientists for the meeting through a MoU signed in 2005.

The Lindau Meetings provide a unique scientific forum for stimulating dialogue on new findings, and day-to-day research or discussion on the wider consequences of the Laureate's R&D work, which constitute a remarkable learning experience. Prof Looi Lai Meng, FASc led the Malaysian Delegation for the 2007 Lindau Meeting and represented ASM at the meeting of Academic Partners on 3 July, where the Lindau Council expressed commendation for the quality of Malaysian young scientists nominated for the Meetings through the Academy's stringent vetting process. The participation of the Malaysian Delegation in the Lindau meeting received wide media coverage particularly by RTM on prime time news.

An orientation session for the Malaysian Delegation to the Lindau meeting was organized by ASM on 22nd June prior to the trip to Lindau. The orientation session was attended by HE Herbert D. Jess, German Ambassador to Kuala Lumpur who presented a talk on the 'Historic background of the Nobel Prize Winners Meetings in Lindau and Perspectives on German Research and Development'. Besides that there were two other presentations by Academician Prof Looi Lai Meng, FASc. on 'Overview of Research Focus Areas in the Field of Physiology or Medicine in Malaysia and Globally' and by Prof Asma Ismail, FASc on 'Overview of Post- Lindau Meeting Visits to Centres of Excellence in UK'. The orientation session was also well covered by around 12 members of the local media.

Lawatan ke Pusat-pusat Kecemerlangan UK

Berikutan Mesyuarat Lindau, satu lawatan sambil belajar ke Pusat-pusat kecemerlangan di UK (7–13 Julai) telah diurus untuk mendedahkan saintis muda satu pengalaman yang sungguh memperkayakan. Hasrat ini dicapai menerusi kunjungan ke pusat-pusat kecemerlangan /institusi/pertubuhan tersohor di dunia dan bertemu dengan saintis di sana untuk mewujudkan jaringan demi kerjasama penyelidikan dan penempatan post doctoral fellowship. Lawatan ini yang diketuai oleh Prof Asma Ismail, FASc juga telah dihadiri oleh tiga orang Profesor Kanan dari Institusi Pengajian Tinggi dan Institut Penyelidikan.

Tempat-tempat yang dilawati termasuklah Cambridge Science Park; Institute of Biotechnology, Cambridge University; Department of Haematological Medicine, King's College London; Wellcome Trust Sanger Institute; EMBL-European Bioinformatics Institute; Imperial College, London dan Institute of Biomedical Engineering.

Kumpulan itu diberitahu akan penekanan terhadap penyelidikan pelbagai disiplin, menghubungkan P&P dengan pengkomersilan dan pembentukan kelompok/kluster berdasarkan tema penyelidikan merupakan sebahagian daripada tren yang diamalkan berkaitan P&P di sana. Kesemua ini mungkin boleh ditinjau dan dieksploitasi oleh saintis muda untuk terus maju serta berjaya dalam kerjaya sebagai seorang saintis. Semasa lawatan, perbincangan antara saintis muda dengan saintis kanan telah melahirkan pemikiran kritikal, berminda terbuka ketika mengeketengahkan pendapat dan idea, saling bertukar-tukar pengetahuan yang secara tidak langsung membawa kepada penjalinan mentor oleh saintis muda.

Lawatan ini telah menghasilkan dua penempatan PhD di Sanger Institute dan King's College dan juga jaringan penyelidikan kerjasama dengan Imperial College untuk saintis muda.

Visit to the UK Centres of Excellence

Following the 2007 Lindau meeting, a study visit (7–13 July) to centres of excellence in UK was organized to provide young scientists an enriching learning experience by visiting world renowned centres of excellence/institutions/organizations and meet the scientists there to establish linkages for research collaboration and attachments for post-doctoral fellowships. This visit was led by Prof Asma Ismail FASc. and she was joined by three other Senior Professors from Malaysian Institutions of Higher Learning and Research Institutes.

Places visited were Cambridge Science Park; Institute of Biotechnology, Cambridge University; Department of Haematological Medicine, King's College London; Wellcome Trust Sanger Institute; EMBL-European Bioinformatics Institute; Imperial College, London and the Institute of Biomedical Engineering.

The group learnt that emphasis on multi-disciplinary research, linking R&D with commercialisation and the formation of cluster groups on research themes were some of the trends in existence in the R&D environment there. These trends could be explored and exploited by Malaysian young scientists to excel as a scientist. During the visit, discourse among the young scientists and senior scientists enabled critical thinking, open-minded expression of thoughts and ideas, exchange of knowledge that led to an indirect mentoring of the young scientists.

This visit facilitated two PhD attachments at Sanger Institute and King's College, respectively as well as a collaborative research linkage with Imperial College for the young scientists.

Konvensyen Sains dan Teknologi Malaysia (MASTEC)

Dalam konteks ekonomi global yang cepat berubah lagi kompetitif, Malaysia hadapi cabaran untuk terus kekalkan daya saing kompetitifnya dan membangunkan ekonomi yang teguh berasaskan sains, teknologi dan inovasi untuk menjana kekayaan dan kesejahteraan sosial. Hasrat ini memerlukan satu anjakan, dari ekonomi berasaskan sumber alam ke ekonomi berasaskan inovasi yang akan memberi penekanan kepada pengetahuan, inovasi dan sumber manusia dinamik, sebagaimana ditegaskan menerusi Rancangan Malaysia Kesembilan dan Misi Kebangsaan 2006–2010.

Menyedari akan perlunya penilaian dan respons proaktif sebagai prasyarat untuk melangkah ke hadapan dengan matlamat membangunkan ekonomi berasaskan inovasi sebagaimana diinginkan oleh Kerajaan, maka lahirlah MASTEC 2007. Konvensyen ini dianjur dengan tema, '*Malaysian Science and Technology : Strategizing and Investing Now for the Future*' pada 10–12 Disember bertempat di Hotel Marriott Putrajaya.

MASTEC dianjur dua kali setahun untuk menyediakan satu pentas kebangsaan penyemakan semula segala pencapaian, cabaran dan potensi sains, teknologi dan inovasi melalui perbincangan pihak berkepentingan dengan para pelaksana pelbagai sektor termasuk sektor swasta untuk bertukar-tukar pendapat dan berbincang untuk mengutarakan syor-syor yang releven dalam memacu negara kita ke hadapan.

MASTEC 2007 mempunyai lima lingkup fokus:

- Peranan Sains, Teknologi dan Inovasi dalam K-ekonomi
- Keperluan modal insan untuk Sains, Teknologi dan Inovasi
- Memperkukuh pendidikan sains untuk K-ekonomi
- Memperkukuh industri asli berasas-K dalam satu K-ekonomi; dan
- Merancang, melabur dan membiayai pembangunan K-ekonomi.

Konvensyen ini telah dibuka secara rasmi oleh YB Dato' Kong Cho Ha, Timbalan Menteri Sains, Teknologi dan Inovasi. Lebih 200 peserta Konvensyen yang terdiri dari

Malaysian Science and Technology Convention (MASTEC)

In the context of a rapidly changing, competitive global economy, the challenge for Malaysia is to maintain a competitive advantage and gain economic strength by harnessing science, technology and innovation for wealth creation and societal well-being. This calls for a shift from a resource-led economy to an innovation-led economy that emphasizes knowledge, innovation and dynamic human capital, as envisaged in the Ninth Malaysia Plan and National Mission, 2006–2010.

Recognizing the need for evaluation and proactive response to charter the way forward with emphasis on embracing an innovation economy as endorsed by the Government, MASTEC 2007 was organized on the theme, 'Malaysian Science and Technology: Strategizing and Investing Now for the Future' on 10–11 December at the Putrajaya Marriott Hotel.

MASTEC is organised bi-annually to provide a national platform to review the achievements, challenges and potential of science, technology and innovation by bringing the stakeholders and implementers of various sectors as well as the private sector into consultation and deliberation towards providing relevant recommendations on moving forward.

MASTEC 2007 had five main focus areas:

- The Role of Science, Technology and Innovation in a Knowledge Economy
- Preparing Human Capital for Science, Technology and Innovation
- Strengthening Science Education for a Knowledge Economy
- Enhancing Indigenous K-Based Industries in a Knowledge Economy; and
- Planning, Investing and Funding for a Knowledge Economy

The Convention was officiated by Dato' Kong Cho Ha, the Hon. Deputy Minister of Science, Technology

perumus polisi yang mewakili beberapa Kementerian Kerajaan, pihak pengurusan atasan institusi pengajian tinggi, institut penyelidikan, saintis, akademik, Pengurus STI dari persatuan Pihak Berkepentingan, pemimpin badan-badan profesional STI dan juga pemimpin sektor perniagan yang telah membincangkan tujuh kertas pleno yang disampaikan oleh pensyarah terkenal daripada penasihat pihak kerajaan dan sektor swasta. Perwakilan juga telah memberikan maklumbalas bernas.

MASTEC 2007 berhasrat memupuk satu tindakan terjurus dan berasaskan persefahaman yang sama, semua pihak berkenaan akan merumus strategi-strategi dan pelan tindakan yang sinergistik. Tindakan ini akan menentukan arah yang harus Malaysia lalui dalam bidang STI dalam dekad akan datang dan seterusnya, terutama berhubung agenda inovasi negara.

and Innovation. Over 200 convention participants comprising policy makers from several Government ministries, upper management from Institutions of higher learning, research institutes, scientists, academics, STI Managers of stakeholder organizations, leaders of STI professional bodies as well as business sector leaders deliberated on the seven plenary papers presented by eminent speakers from the government, private sector, consultants and provided valuable feedback.

MASTEC 2007 aimed to facilitate a concerted effort by all relevant parties to build upon a common understanding leading to the formulation of synergistic strategies and action plans to address the direction Malaysia should take in STI in the next decade and beyond particularly in relation to the innovation agenda of the nation.



◄ *Sesi forum MASTEC.*
MASTEC forum session.

Sesi soal-jawab semasa MASTEC.
Q&A Session during MASTEC. ►



Program Tabung Amanah Perubatan Dr Ranjeet Bhagwan Singh

Semasa mengunjungi Kuala Lumpur, Prof David Lane telah menyampaikan Syarahan Memorial di Institut Penyelidikan Perubatan dan satu syarahan umum. Dr David Lane yang dinobat sebagai seorang daripada sepuluh tokoh sains biomedikal tersohor/terkemuka di dunia dalam tahun 1990an. Beliau dianugerahkan darjah kesatria pada tahun 2000 atas sumbangan beliau terhadap penyelidikan kanser. Beliau merupakan seorang profesor dalam bidang onkologi molekular di University of Dundee. Beliau juga merupakan pengasas Cyclacel,

Dr Ranjeet Bhagwan Singh Medical Trust Fund Programmes

Prof David Lane delivered the Memorial Lecture at the Institute for Medical Research and a public lecture during his visit to Kuala Lumpur. Prof David Lane, named one of the world's top ten biomedical scientists of the 1990s was knighted in 2000 for his contributions to cancer research. He is a professor of molecular oncology at the University of Dundee; founder and now chief scientific officer at Cyclacel, a company developing drugs for the treatment of cancer; and is currently the executive director of the Institute of Molecular and Cell Biology,

sebuah syarikat pengeluar ubat perawatan kanser, kini memegang jawatan Ketua Pegawai Penyelidikan di syarikat tersebut. Dewasa ini beliau memegang jawatan Pengarah Eksekutif di Institute of Molecular and Cell Biology, Singapura. Prof Lane merupakan salah seorang daripada pakar sains yang dijulang berikutan penemuan terkemuka beliau mengenai gen kanser p53 yang dirujuk sebagai 'pelindung genom'.

Semasa penyampaian syarahan berjudul, '*Drug Discovery and Target Validation in the p53 Pathway*' Prof Lane menjelaskan bahawa gen penindas tumor p53 memainkan peranan penting dalam pencegahan kanser manusia kerana ia bertindak sebagai regulator utama/ master regulator manakala protein p53 pula berfungsi sebagai satu faktor transkripsi cetusan stres. Beliau telah berbincang mengenai pendekatan biomedikal dan pendekatan berasaskan sel dalam mengenal pasti drug yang menyelaraskan pathway p53 dan potensi drug ini dalam aplikasi terapeutik.

ASM juga telah menganjurkan satu syarahan umum bertajuk 'Mengubati Kanser' pada 19 Januari di mana Dr Lane telah menjelaskan faktor-faktor risiko yang kompleks, pelbagai dan berbilang yang berkaitan penyakit ini. Beliau memberitahu bahawa kemajuan besar yang dicapai dalam memahami sebab-sebab berlaku kanser manusia telah membawa kepada penemuan langkah-langkah pencegahan dan terapi yang lebih baik.

MOSTI dan ASM dengan kerjasama Fakulti Perubatan, Universiti Malaya dan National University of Singapore, telah menganjurkan Bengkel Teknikal Dr Ranjeet Bhagwan Singh yang Ketujuh ini yang bertajuk, '*RNAi and Human Disease*' pada 11–14 Disember. Menerusi bengkel ini para peserta mempelajari prinsip-prinsip mengenai RNA Interference (RNAi); mempelajari peranan miRNAs dan siRNAs dalam penyakit di kalangan manusia; memperoleh pengalaman pendekatan praktis dalam mengasingkan RNA kecil (RNAs) dan juga mengesan miRNAs spesifik di dalam darah dan tisu; serta memperoleh pengalaman pendekatan praktis mengenai perencatan spesifik ekspresi gen menggunakan RNAi. Bengkel ini telah dikendalikan oleh Prof Kandiah Jeyaseelan (Profesor biokimia dan biologi molekular) dan Dr Arunmozhiarasi Arumugam (Felo Penyelidikan Kanan, dari Jabatan Biokimia), Yong Loo Lim, School of Medicine, National University of Singapore.

Singapore. Prof Lane is one of the scientists credited with the landmark discovery of the cancer gene p53, also known as 'the guardian of the genome'.

During the lecture entitled 'Drug Discovery and Target Validation in the p53 Pathway' Prof Lane explained that the tumour suppressor gene p53 plays a major role in preventing human cancer as it acts as a master regulator with the p53 protein functioning as a stress induced transcription factor. He discussed biochemical and cell-based approaches to the identification of drugs that regulate the p53 pathway and their potential therapeutic application.

ASM also organized a Public Lecture entitled 'Curing Cancer' on 19 January where the complex, varied and multiple risk factors of the disease were explained by Prof Lane. He mentioned that great progress in the fundamental understanding of the causes of human cancer was guiding the discovery of improved preventative measures and better therapies.

MOSTI and ASM, in collaboration with the Faculty of Medicine, University of Malaya and National University of Singapore organized the Seventh Dr Ranjeet Bhagwan Singh Technical Workshop entitled 'RNAi and Human Diseases' on 11–14 December. The Workshop was organized to enable participants to learn the principles underlying RNA interference (RNAi); learn about the part played by miRNAs and siRNAs in human diseases; acquire hands-on experience in isolating small RNAs and to detect specific miRNAs in blood and tissues; and gain hands-on experience on specific inhibition of gene expression using RNAi. It was conducted by Prof Kandiah Jeyaseelan (Professor of biochemistry and molecular biology) and Dr Arunmozhiarasi Armugam (Senior Research Fellow, from the Department of biochemistry), Yong Loo Lin Schools of Medicine, National University of Singapore.



Perserta-perserta Bengkel.
Participants at the Workshop. ▲



Syarahan Prof Kandiah di Universiti Malaya.
Prof Kandiah's lecture at the University of Malaya. ▲

Anugerah Penyelidikan Kanser MAKNA 2007

Akademi ini telah menguruskan Anugerah Penyelidikan Kanser MAKNA sejak 2002. Semua permohonan dipertimbangkan oleh Jawatankuasa Penilaian Akademi yang dipengerusikan oleh Profesor Cheong Soon Kong, FASc. Selepas mesyuarat pada bulan November, Jawatankuasa bersetuju sebulat suara untuk memberikan anugerah di atas kepada penyelidik-penyelidik berikut:

1. Melanie Anil Arulsamy (Universiti Malaya)—RM40 000 untuk menjalankan kerja-kerja P&P mengenai '*Isolation and Establishment of Primary Cell Lines from Colorectal and Studies on its Biological Properties*'.

2. Dr Zulqarnain Mohamed (Universiti Malaya)—RM30 000 untuk membiayai penyelidikan mengenai '*Cloning of the Prostate Specific Membrane Antigen Gene in the Pichia Pastoris Yeast Recombinant Expression System*'.

3. Von Sze Tin (Universiti Tunku Abdul Rahman)—RM20 000 untuk membiayai kerja-kerja P&P mengenai '*Anti-Cancer Property and Mode of Action of Metal Complexes of Intercalcating Ligand and Amino Acids*'.

MAKNA Cancer Research Award 2007

The Academy has been managing the MAKNA Cancer Research Award since 2002. All applications are appraised by the Academy's Vetting Committee which is chaired by Professor Cheong Soon Keng, FASc. The Committee met on November and unanimously agreed that the following researchers be given the awards:

1. Melanie Arul Arlusamy (University of Malaya)—RM40 000 to undertake R&D work on 'Isolation and Establishment of Primary Cell Lines from Colorectal Cancer and Studies on its Biological Properties'.

2. Dr Zulqarnain Mohamed (University of Malaya)—RM30 000 to undertake research concerning 'Cloning of the Prostate Specific Membrane Antigen Gene in the Pichia Pastoris Yeast Recombinant Expression System'.

3. Von Sze Tin (Universiti Tunku Abdul Rahman)—RM20 000 for R&D on 'Anti-cancer Property and Mode of Action of Metal Complexes of Intercalating Ligand and Amino Acids'.

4. Dr Loh Hwei San (University of Nottingham Malaysia Campus)—RM30 000 untuk pembiayaan penyelidikan mengenai '*Investigation on the Bioactive Compounds of a Novel Rain Forest Plant for the Treatment of Cancers*'.

5. Khaw Wan Fei (Universiti Putra Malaysia)—RM30 000 untuk menampung perbelanjaan kerja-kerja P&P mengenai '*Acceptability of Self-administered Device for Cervical Cancer Screening among Malaysian Women in Rawang District, Selangor*'.

Dana '*Scientific Advancement Fund Allocation*' (SAGA)

Dana penyelidikan yang dikenali sebagai SAGA telah diwujudkan dalam usaha untuk membiayai penyelidikan asas para saintis yang mempunyai rekod cemerlang di dalam bidang sains. Matlamat utama dana ini adalah untuk membolehkan para saintis mara ke hadapan dan sekaligus memperoleh pengiktirafan antarabangsa atas usaha mereka dalam menjana pengetahuan dan penemuan baru.

Projek di Bawah SAGA

Pada masa ini, 89 projek berjumlah RM19.2 juta sedang dibiayai di bawah dana SAGA. Bidang penyelidikan utama yang dibiayai merangkumi bidang-bidang fisiologi/perubatan, kimia dan fizik saperti denggi, kanser, malaria, sel stem, produk bioaktif baru, nanostruktur/nanotiub baru, dan hablur cecair.

Hasil analisis melalui pemantauan dan penilaian yang dilakukan berdasarkan Laporan Kemajuan Projek Bulan ke-20 untuk 59 projek (SAGA pusingan pertama dan kedua) menunjukkan sejumlah 400 penerbitan saintifik (termasuk artikel-artikel jurnal, kertas kerja yang dikemukakan untuk persidangan/seminar/bengkel) telah dihasilkan melalui usaha penyelidikan. Daripada jumlah ini, 309 artikel diterbitkan dalam jurnal antarabangsa.

Pecahan penerbitan berdasarkan bidang penyelidikan dipaparkan dalam Rajah 1.

4. Dr Loh Hwei San (University of Nottingham Malaysia Campus)—RM30 000 for research on the 'Investigation on the Bioactive Compounds of a Novel Rain Forest Plant for the Treatment of Cancers'.

5. Khaw Wan Fei (Universiti Putra Malaysia)—RM30 000 to undertake R&D work on 'Acceptability of Self-administered Device for Cervical Cancer Screening Among Malaysian Women in Rawang District, Selangor'.

Scientific Advancement Fund Allocation (SAGA)

In a move to support excellent scientists with a proven track record in identified priority areas of fundamental sciences, a research fund was established under SAGA. The aim of such an allocation is to allow these scientists to move to the next level of achievement including gaining international recognition for knowledge generation and new discoveries.

Projects under SAGA

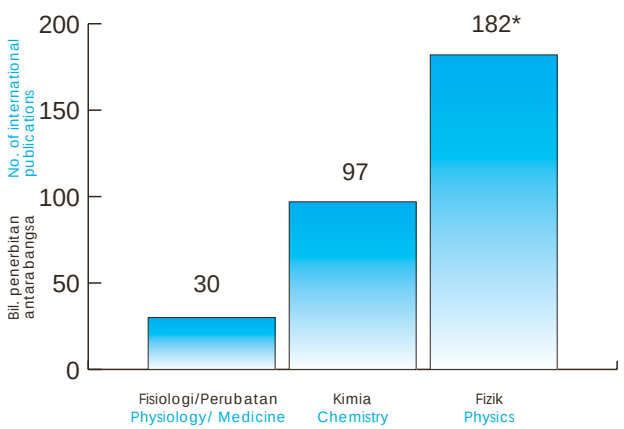
Currently, 89 projects are being funded with SAGA funds amounting to around RM19.2 million (Table 1). The major research areas funded in the fields of physiology/medicine, chemistry and physics are dengue, cancer, malaria, stem cell, novel bioactive products, novel nanostructures/nanotubes and liquid crystals.

The monitoring and evaluation exercise carried out based on the SAGA 20th Month Project Progress Reports for 59 projects (SAGA first and second rounds) showed that a total of 400 scientific publications (including journal articles, and papers produced for conference/seminar/workshops) emanated from the research. Of this total, 309 articles were in international journals.

The breakdown of publications according to fields of research is presented in Figure 1. Two patents were also attained through the SAGA funded research.

Jadual 1. Keseluruhan Pembiayaan Saga Pusingan 1-3.
Table 1. Overall Status of Funding Saga Round 1–3.

Kelompok Cluster	Permohonan diterima Applications received			Projek diluluskan Projects approved				Amaun diluluskan (RM) Amount approved (RM)			
	SAGA Pusingan Round 1	SAGA Pusingan Round 2	SAGA Pusingan Round 3	SAGA Pusingan Round 1	SAGA Pusingan Round 2	SAGA Pusingan Round 3	J umlah Total	SAGA Pusingan Round 1	SAGA Pusingan Round 2	SAGA Pusingan Round 3	Jumlah Total
Fizik Physics	49	7	105	8	3	30	41	1 430 820	538 939	3 776 200	5 745 960
Kimia Chemistry	113	50	–	15	14	–	29	3 708 177	2 575 693	–	6 283 870
Fisiologi atau Perubatan Physiology or Medicine	106	36	–	5	14	–	19	1 950 000	5 225 323	–	7 200 191
Jumlah Total	268	93	105	28	31	30	89	7 088 997	8 339 955	3 776 200	19 205 153



** Daripada 182 penerbitan saintifik, 130 merupakan sumbangan Prof Fun Hoong Kun (kajian penghabluran).*
** Out of the 182 journal papers in physics, 130 were from Prof Fun Hoong Kun (Crystallization studies).*

Rajah 1. Hasil penerbitan antarabangsa untuk Projek SAGA pusingan 1 dan 2 (Berdasarkan permohonan laporan kemajuan bulan ke-20).
Figure 1. International publication for SAGA 1st and 2nd Round Projects (Based on submission with 20th Month Progress Report)

59 projek SAGA ini (pusingan pertama dan kedua) turut melibatkan 43 jaringan kerjasama antarabangsa. Bagi aspek modal insan, bilangan penyelidikan terlibat dan ijazah sarjana dan PhD yang dijana ditunjukkan dalam Raja 2. Secara keseluruhan, 59 projek di bawah SAGA dilaporkan berjaya menghasilkan 37 sarjana dan 24 PhD. Semua projek SAGA dijangka berakhir menjelang tahun 2008.

The 59 SAGA projects (1st and 2nd Round) also involved 43 international research collaborations/linkages. On the human capital development front, the capacity building in terms of researchers involved and postgraduates trained are shown in Table 2. Overall the 59 SAGA projects are reported to have produced 37 Masters and 24 PhD degrees. All SAGA projects are expected to be completed by the end of 2008.

Jadual 2. Pembangunan modal insan untuk projek SAGA pusingan 1 dan 2 (59 projek) (Berdasarkan permohonan Laporan Kemajuan Bulan ke-20).
Table 2. Human capital development for SAGA 1st and 2nd Round Projects (59 projects) (Based on 20th Month Progress Report).

Penyelidik Research Member	Bilangan Penyelidik No. of Researchers			
	Kimia Chemistry	Fizik Physics	Fisiologi/Perubatan Physiology/Medicine	Jumlah Total
Profesor/ Professor	15	6	9	30
Profesor Madya/ Assoc. Professor	16	6	6	28
Pensyarah (PhD)/ Lecturer (PhD)	7	8	6	21
Pegawai Penyelidik/ResearchOfficers	**24**	**17**	**11**	**52**
Tahap PhD/ PhD level	1	0	5	–
Tahap Sarjana/ Masters' level	4	2	4	–
Tahap Sarjana Muda/ Undergraduate level	18	15	2	–
Lain-lain/Others	1	0	0	–
Pembantu Penyelidik / Research Assistant	**35**	**4**	**5**	**44**
Tahap Sarjana Muda / Undergraduate level	34	1	5	–
Tahap Diploma / Diploma level	1	3	0	–
Tahap PhD/PhD students	8	9	7	24
Tahap Sarjana Muda/ MSc students	18	6	13	37
Jumlah/Total	123	56	57	236

Latihan Keusahawanan Teknologi Untuk Saintis Kanan

Latihan sulung ini telah dilaksanakan sebagai langkah Kerajaan memanfaatkan sains, teknologi dan inovasi sebagai wahana utama dalam mengangkat keupayaan Negara memperoleh dan memanfaatkan ilmu dan menjalin inovasi. Untuk memenuhi hasrat para saintis yang berminat berkecimpung dalam bidang keusahawanan, Akademi telah mengendalikan kursus ini pada 15-26 Januari secara usaha sama dengan Malaysian Entrepreneurship Development Centre/Pusat Pembangunan Keusahawanan Malaysia dan Universiti Teknologi Mara.

Seramai tiga puluh enam peserta dari institut-institut penyelidikan, universiti dan agensi kerajaan telah berpeluang mendengar penyampaian mengenai keusahawanan dan pembangunan ekonomi, harta intelek, laluan ke arah pengkomersilan, sumber pembiayaan, strategi dan operasi dalam usaha niaga pertumbuhan cepat, sumber manusia dan pengurusan pengetahuan, pelan perniagaan dan isu pemasaran. Di samping lawatan ke organisasi penyelidikan dan universiti, peserta telah berkongsi pengalaman menerusi perbincangan secara berkumpulan. Lawatan-lawatan di atas telah mendedahkan peserta kepada pelbagai amalan pengkomersilan.

Training on Technology Entrepreneurship for Senior Scientists

This inaugural course was implemented as part of the Government's efforts to harness science, technology and innovation as a key driver in raising national capacity to acquire, utilize knowledge and foster innovation. The course was organized on 15–26 January by the Academy in collaboration with Malaysian Entrepreneurship Development Centre and Universiti Teknologi MARA for scientists interested in entrepreneurship.

Thirty-six participants from research institutions, universities and government agencies had the opportunity to hear presentations on entrepreneurship and economic development, intellectual property, assessing routes to commercialization, sources of financing, strategy and operations in high growth venture, human resource and knowledge management, business plan and marketing issues. They shared their experience in group assignments and visited research organizations and universities. The visits exposed participants to various commercialization practices.



Peserta seronok mendengar syarahan.
Participants enjoying the lecture. ▲



Rombongan sambil belajar ke firma farmaseutikal.
Study visit to a pharmaceutical firm in Nilai. ▲

Sains dan Masyarakat

Memandangkan masa depan negara bergantung kepada generasi muda hari ini, adalah amat penting untuk memastikan pengasuhan mereka sejak kecil bermula dengan asas sains dan teknologi dan menjadi tanggungjawab bersama bagi melengkapkan mereka dengan kebolehan untuk menghadapi cabaran dan mencapai kejayaan sebagai pemimpin hari esok. Oleh yang demikian, Akademi meneruskan misinya untuk meningkatkan kesedaran sains dan teknologi di kalangan generasi muda, dan mewujudkan minat mempelajari sains dan seterusnya meneruskan kerjaya dalam bidang sains. Untuk tujuan tersebut pelbagai program telah dijalankan oleh Akademi.

Science and Society

As the future of our nation lies with today's young generation, it is essential to nurture them from the beginning on a right foundation in science and technology and equip them to meet the challenges that are ahead and thrive as the leaders of tomorrow. Thus the Academy continues on a mission to merge science and society and generate interest to learn science and pursue a career in science among the young. Various programmes are conducted to this effect, ranging from school activities to programmes for the public.

Syarahan Memorial

Pada tanggal 20 Ogos bertempat di ASM, Akademi telah menganjur Syarahan Memorial yang pertama untuk memperingati Allahyarham Datuk Dr Syed Mohamad Alwi Alhady, FASc. Dr Syed dikenali sebagai seorang Pakar bedah yang terkemuka di Malaysia dan merupakan seorang Felo Akademi sejak 1995. Allahyarham kembali ke Ramahtullah dalam tahun 2006.

Syarahan tersebut yang berjudul 'Epidemiologi Kanser Prostat' telah disampaikan oleh Professor Jonathan I. Epstein, seorang pakar kanser prostat yang disegani di dunia. Insiden kanser prostat kian meningkat, dan dari segi diagnosis merupakan kanser yang amat mencabar. Dalam syarahan tersebut, beliau juga telah menjambatani perkembangan bidang sains dengan amalan medikal.

Syarahan ini yang dipengerusikan oleh Prof Looi Lai Meng, FASc, dihadiri oleh felo-felo Akademi, ahli keluarga Allahyarham Datuk Dr Syed Mohamad Alwi Alhady, pakar bedah, pengamal perubatan, para penyelidik dan orang ramai.

Memorial Lecture

The Academy organised the first Memorial Lecture in honour of the late Datuk Dr Syed Mohamad Alwi Alhady, FASc on 20 August at ASM. Dr Syed was a well known surgeon in Malaysia and a Fellow of the Academy since 1995. He passed away in the year 2006.

The Memorial Lecture entitled 'Epidemiology of Prostate Cancer' was delivered by Professor Jonathan I. Epstein, who is a renowned world expert on prostate cancer. The incidence of this cancer is rapidly rising, but it is an extremely challenging cancer in terms of diagnosis. He was able to bridge the field of scientific advancements and medical practice in his talks.

The lecture chaired by Prof Looi Lai Meng, FASc, was attended by Fellows of the Academy, family members of the late Datuk Dr Syed Mohamad Alwi Alhady, FASc, surgeons, medical practitioners, researchers and the public.



Prof J. I. Epstein (Kedua dari kanan) diperkenalkan kepada hadirin. ▲
Prof J. I. Epstein (Second on the right) being introduced to the audience



Sesi soal-jawab. ▲
Q&A session.

Syarahan Perdana

Pada 12 Januari bertempat di Universiti Malaya Prof Soh Aik Chin, FASc yang dilantik dalam tahun 2006, menyampaikan syarahan beliau yang bertajuk, '*What You See is Not Necessarily What You Get! (Breeding and Selecting the Ideal Oil Palm)'*. Prof Soh tergolong di antara pembiak dan ahli genetik kelapa sawit yang tersohor di arena antarabangsa. Beliau memberitahu bahawa kaedah memilih untuk menghasilkan pokok individu berdasarkan pengasingan di peringkat awal kitar pilihan merupakan cara yang tidak tepat. Masalah ini disebabkan oleh genotip yang tidak stabil, daya warisan yang rendah dan kemampuan bersaing yang tidak sekata. Sesi yang dipengerusikan oleh Dato' Seri Dr Salleh Mohd Nor, FASc ini dihadiri ramai ahli biologi, Felo Akademi, para penyelidik dan penuntut.



Soalan yang ditimbulkan salah seorang peserta syarahan.
An enquiry by a participant attending the lecture. ▲

Inaugural Lecture

Prof Soh Aik Chin, FASc appointed in 2006, delivered his Lecture on 12 January at the University of Malaya on the topic entitled 'What You See is Not Necessarily What You Get! (Breeding and Selecting the Ideal Oil Palm)'. Prof Soh is a leading oil palm breeder and geneticist of international standing. He discussed issues on yield selection in single plants by segregating populations in the early selection cycle and that it was unreliable because of unstable genotypes, low heritability and had differential plant competitive abilities. The session, chaired by Dato' Seri Dr Salleh Mohd Nor, FASc was attended by many plant biologists, Fellows of the Academy, researchers and students.



Prof Soh menyampaikan syarahan beliau.
Prof Soh delivering his lecture. ▲

Siri Syarahan Sterling

Siri Syarahan Sterling disampaikan oleh Universiti-universiti Britain di bawah naungan Kumpulan Sterling. Syarahan ini ditujukan kepada mahasiswa/wi agar teruja dan berminat dalam bidang kejuruteraan. Syarahan ini juga mempromosi kecemerlangan UK dalam bidang kejuruteraan. Royal Academy of Engineering menyokong kumpulan ini yang membiayai perbelanjaan sendiri dan mengiktirafnya sebagai sebuah perantaraan penting dalam menjaga reputasi keunggulan pendidikan kejuruteraan UK. Sempena kunjungan Kumpulan Sterling ini, Akademi dengan kerjasama KBU International University College dan Multimedia University, menganjur syarahan-syarahan berikut.

Sterling Lecture Series

The Sterling Lecture Series is delivered by the Sterling Group of British Universities to undergraduate students with the intention of exciting students about a future in engineering and promoting UK excellence in engineering. The self-financing group is recognized and supported by the Royal Academy of Engineering as a valuable means of maintaining the reputation of UK engineering education. In conjunction to the visit of the Sterling Group, the Academy organized the following lectures in collaboration with the KBU International University College and Multimedia University.

Pada 21 Mac bertempat di KBU International University College, Prof Peter Hicks dari University of Manchester telah menyampaikan syarahan bertajuk 'Silikon Mikroelektronik—Apakah Kita Telah Menghampiri Penghujung Jalan?' Syarahan beliau didahului dengan mengimbas kembali akan pencapaian industri silikon dan seterusnya menyingkap sesetengah rintangan yang dilalui dalam usaha meneruskan Undang-undang Moore untuk lima hingga sepuluh tahun akan datang. Beliau juga menegaskan kemungkinan teknologi baru mengambil alih kecemerlangan silikon.

Pada 22 Mac bertempat di Universiti Malaya, Prof Simon Biggs dari University of Leeds telah menyampaikan syarahan berjudul '*Collodial Nanotechnology: Manufacturing Smart Products from Colloids'* kepada pelajar muda. Beliau telah menjelaskan kerja-kerja terkini yang telah dilaksanakan di University of Leeds dalam bidang Colloidal Nanotechnology. Selain ini beliau juga membincangkan penghasilan kapsul fungsian pintar secara besar-besaran menggunakan emulsifikasi membran selaku teknologi asas. Kapsul ini merangkumi bahan koloidosome dan complex multilayer coatings yang mengandungi polimer peka stimulus.

Prof Peter Hicks from the University of Manchester spoke on 'Silicon Microelectronics—Are We Nearing the End of the Road?' on 21 March at KBU International University College. His presentation began with a review of the achievements of the silicon industry and later examined some of the obstacles that stand in the way of a continuation of Moore's Law beyond the next five to ten years. The possibility of new technologies that could take over from where silicon leaves off was also mentioned.

Another lecture by Prof Simon Biggs of the University of Leeds was on 'Colloidal Nanotechnology: Manufacturing Smart Products from Colloids' to young students on 22 March at the University of Malaya. He described in this talk the recent work that had been undertaken at Leeds University in the area of Colloidal Nanotechnology. He also discussed the large scale manufacturing of smart functional capsules using membrane emulsification as the baseline technology. The capsules include colloidosome materials as well as complex multilayer coatings consisting of stimulus responsive polymers.



◄ *Siri syarahan Sterling disampaikan oleh Prof Hicks*
Sterling Series Lecture delivered by Prof Peter Hicks



Prof Ramkisson dari Akademi Sains Caribbean
Prof Ramkisson of the Caribbean Academy of Sciences ▲

Syarahan Insan Tersohor

Prof Harold Ramkisson yang merupakan Pengerusi Jawatankuasa Pemandu kepada Sains dan Teknologi CARICOM, dan bekas Presiden Caribbean Acadamy of Sciences telah menyampaikan satu syarahan di Akademi Sains Malaysia pada 13 Julai. Syarahan bertajuk, '*S&T di Caribbean'* diiringi data statistik bagi membolehkan para perserta meneliti secara kritikal

Eminent Persons' Lecture

Prof Harold Ramkisson who is the Chair of CARICOM Steering Committee on Science and Technology, and former President of the Caribbean Academy of Sciences delivered a lecture on 13 July at the Academy. His lecture entitled 'S&T in the Caribbean' was presented with statistical data to enable the participants to take

akan status sains dan teknologi di Carribean dan tindakan terkini dalam menggalakkannya sebagai satu perantaraan pembangunan.

Akademi Sains Malaysia dan Inno-Biologics Sdn Bhd selaku penaja bersama telah menaja Prof Jonathan Epstein, ke 24th World Congress of Pathology and Laboratory Medicine yang diadakan pada 24 Ogos 2007 di Pusat Konvensyen Sunway, Petaling Jaya. Syarahan pleno Prof Jonathan Epstein berjudul 'Pendekatan Sistematik Mendiagnosis Kanser Prostat'. Presiden Kongres tersebut, Academician Prof Looi Lai Meng, FASc telah menjadi pengerusi syarahan tersebut. Prof Epstein merupakan Reinhard Professor of Pathology, Department of Pathology Urulogy and Oncology, John Hopkins University School of Medicine, Baltimore, Maryland, USA. Dalam syarahan yang dihadiri oleh para peserta kongres tersebut, beliau telah menjelaskan pendekatan mendiagnosis penyakit adenokarsinoma kelenjar prostat.

Syarahan Umum

Pada 18 Ogos bertempat di Akademi, ASM dengan kerjasama University of Queensland Alumni Association Malaysia telah menganjurkan satu Syarahan Umum bertajuk, '*How to stay young, healthy and cancer-free (Anti aging Therapies for women and men)'*. Syarahan ini dipengerusikan oleh Tan Sri Dato' Dr Ahmad Babjee, FASc. Pensyarah, Dr Amir Farid Isahak merupakan pakar runding perubatan, pakar sakit puan, pakar perubatan anti penuaan dan pakar bedah estetika di samping merupakan seorang guru Qigong yang disegani. Syarahan ini dihadiri oleh Felo-felo Akademi, ahli University of Queensland Alumini Association Malaysia, media dan orang ramai.

Akademi telah menganjurkan Syarahan Umum bertajuk, '*The Establishment and Implementation of R&D in Agricultural Biotechnology in Australia'* pada 22 Jun bertempat di ASM. Syarahan ini disampaikan oleh Prof Michael G.K. Jones, Pengarah, Western Australia State Agricultural Biotechnology Centre, Perth, Australia Barat. Syarahan ini telah dipengurusi oleh Prof Emeritus Dato' Mohamed Mahyuddin Mohd Dahan, FASc.

Pada 27 Mac bertempat di Auditorium, Institute for Post-graduate Studies, Universiti Malaya, ASM secara kerjasama dengan INTI Foundation, telah menganjurkan Syarahan Saintifik berjudul, '*Organ-like Cell Culture Models as Test Objects in Discovery and Pre-clinical Sciences'*. Syarahan tersebut yang disampaikan oleh Prof Wendy Purcell, Deputy Vice-Chancellor, University

a critical look at the status of Science and Technology in the Caribbean and recent efforts to promote it as a tool for development.

The Academy and Inno-Biologics Sdn Bhd co-sponsored Prof Jonathan Epstein, at the 24th World Congress of Pathology and Laboratory Medicine held on 22 August 2007 at Sunway Convention Centre, Petaling Jaya. Prof Jonathan Epstein's plenary lecture, entitled 'A Systematic Approach to Diagnosing Prostate Cancer' was chaired by Academician Prof Looi Lai Meng, FASc, President of the Congress. Prof Epstein is the Reinhard Professor of Pathology, Departments of Pathology, Urology and Oncology, John Hopkins University School of Medicine, Baltimore, Maryland, USA. In his lecture, he explained about the approach of diagnosing adenocarcinoma of the prostate. The lecture was attended by participants of the congress.

Public Lectures

The Academy organised a Public Lecture on 'How to Stay Young, Healthy and Cancer-free (Anti-Aging Therapies for Women and Men') in collaboration with the University of Queensland Alumni Association Malaysia on 18 August at the Academy. The public lecture was chaired by Tan Sri Dato' Dr Ahmad Mustaffa Babjee, FASc. The lecture was delivered by Dr Amir Farid Isahak, who is a medical consultant, gynecologist, anti-aging physician and aesthetic surgeon as well as a respected Qigong master. The talk was attended by Fellows of the Academy, members of University of Queensland Alumni Association Malaysia, media, and members of the public.

The Academy organised a Public Lecture entitled 'The Establishment and Implementation of R&D in Agricultural Biotechnology in Australia' on 22 June at the Academy. The lecture was delivered by Prof Michael G.K. Jones, the Director of Western Australia State Agricultural Biotechnology Centre, Perth, Western Australia. The lecture was chaired by Prof Emeritus Dato' Mohamed Mahyuddin Mohd Dahan, FASc.

On 27 March, ASM and INTI Foundation jointly organised a Scientific Lecture entitled 'Organ-like Cell Culture Models as Test Objects in Discovery and Pre-clinical Sciences' at the Auditorium, Institute for Post-graduate Studies, University of Malaya. The lecture delivered by Prof Wendy Purcell, Deputy Vice-Chancellor, University of Hertfordshire, United Kingdom was attended by the

of Hertfordshire, United Kingdom telah dihadiri oleh Felo-felo Akademi, Universiti, penyelidik dan penuntut.

Prof Datuk Mazlan Othman, FASc telah menyampaikan satu syarahan bertajuk '*Space: It is Value Proposition for Malaysian Security, Enterprise and Science'* pada 1 Disember bertempat di Akademi. Dalam syarahan itu, Datuk Dr Mazlan Othman menjelaskan sejarah dan perkembangan Agensi Angkasa Kebangsaan dan segala program yang diuasahakan di bawah kepimpinan beliau. Beliau juga telah memberikan senario global berhubung Program Angkasa, dan seterusnya menjelaskan mengapa semakin banyak Negara menceburi program angkasa lepas termasuk Malaysia. Dr Sheikh Muszaphar Shukor, yang hadir sama, telah berkongsi pengalaman beliau di angkasa lepas. Syarahan tersebut yang dipengurisi oleh Datuk Ir Ahmad Zaidee Laidin, FASc dihadiri oleh ramai Felo Akademi, rakan-rakan Agensi Angkasa Kebangsaan, orang awam dan wakil media.

Fellows of the Academy, universities, researchers and students.

Prof Datuk Mazlan Othman, FASc delivered a talk entitled 'Space: It is Value Proposition for Malaysian Security, Enterprise and Science' on 1 December at the Academy. In her talk, Datuk Dr Mazlan Othman explained the history and progress of the National Space Agency and it's programmes under her leadership. She also provided a global scenario on the Space Programme and explained on why more and more countries are embarking on space programmes, including Malaysia. The appearance of Dr Sheikh Muszaphar Shukor enabled the participants to share his experiences in outer space. The lecture chaired by Datuk Ir Ahmad Zaidee Laidin, FASc was attended by many Fellows of the Academy, associates of the Space Agency, public and the media.



Prof Purcell semasa syarahan 'Cell Culture'.
Prof Purcell during her lecture on 'Cell Culture'. ▲



Hadirin bersemangat mendengar syarahan.
Participants enthusiastically engrossed in the lecture. ▲

Pada 9 Oktober, Akademi telah menganjur satu syarahan mengenai,'Kewangan dan Pelaburan—Pilihan untuk Pesara'. Syarahan ini yang diadakan di Akademi dan disampaikan oleh Dr Mohinder Singh S. Sucha Singh, FASc dihadiri oleh Felo-felo ASM.

On 9 October, the Academy organized a talk on 'Finance and Investment—Options for Retirees' by Datuk Dr Mohinder Singh S. Sucha Singh, FASc. The talk held at the Academy was attended by Fellows of ASM.



Syarahan disampaikan oleh Prof Datuk Mazlan Othman, FASc.
Talk delivered by Prof Datuk Mazlan Othman, FASc. ►



Pertanyaan oleh peserta syarahan.
Enquiry by a participant during the lecture. ▲



Dr Amir Farid Isahak (kiri) dan Tan Sri Dato' Dr Ahmad Mustaffa Babjee, FASc (kanan) semasa sesi soal-jawab.
Dr Amir Farid Isahak (left) and Tan Sri Dato' Dr Ahmad Mustaffa Babjee, FASc (right) during the Q&A session. ►

Cabaran Sains Kebangsaan 2007

Sejajar dengan RMK9, pertandingan ini telah dinaiktaraf dengan menukarkan format bagi membolehkan penuntut yang menang berada setanding dengan penuntut antarabangsa. Penuntut yang mengambil bahagian disyaratkan menguasai bidang praktikal dan juga teori. Pertandingan ini kini muncul sebagai acara tahunan yang ulung. Pertukaran kepada format pertandingan menyaingi Pembangunan STI antarabangsa di samping menepati aspirasi pendidikan kita.

2007 National Science Challenge

In line with the RMK9, the competition was upgraded with a change in format to enable winning students to be at par with international students. Participating students were required to be proficient at practical and theoretical levels. The competition has now emerged as a premier annual event and changes to the format are equal to international developments in STI and our educational aspirations.

MOSTI dengan kerjasama Akademi dan Kementerian Pendidikan Malaysia telah menganjurkan Cabaran Sains Kebangsaan 2007 bagi tahun ke-20. Pada peringkat awal pertandingan sejumlah 814 sekolah telah mengambil bahagian. Sekolah-sekolah berikut telah berjaya ke peringkat pusingan akhir:

MOSTI in collaboration with the Academy and the Ministry of Education Malaysia organised the 2007 National Science Challenge for the 20th year. A total of 814 schools participated at the preliminary level of the competition. Teams from the following schools participated in the final round:

SMK Derma	Perlis	MRSM Langkawi	Kedah
SMK Convent Green Lane	Pulau Pinang	SMS Raja Tun Azlan Shah	Perak
SMK Tropicana	Selangor	SM St. John	WP K. L
SM Tinggi (P) Melaka	Melaka	SMS Seremban	N.Sembilan
SMK Taman Impian Emas	Johor	SMK Sultan Abu Bakar	Pahang
SMK Sultan Sulaiman	Terengganu	SMK Zainab (I)	Kelantan
SM Bantuan St. Joseph	Sarawak	SMS All Saints	Sabah

Pertandingan Akhir telah diserikan oleh Prof Datuk Mazlan Othman, FASc, Naib Presiden Akademi Sains Malaysia bagi pihak YB Dato' Kong Cho Ha, Timbalan Menteri Sains, Teknologi dan Inovasi.

SMK Convent Green Lane, Pulau Pinang berjaya muncul sebagai Pemenang Cabaran Sains Kebangsaan 2007. Hadiah Utama termasuklah Tropi Cabaran Perdana Menteri, lawatan sambil belajar ke Sweden (untuk menyaksikan upacara Penganugerahan Hadiah Nobel) dan lawatan ke Denmark, cek bernilai RM2000 untuk sekolah berkenaan dan hadiah cenderamata.

The Grand Final was graced by Prof Datuk Mazlan Othman, FASc, Vice-President of the Academy of Sciences Malaysia on behalf of Dato' Kong Cho Ha, Hon. Deputy Minister of Science, Technology and Innovation.

For 2007, SMK Convent Green Lane was announced as the Champion of the 2007 National Science Challenge. The Grand Prize included the 'Prime Minister's Challenge Trophy', a study visit to Sweden and Denmark, a cheque amounting to RM2000 for the school, souvenirs and a trip to Sweden to witness the Nobel Prize Giving ceremony.



Dato' Dr Mohinder Singh, FASc mengumumkan juara Cabaran Sains Kebangsaan 2007.
Dato' Dr Mohinder Singh, FASc announcing the winners of the 2007 National Science Challange.▲



Pemenang menerima anugrah daripada Prof Datuk Mazlan, FASc.
The Champions of the 2007 National Science Challenge reciving their awards from Prof Datuk Mazlan, FASc.▲



SMK Convent Green Lane dengan trofi kemenangan dan cek.
SMK Convent Green Lane with the winning trophy and cheque. ▲



Para pemenang Cabaran Sains Kebangsan semasa lawatan sambil belajar ke Sweden dan Denmark.
The winners of the National Science Challenge on their study tour to Sweden and Denmark. ▲

Program Kembali ke Sekolah

Akademi telah menganjur beberapa program di sekolah-sekolah rendah dan menengah dengan jayanya. Program ini bertujuan menimba pengalaman luas felo ASM untuk merangsang murid-murid sekolah menceburkan diri dalam kerjajaya dalam bidang sains. Sepanjang tahun ini aktiviti-aktiviti berikut berjaya dijalankan:

(i) Academician Dr Yong Hoi Sen, FASc menyampaikan syarahan bertajuk 'Fenomena Biologi yang Menakjubkan' pada 17 April di SMK Batu Lintang, Kuching, Sarawak.

(ii) Prof Khalijah Mohd Salleh, FASc memberi syarahan berjudul 'Pembangunan Sains dan Teknologi di Malaysia' pada 25 April di MRSM, Serting.

(iii) Prof Madya Ewe Hong Tat dari Universiti Malaya memperdalam pengetahuan penuntut mengenai 'Eksplorasi ke Antartika' pada 25 April di MRSM, Serting.

(iv) Prof Madya Husin dari Universiti Malaya, menyampaikan hujah bertajuk 'Eksplorasi ke Antartika' pada 26 Mei di Pusat Sains Negara.

(v) Prof Mashor Mansor dari Universiti Sains Malaysia berucap mengenai '*The Comparative Observation*

Back to School Programme

The Academy successfully organised several programmes both at primary and secondary schools. The programme is aimed at harnessing the vast experience of ASM Fellows to motivate school children to embark on science-based careers. The following was conducted this year:

(i) Academician Dr Yong Hoi Sen, FASc talked on 'Fascinating Biological Phenomena' on 17 April at SMK Batu Lintang, Kuching, Sarawak.

(ii) Prof Khalijah Mohd Salleh, FASc lectured on 'Science and Technology Development in Malaysia' on 25 April at MRSM, Serting.

(iii) Associate Prof Ewe Hong Tat of the University of Malaya enlightened the students on 'The exploration of the Antarctica' on 25 April at MRSM, Serting.

(iv) Associate Prof Azhar Husin of the University of Malaya talked on 'The Exploration of the Antarctica' on 26 May at the National Science Centre.

(v) Prof Mashor Mansor of Universiti Sains Malaysia spoke on 'The Comparative Observation on Biodiversity

on Biodiversity of Peninsular Malaysia and Antarctica' pada 28 Mei di Pusat Sains Negara.

(vi) Emeritus Prof Chin Hoong Fong, FASc menyampaikan ucapan mengenai '*Nutrisi dan Kesihatan'* pada 29 Mei Pusat Sains Negara.

(vii) Prof Mohd Ismail Noor, FASc menyampaikan perbincangan mengenai '*Conservation and Utilization of Plant Genetic Resources for Future Generations'* pada 30 Mei di Pusat Sains Negara.

(viii) Academician Datuk Seri Dr Salleh Mohd Nor, FASc menyampaikan ucapan mengenai '*Money Does Grow on Trees'* pada 2 Julai di Maktab Tentera DiRaja, Sungai Besi.

(ix) Prof Datuk Mazlan Othman, FASc memperdalam pengetahuan penuntut mengenai '*Space Science Programme in Malaysia'* pada 26 Julai di Kolej Tunku Kurshiah, Seremban.

of Peninsular Malaysia and Antarctica' on 28 May at the National Science Centre.

(vi) Emeritus Prof Chin Hoong Fong, FASc spoke on the subject entitled 'Nutrition and Health' on 29 May at the National Science Centre.

(vii) Prof Mohd Ismail Noor, FASc discussed on 'Conservation and Utilization of Plant Genetic Resources for Future Generations' on 30 May at the National Science Centre.

(viii) Academician Datuk Seri Dr Salleh Mohd Nor, FASc talked on 'Money Does Grow on Trees' on 2 July at Maktab Tentera DiRaja, Sungai Besi

(ix) Prof Datuk Mazlan Othman, FASc enlightened the students on 'Space Science Programme in Malaysia' on 26 July at Kolej Tunku Kurshiah, Seremban.



Sesi soal-jawab dengan Prof Madya Ewe Hong Tat.
Q&A session during the lecture by Assoc. Prof Ewe Hong Tat. ▲



Pelajar menyertai sesi perbincangan.
Students actively participating in the discussion. ▲

Jaringan Kerjasama Antarabangsa

Dalam era K-ekonomi, adalah penting bagi Akademi untuk meneruskan dan memperkukuhkan jaringan dengan organisasi sains antarabangsa. Jaringan tersebut telah meningkatkan peluang untuk perkongsian pengetahuan, pengalaman serta keupayaan sains dan teknologi untuk membolehkan negara bersaing seiring dengan pembangunan sains dan teknologi dunia. Selain daripada menandatangani Memorandum Persefahaman dengan Akademi Sains lain, Akademi Sains Malaysia juga menyertai mesyuarat dan aktiviti-aktiviti yang dianjurkan oleh organisasi S&T antarabangsa.

International Collaboration

In the era of the knowledge economy, it is vital for the Academy to establish strong networks with international science organisations and sister Academies. These networks have increased opportunities for the sharing of knowledge, expertise as well as scientific and technological capabilities in order for the nation to remain competent in the context of global science and technology advancement. Apart from forming, signing MOUs with international SET organisations and sister Academies, the Academy co-organises conferences or meetings of international S&T bodies.

Program Penyelidikan Antartika Malaysia (MARP)

Dalam tahun 2007 MARP telah mengendalikan sepuluh projek penyelidikan sains biologi dan tujuh sains fizik. MARP juga telah meningkatkan keupayaan sumber manusianya. Dalam tahun itu, dua daripada calon PhD MARP berjaya memperoleh ijazah manakala dua calon lain pula memulakan pengajian PhD. Dewasa ini terdapat lapan calon PhD yang sedang menjalankan tugas dalam pelbagai bidang penyelidikan saintifik di Antartika. Selain itu, terdapat juga 29 calon MSc dan 11 mahasiswa di bawah program penyelidikan MARP.

Tujuh belas penyelidik terlibat sama dalam ekspedisi ke Antartik dan Artik. Penglibatan ini merupakan sebahagian daripada projek penyelidikan mereka untuk mengambil sampel dan data bersama pasukan dari New Zealand, Britain, Ecuador, Afrika Selatan, Jepun dan Chile. Penyelidikan Malaysia telah mempertingkat penglibatan Malaysia dalam usaha Penyelidikan Sistem Bumi Antarabangsa terutama mengenai modeling berangka, perubahan iklim dan pemuliharaan persekitaran. Penglibatan ini secara tidak langsung telah memperkukuh hak kita dalam mempromosikan Antartika sebagai khazanah manusia sejagat di PBB dan forum antarabangsa lain. Semasa Seminar Antarabangsa Malaysia Ketiga Terhadap Antartika sedang berjalan pada bulan Mac 2007, satu Memorandum Persefahaman telah ditandatangani antara Akademi Sains Malaysia, bagi pihak MARP, dengan National Institute of Polar Research, Japan and Chilean Antarctic Institute.

Pada bulan Mac 2007, MARP dan Universiti Malaysia Sabah telah menaja secara bersama 'Seminar Antarabangsa Malaysia terhadap Antartika ke-3'. Seminar ini telah menyimpulkan secara ringkas pemahaman semasa kita selain memahami kepincangan pengetahuan kita di arena antarabangsa. Saintis Malaysia juga telah menghadiri simposium dan mesyuarat di Jepun, India, Rusia, dan Equador. Dua saintis Indonesia telah mengunjungi Pusat MARP bagi membincangkan usaha membangunkan Program Penyelidikan Antartika Indonesia.

Program Jangkauan Luar MARP

Satu Program Jangkauan Luar telah diadakan pada 20 Mac bertempat di Universiti Malaysia Sabah untuk

Malaysian Antarctica Research Programme (MARP)

Ten biological and seven physical science research projects were undertaken under MARP in 2007. MARP has also increased its capacity in the area of human resource. Two of MARP's PhD candidates have graduated and two have started their PhD in 2007. Currently, eight PhD candidates are working on various fields of scientific research on Antarctica. There are also 29 MSc candidates and 11 undergraduates under the MARP research program.

Seventeen researchers participated in Antarctic and Arctic expeditions as part of their research projects to collect samples and data with teams from New Zealand, Britain, Ecuador, South Africa, Japan and Chile. Malaysian scientists increased Malaysian involvement in International Earth System Research efforts especially on numerical modeling, climate change and environmental conservation and indirectly strengthen our stake in promoting Antarctica as a common heritage for all mankind in UN and other international forum. A Memorandum of Understanding was signed between the Academy of Sciences Malaysia for MARP and National Institute of Polar Research, Japan and Chilean Antarctic Institute during the Third Malaysian International Seminar on Antarctica in March 2007.

In March 2007, MARP and University Malaysia Sabah jointly organized the 3rd Malaysian International Seminar on Antarctica. It summarized our current understanding and considered the gaps in our knowledge at the international level. Malaysian scientists also attended related symposiums and meetings in Japan, India, Russia, and Equador. Two Indonesians scientists visited the MARP Center to discuss about setting up the Indonesian Antarctic Research Programme.

MARP Outreach Programme

An outreach programme was held on 20 March, at Universiti Malaysia Sabah for students and the public, to

penuntut dan orang awam, untuk mempromosikan MARP selain memberikannya publisiti. Kerja-kerja P&P dan pengalaman ekspedisi saintifik juga telah dipamerkan. Penuntut telah diberitahu akan kepentingan dan perkaitan kawasan kutub dengan kawasan tropika, dan digalakkan mempelajari sains dan hadapai cabaran persekitaran ekstrim di Antartika. Para saintis MARP juga terlibat dalam syarahan motivasi kepada penuntut dan guru sekolah rendah, menengah dan matrikulasi. Syarahan-syarahan ini telah diadakan di Petrosains, Pusat Sains Negara dan di beberapa sekolah di Pulau Pinang.

Seminar Antartika Antarabangsa Malaysia (MISA) Majlis Sains Antarabangsa (ICSU) Jawatankuasa Saintifik Forum Penyelidikan Antartika

Semasa MISA, yang dianjur di Kota Kinabalu (21-23 Mac), para saintis dan perumus polisi dari beberapa Negara telah berbincang mengenai penemuan penyelidikan mereka di kawasan Kutub (polar) dan telah berkongsi idea mencari jalan untuk memperbaiki pengurusan pertubuhan ini. Seminar itu bertemakan 'Dari Tropika ke Kutub', dan sebanyak 27 oral dan 30 poster telah dipersembahkan. Semasa acara pembukaan, satu Memorandum Persefahaman telah di capai di antara ASM (diwakili oleh Dato' Seri Dr Salleh Mohd Nor, FASc), dengan Instituto Antarctico Chileno yang membuka jalan kerjasama penyelidikan dalam bidang sains biologi, program pertukaran penempatan pelajar dan jaringan. Menerusi sembilan kertas kerja yang dibentangkan Jawatankuasa Saintifik untuk Penyelidikan Antartika-ICSU membincangkan implikasi peningkatan suhu di kawasan kutub. Satu perbincangan saintifik antara pakar-pakar dari Forum Asia terhadap Sains Kutub, Yayasan Kutub Antarabangsa, ISCU dan Jawatankuasa Saintifik Penyelidikan Antartika. Di forum tersebut, MARP telah juga menyampaikan satu 'pelawaan untuk meneliti' di ATCM akan datang bertempat di Delhi yang dijadualkan pada bulan April 2007 dan untuk IPY 2007-2008, lebih banyak peluang kerjasama penyelidikan telah ditawarkan kepada para penyelidik kita berhubung sains Artik dan Antartik.

promote and publicise MARP. R&D work and scientific expedition experiences were also exhibited. Students were also exposed to the importance and relevance of the polar regions to the tropics, and encouraged to study science and face the challenges of the extreme environment of the Antarctic. MARP's researchers were also involved in motivational talks to students and teachers at primary, secondary and matriculation level. The talks were held in Petrosains, National Science Center and some schools in Penang.

Malaysian International Seminar on Antarctica (MISA) and International Council for Science (ICSU) Scientific Committee for Antarctic Research Forum

Scientists and policy makers from various countries deliberated on their research findings in the polar regions and shared ideas on how to improve the management of it, during MISA which was held in Kota Kinabalu (21–23 March). The theme of the Seminar was 'From the Tropics to the Poles', and 27 oral reports and 30 posters were presented. During the opening ceremony, a MoU between ASM (represented by Dato' Seri Dr Salleh Mohd Nor FASc), and Instituto Antarctico Chileno was also signed for research collaboration in biological sciences, student exchange, attachment programmes and networking. The ICSU-Scientific Committee for Antarctic Research Forum discussed the implications of rapid warming in the polar regions in nine paper presentations. A scientific discussion also transpired between experts from the Asian Forum on Polar Sciences, International Polar Foundation, ICSU and Scientific Committee for Antarctic Research. At the forum, MARP was also invited to observe at the next ATCM in Delhi which was to be held in April 2007 and for IPY 2007–2008, more opportunities for research collaboration were also offered to our researchers in Arctic and Antarctic sciences.



◄ *Pemyelidik MARP mengumpul sampel ais laut.*
MARP scientist collecting sea ice samples.





Peyelidik meneliti sampel yang dikumpul.
A researcher examining collected samples. ▲

◄ *Mengambil sampel vegetasi Antartika.*
Sampling of Antartic vegitation.

Pusat Kerjasama STI Selatan–Selatan UNESCO Antarabangsa, Kuala Lumpur di Bawah Naungan UNESCO

Pada bulan November, Kerajaan Malaysia meluluskan penubuhan Pusat Kerjasama STI Selatan–Selatan Antarabangsa di Kuala Lumpur di bawah naungan UNESCO. MOSTI akan bertanggungjawab terhadap Pusat Antarabangsa ini. ASM disyorkan menaja Pusat ini di peringkat awal pembangunannya (iaitu lima tahun pertama). Pusat ini akan menjana dan mengimplentasi program dan aktivitinya yang tersendiri.

International Centre for South-South Co-operation in STI, in Kuala Lumpur under the Auspices of UNESCO

The Government of Malaysia, in November, approved the establishment of the International Centre for South-South Co-operation in Science, Technology and Innovation in Kuala Lumpur under the auspices of UNESCO. MOSTI will be responsible for the International Centre which was proposed to be hosted by ASM in its initial phase of development (i.e the first five years). The Centre will create and implement its own programmes and activities.

Pusat ini akan bertindak sebagai satu pentas antarabangsa untuk Kerjasama Selatan-Selatan dalam bidang STI dan menggunakan jaringan G7 campur China dan Pertubuhan Islam Antarabangsa. Menerusi konsultasi, matlamat keseluruhan Pusat telah dikenal pasti iaitu untuk meningkatkan keupayaan pengurusan STI di seluruh negara-negara membangun.

Keutamaan Pusat ini termasuklah latihan jangka pendek dan panjang untuk para saintis, pengurus pusat penyelidikan/institusi dan perumus polisi sains; bengkel; pertukaran lawatan oleh saintis; penyelidikan usaha sama dan projek pembangunan; dan jaringan pembangunan ekonomi berasaskan pengetahuan. Program jangka pendek akan menjurus kepada kawasan-kawsasan berkepentingan khusus mengikut keperluan dan keutamaan yang dikenal pasti.

Persidangan Majlis Sains Asia Ketujuh

Persidangan ini telah diadakan di Okinawa, Jepun dengan tema, 'Tenaga dan Persekitaran', dari 14–16 Jun. Sebelas negara-negara ahli dengan lima pemerhati dari pertubuhan antarabangsa, serantau dan kebangsaan telah menghadiri dua Perhimpunan Agung dan Mesyuarat Lembaga, tiga sesi bengkel selari dan Majlis Sains Asia (SCA)/Persatuan Sains Pasifik (PSA) Joint Symposium. Malaysia telah diwakili oleh Prof Nordin Hasan, FASc dan Prof Mazlin Mokhtar of the Institute for Environment and Development, UKM. Prof Mazlin juga telah menyampaikan satu kertas kerja bertajuk '*Sustainability Governance: A Study on Science-Governance Symbioses*', satu Projek Bersama SCA yang kini sedang berjalan. Satu Panel Perbincangan juga telah diadakan mengenai: 'Tenaga dan Persekitaran'; 'Pendidikan dan Persekitaran'; dan 'Sumber Air'.

Semasa persidangan, SCA telah berjanji akan meneruskan peranannya dalam jaringan di Asia di mana saintis dari rantau ini boleh membuat laporan dan berbincang mengenai penemuan penyelidikan mereka yang mungkin mempunyai potensi untuk menyumbang ke arah pembangunan lestari di Asia. Ini juga akan menjadikan SCA lebih releven sebagai kelompok saintis serantau pada masa akan datang dan umumnya untuk pembangunan sains di Asia.

The Centre will act as an international platform for South-South co-operation in STI and make use of the network of the G77 plus China and the Organization of the Islamic Conference. Consultations have identified that the overall goal of the proposed Centre would be to increase the capacity for management of STI throughout developing countries.

The priorities of the Centre would include short- and medium-term training for scientists, managers of research centres/institutes and science policy makers; workshops; exchange visits by scientists; collaborative research and development projects; and networking in knowledge-based economic development. Short-term programmes will cater to specific areas of interest in keeping with the needs and priorities identified.

Seventh Science Council of Asia Conference

The above Conference was held in Okinawa, Japan with the theme 'Energy and Environment', from 14–16 June. Eleven member countries with five observers from international, regional and national organisations attended the two General Assemblies and Board Meetings, three parallel workshop sessions as well as the Science Council of Asia (SCA)/ Pacific Science Association (PSA) Joint Symposium. Malaysia was represented by Prof Mohd Nordin Hasan, FASc and Prof Mazlin Mokhtar of the Institute for Environment and Development, UKM. The latter also presented a paper entitled 'Sustainability Governance: A Study on Science-Governance Symbioses', a SCA Joint Project which is currently in progress. A Panel Discussion was also held on: 'Energy and Environment'; 'Education and Environment'; and 'Water Resources'.

At the Conference, SCA pledged to continue the networking role in Asia where scientists from the region could report and discuss their research findings that would have the potential to make significant contributions towards the sustainability of development in Asia. This would also make the SCA more relevant as a regional grouping of scientists in future and for the development of the sciences in Asia in general.

Program Air Panel Antara Akademi (IAP)

Satu Mesyuarat Penilaian dan Perancangan Strategik telah diadakan di Trieste, Itali dari 29–31 Mei. Mesyuarat ini dihadiri oleh 14 peserta dari akademi-akademi yang menjadi penganjur dan jaringan serantau. Mesyuarat ini yang dianggap amat berhasil kerana penglibatan baik para hadirin. Sebanyak 60 buah akademi telah bersetuju memberikan sokongan terhadap Program Air IAP ini. ASM diwakili oleh Tan Sri Shahrizaila, Pengerusi Kumpulan Bengkel Air ASM/ASM Workshop Group on Water.

Kumpulan Kerja ASM yang terbukti dan berperanan menyelenggara Program Air IAP di peringkat kebangsaan telah menumpukan fokusnya terhadap dua bidang iaitu Eutrofikasi Tasik dan Pengurusan Air dalam Tanah. Kumpulan ini terlibat dalam Bengkel IAP dalam memacu agenda berhubung Eutrofikasi dan telah terus bekerja dengan Institut Penyelidikan Hidraulik Kebangsaan Malaysia (NAHRIM). Tujuh cadangan projek baru telah dikemukakan untuk permohonan pembiayaan dalam tahun 2008. Melalui Kumpulan Kerjanya, ASM akan memantau segala pembangunan secara rapi dengan kesedian untuk menceburkan diri jika diperlukan.

Kolokium Pengurusan Tasik dan Takungan Air di Malaysia

Kolokium kelolaan bersama dengan Institut Penyelidikan Hidraulik Kebangsaan Malaysia (NAHRIM) ini telah dijalankan di Putrajaya pada 2-3 Ogos untuk menyuntik kesedaran yang lebih mendalam terhadap status dan isu berkaitan tasik dan takungan air di Malaysia.

Seramai 120 peserta mendapat manfaat dari sumbangan pensyarah antarabangsa semasa ucaptama oleh Prof Maciej Zalewski, Pengarah European Regional Centre for Ecohydrology, Lodz, Poland: Prof Eduardo Mario Mendiondo, University of Sao Paulo, Brazil, dan Prof Masahisa Nakamura, Pengerusi, International Lake Environment Committee, berpusat di Jepun. Mereka menyampaikan syarahan mengenai isu-isu berhubung tasik dan takungan air di Malaysia.

Kolokium ini bermula dengan pembentangan kertas kerja ulung secara bersama oleh NAHRIM dan UTM yang

Inter-Academy Panel (IAP) Water Programme

An Evaluation and Strategic Planning Meeting was held in Trieste, Italy from 29–31 May which was attended by some 14 participants from the host academies and regional networks. The meeting was fruitful with good participation by all present. Some 60 Academies have confirmed support to the IAP Water Programme. ASM was represented by Tan Sri Shahrizaila, Chairman of ASM Workshop Group on Water.

ASM's established Working Group to oversee the IAP Water Programme at national level has kept its focus on two areas, namely Eutrohication of Lakes and Ground Water Management. It has participated in relevant IAP workshops in carrying the agenda forward on Eutrohication and has continued to work with the National Hydraulic Research Institute of Malaysia. Regarding the continuing IAP Water Programme seven new project proposals were put up for funding in the year 2008. ASM through its Working Group would monitor developments closely with a view of active participation where relevant.

Colloquium on Management of Lakes and Reservoirs in Malaysia

The colloquium held on 2–3 August at Putrajaya was jointly organised with the National Hydraulic Research Institute of Malaysia (NAHRIM) to create and foster greater awareness on the status and issues pertaining to lakes and reservoirs in Malaysia.

Some 120 participants benefited from the participation of international speakers during the keynote addresses by Prof Maciej Zalewski, Director, European Regional Centre for Ecohydrology, Lodz, Poland ; Prof Eduardo Mario Mendiondo, University of Sao Paulo, Brazil, and Prof Masahisa Nakamura, Chairman, International Lake Environment Committee, based in Japan. They spoke on global trends and prospects in sound lake management and research.

The Colloquium commenced with a lead paper presented jointly by NAHRIM and UTM highlighting the

menonjolkan penemuan yang dibuat menerusi kajian Eutrofikasi tasik dalam tahun 2004/2005. Dalam kolokium ini juga membentangkan lapan kajian kes melibatkan tasik dan takungan air tertentu dengan menumpukan perhatian akan status tasik dilihat dari beberapa sudut, isu dan masalah, dan langkah-langkah yang diambil untuk mengatasinya. Semasa perbincangan panel, topik mengenai penguasaan (governance), pengurusan tasik, penyelidikan, penglibatan pihak berkepentingan, pembangunan keupayaan, dan pengurusan maklumat tasik dianalasis secara aktif. Kolokium ini telah menyediakan banyak maklumat berguna dalam merancang tindakan masa depan dan program ke arah pengurusan tasik dan takungan air dalam Negara secara baik; usaha lanjutan mengenai jaringan dan usaha kerjasama dengan pakar; dan untuk membangunkan kerangka awal dalam membangunkan pelan tindakan terperinci yang akhirnya membolehkan pembentukan formula pelan bersepadu Kebangsaan untuk tindakan komprehensif/menyeluruh.

Satu persidangan meja bulat mengenai persoalan penyelidikan dan pengurusan takungan air juga telah dijalankan di NAHRIM. Pada hari berikutnya satu kursus pengenalan bertajuk '*Eco-hydrology as a framework for Integrated Water/Land Management'* telah dikendali oleh Prof Zalewski. Beliau telah memberi penekanan pada prinsip-prinsip Hidrologi, Ekologi dan Ekoteknologi.

Jawatankuasa Penyelaras Program Geosains Asia Timur dan Asia Tenggara (CCOP)

Datuk Fateh Chand, FASc telah mewakili Akademi ke Sesi Tahunan CCOP ke-44 bertempat di Sibu, Filipina (21–26 Oktober), bersama perwakilan negara-negara lain. Semasa menyampaikan ucaptama, Laporan Kemajuan CCOP permohonan-permohonan termasuk bantuan lanjut dalam bentuk kepakaran teknikal, kewangan dan sumber manusia (seminar, bengkel dll.) telah dikemukakan.

Semasa kajian semula Program Kerja CCOP, telah diberitahu bahawa agensi pembiayaan kini lebih kritikal dalam menghulur bantuan. Projek-projek berkaitan perlindungan persekitaran dan perubahan iklim diberi keutamaan. Malaysia telah mencadangkan satu projek mengenai gas hidrat yang akan dikendalikan dalam

findings of the Eutrophication of Lakes Study undertaken in 2004/2005. Eight case studies on specific lakes and reservoirs, focussing on the status of the lakes from various standpoints, highlighting the issues and problems, and efforts made to overcome them were also presented, and finally at the Panel Discussion, topics on governance, lake management, research, stakeholder participation, capacity building, and lake information management were actively analysed. The colloquium provided useful information in planning further actions and programmes towards sound management of lakes and reservoirs in the country; further networking and collaboration with experts; and the initial framework to develop detailed plans of action which would eventually lead to the formulation of a national integrated plan for comprehensive action.

A Round-table Discussion on matters related to research and management of lakes and reservoirs was also held at NAHRIM, and on the following day an introductory training course on 'Eco-hydrology as a Framework for Integrated Water/Land Management' was conducted by Prof Zalewski which centered on hydrological, ecological and eco-technological principles.

Co-ordinating Committee for Geoscience Programmes in East and Southeast Asia (CCOP)

The Academy was represented at the 44th Annual Session of CCOP held in Cebu, the Philippines (21–26 October) by Datuk Fateh Chand FASc, along with other representatives of member countries. At the keynote address, the Progress Report of CCOP was presented including requests for further assistance in the form of technical expertise, finance and human resourses (seminar, workshops etc.).

During the review of the CCOP Work Programme, it was stressed that funding agencies were now more critical in providing aid, and projects related to the protection of the environment and climate change stood a better chance for approval. Malaysia had proposed a project on gas hydrates to be carried out

dua fasa: Fasa 1, mengenal pasti, memeta dan menilai potensi gas hidrat; dan Fasa 2, mengenal pasti teknologi yang diperlukan dalam kerja memperoleh gas-gas ini sebagai sumber tenaga.

Dari 24–25 Oktober, satu persidangan mengenai, 'Awareness and Co-operation in Geoscience for Safer, Healthier and Wealthier Communities' dijalankan. Dua saintis Malaysia telah membentangkan dua kertas kerja.

Risiko Gempa bumi dan tsunami iaitu satu projek kendalian Malaysia telah dibincang dan maklumbalas mengenai kajian ini akan dijalankan tidak lama lagi. Malaysia telah diminta berhubung Laporan CCOP mengenai 'Langkah-langkah Menggurangkan Risiko Tsunami, Fasa 1 dan 2'—dan Sekretariat Teknikal CCOP pula dinasihatkan memasukkan Malaysia, kerana kajian tersebut dipandang releven, terutama di Sabah dan Sarawak.,

Persidangan ini banyak memberi maklumat kerana telah membuka peluang mengetahui kajian semasa, selain mengenali organisasi dan negara-negara yang terlibat– justeru membuka laluan untuk interaksi dan kemungkinan menjalin projek dua hala. Banyak program CCOP, terutama mengenai pengurusan risiko tsunami dan gempa bumi, tanah runtuh dan tanah mendap, kawasan pantai yang amat berguna untuk laporan Penasihat ASM kepada Kerajaan. Memandangkan Filipina merupakan Negara yang terpaling kerap dilanda bencana alam, maka Majlis Keselamatan Negara disarankan membuat penelitian terhadap sistem menangani bencana alam yang diamalkan oleh pihak Filipina. Sekretariat ASM juga telah disaran membuat permohonan secara bertulis kepada Perwakilan Tetap CCOP supaya memasukkan Malaysia dalam Fasa 2 Kajian Mitigasi Risiko Tsunami yang akan dijalankan oleh Norwegian Geotechnical Institute dalam tahun 2008.

Bengkel Panel Perubatan Antara Akademi (IAMP) untuk Penyakit Baru

IAMP merupakan satu jaringan akademi-akademi sains dan perubatan global yang komited dalam mempertingkat tahap kesihatan di seluruh dunia. Mesyuarat Agung IAMP bulan April 2006 telah meluluskan tujuh program. Akademi yang mewakili Malaysia

in two phases: Phase 1, on identifying, mapping and assessing the potential of gas hydrates; and the other, on the technology required to tap such gases as a source for energy supply.

A conference on 'Awareness and Co-operation in Geosciences for Safer, Healthier and Wealthier Communities' was also held from 24–25 October, where two papers from Malaysian scientists were presented.

Malaysia's project on earthquake and tsunami risk was dicussed and feedback on the study is expected soon. The CCOP report on 'Tsunami Risk Reduction Measures, Phase I and II'—and the Technical Secretariate of CCOP was requested to include Malaysia, as the study was of relevance, especially in Sabah and Sarawak.

The conference was informative for it provided an opportunity to know the studies being undertaken, and the organisations and the countries involved—thus forging an opportunity to interact and consider bilateral projects. Many work programmes of CCOP, especially on tsunami and earthquake risks, landslides and subsidence, and coastal zone management would be useful for ASM's Advisory Report to the Government. The Philippines is probably the country most affected by natural hazards, thus Majlis Keselamatan Negara is recommended to study the Philippines' System in natural hazard mitigation system. The ASM Secretariate was also recommended to write to the Permanent Representative of CCOP to include Malaysia in the Phase II of the study on Tsunami Risk Mitigation which would be conducted by the Norwegian Geotechnical Institute in 2008.

Workshop on Emerging Infectious Diseases of the Inter Academy Medical Panel (IAMP)

IAMP is a global network of academies of science and medicine, committed to improving health worldwide. Out of the seven Programmes endorsed by the General Assembly of IAMP on April 2006, Malaysia, represented by the Academy had indicated a particular interest to

telah menjelaskan minat terperinci untuk terlibat sama dalam (1) Pengawalan Penyakit sedang Menular, dan (2) Kualiti Khidmat Kesihatan dalam Perspektif Global. Bengkel ini yang dijalankan di Shanghai (11–12 Jun), menumpukan fokus kepada tiga aspek berhubung penyakit berjangkit, iaitu Kesihatan Awam, Vaksinasi dan Terapi anti-microbial. Prof L.M. Looi, FASc telah dijemput membentangkan kertas kerja mengenai, '*Lesson from Nipah Virus Outbreak in Malaysia*'. Beberapa usul mengenai cara menangani ancaman penyakit berjangkit baru dibuat berkaitan (1) Keperluan menggunakan teknologi baru dalam mendiagnos dan mengawas penyakit-penyakit baru, (2) Vaksinasi dan (3) Antibiotik dan Rintangan Antiviral.

Mesyuarat Tahunan Lembaga Majlis Antara Akademi (IAC) 2007

Mesyuarat ini yang diadakan di Amsterdam pada 29–31 Januari, telah dihadiri oleh Setiausaha Agung ASM (beliau menghadiri mesyuarat ini selaku wakil Ahli Lembaga IAC). Perhatian telah diambil mengenai draf peryataan bersama oleh Akademi-akademi G8+5 yang dibentangkan di Persidangan Kemuncak G8 (telah diadakan pada bulan Jun di Jerman), dan penerbitan dalam *Women for Science* dan laporan *Toward a Sustainable Energy Future*. Mesyuarat ini juga telah menerima masuk ahli lembaga ex-officio baru yang merangkumi wakil-wakil yang mengwakili Panel Antara Akademi, Panel Perubatan Antara Akademi, dan Majlis Akademi Kejuruteraan dan Sains Teknologi Antarabangsa. Pembentukan satu kumpulan perancang yang diselia oleh IAMP juga telah diberi persetujuan. Kumpulan ini ditugaskan untuk mengariskan skop, pelan kerja dan punca pembiayaan kajian IAC-IAMP baru mengenai langkah-langkah mempertingkat pengawasan global terhadap penyakit zoonotik, seperti selesema burung dan SARS.

Mengenai soal masa depan IAC, Lembaga telah bersetuju akan perluya rancangan 10 tahun. Dalam hal ini Lembaga bersetuju agar IAC memulakan proses perbincangan untuk mengubal skop ideal mengenai kajian dan program IAC dan dan seterusnya membangunkan satu pelan strategik pada tahun 2007 untuk merealiasasikan matlamat tersebut.

participate in (1) Control of Emerging Infections, and (2) Health Care Quality in a Global Perspective. The Workshop held in Shanghai (11–12 June), focussed on three aspects of emerging infectious diseases, namely Public Health, Vaccination and Anti-microbial Therapies. Prof L.M. Looi FASc was invited to present a paper entitled 'Lessons from the Nipah Virus Outbreak in Malaysia'. Some recommendations on combating the threat of new emerging infections were made concerning (1) The need to implement new technologies for diagnosis and surveillance of novel infections, (2) Vaccinations, and (3) Antibiotic and Antiviral Resistance.

2007 Annual Inter Academy Council (IAC) Board Meeting

The Meeting, held in Amsterdam on 29–31 January, was represented by the ASM Secretary General (who attended the meeting as an IAC Board Member). Note was taken of the draft joint-statements by G8+5 Academies to the G8 Summit (held in June, Germany), and the publication on *Women for Science* and the report *Toward a Sustainable Energy Future*. The meeting also approved the new ex-officio board members who included representatives from the Inter-Academy Panel, Inter-Academy Medical Panel, and the International Council of Academies of Engineering and Technological Sciences. The convening of an organizing group in consultation with IAMP to consider a scope, plan of work, and potential funding of a new IAC-IAMP study on improving global surveillance for emerging zoonotic diseases, such as avian influenza and SARS, was also approved.

Regarding the future of IAC, the Board also agreed that a 10-year plan was necessary for the future of IAC. In this regard, the Board agreed for IAC to begin a consultative process to envision an ideal scope of IAC studies and programmes and to develop a strategic plan for realizing goals for 2007.

Bengkel Pembangunan Keupayaan Yayasan Penyelidikan Korea (KRF) mengenai Pengurusan Penyelidikan

Ahli agensi pembiayaan penyelidikan dari Asia dan Afrika berkumpul di Seoul, Korea pada 12–17 November untuk bertukar-tukar maklumat berhubung polisi dan sistem pengurusan penyelidikan serta pengurusan penyelidikan lanjutan negara-negara lain. ASM diwakili oleh Nasaruddin Rahman. Maklumat terperinci berikut telah dirumus berikutan Bengkel tersebut:

- Pengurusan dan jaringan kerjasama antarabangsa berkaitan program penyelidikan KRF; polisi penyelidikan Korea sistem P&P, struktur pembiayaan, perancangan dan penilaian
- Pembiayaan, haluan dan kerjasama antarabangsa (penyelidikan bersama) penyelidikan di Indonesia dan Vietnam
- Strategi, polisi penyelidikan dan penyelidikan serta pembiayaan organisasi di bawah European Science Foundation
- Mekanisme pengurusan penyelidikan dalam bidang bioteknologi, dan langkah-langkah pembinaan infrastruktur S&T di India
- Peranan penyelidikan akademik, pengurusan prestasi kuantitatif keputusan penyelidikan, kelengkapan untuk perancangan P&P dan menentukan bidang keutamaan penyelidikan; dan
- Menyelaraskan kerjasama antarabangsa, penyelidikan bersama di kalangan agensi penyokong penyelidikan, dan membangunkan satu hub kerjasama antarabangsa di Asia Pasifik.

Bengkel ini telah memberikan pengalaman yang amat berguna dan releven untuk ASM dalam mengurus program penyelidikan dan dana, disamping merumus kursus latihan berkaitan penyelidikan dan pengurusan saintis muda.

Korean Research Foundation (KRF) Capacity Building Workshop on Research Management

Members of research funding agencies from Asia and Africa gathered in Seoul, Korea on 12–17 November to exchange information on research management policy and systems and advanced research management of other countries. ASM was represented by Nasaruddin Rahman. The following detailed knowledge was garnered at the Workshop:

- Management and international collaboration of KRF's research programmes; Korea's research policy, R&D system, funding structure, planning and evaluation
- Funding, directions and international collaboration (joint-research) of research in Indonesia and Vietnam
- Strategy, research policy and research and funding organisations of the European Science Foundation
- Research management mechanism in biotechnology, and S&T infra-structure-building measures in India
- Role of academic research, quantitative performance management of research results, tools for R&D planning and determining research priority areas; and
- Facilitating international collaboration, of joint-research among research support agencies, and developing a hub for international co-operation in Asia Pacific.

The knowledge gained from the workshop was very useful and relevant for ASM in managing research programmes and funds, and formulating training courses on research and management for young scientists.

Mesyuarat Jawatankuasa Eksekutif Panel Antara Akademi (IAP), Itali

Dato' Dr Samsudin Tugiman telah mewakili Akademi, selaku ahli baru Jawatankuasa Eksekutif (EC) IAP, di Mesyuarat di Trieste, Itali (27–28 Februari). Jawatankuasa ini telah menumpukan perhatian mengenai pelan strategik bagi tempoh 2007–2009, pembentukan pelbagai Jawatankuasa, dan pelantikan ASM selaku ahli dalam Jawatankuasa Program dan Perancangan Strategik bersama Netherlands Academy of Arts and Sciences.

Untuk tahun 2008, satu persetujuan sebulat suara telah dicapai iaitu untuk patuh kepada pelan strategik tersebut, program untuk saintis muda, keakraban di kalangan ahli IAP, selain memperkukuh proses tinjauan semula dan penilaian program, aktiviti dan initiatif. Jadi peranan ASM memang tepat, dan mesti terus menyokong dan memainkan peranan penting di IAP selaku ahli EC, untuk kepentingan ahli negara-negara membangun, termasuk Malaysia.

Mesyuarat Jawatankuasa Eksekutif Panel Antara Akademi (IAP), Canberra

Mesyuarat di atas yang berlangsung di Canberra dari 26-27 September telah dihadiri oleh Naib Presiden ASM selaku wakil Akademi. Sewaktu sesi sanggar kerja (brainstorming) mesyuarat telah bersetuju untuk mengelolakan satu simposium pada tahun 2008 untuk membolehkan saintis muda membincangkan amalan-amalan terbaik dalam integriti penyelidikan. ASM juga dicalonkan menganggotai Jawatankuasa Pemandu simposium tersebut. Pencalonan ini memberi ASM peluang untuk menyumbang kepada program dan aktiviti IAP. ASM juga diminta menaja beberapa penyelidik muda dari Malaysia untuk menghadiri simposium berkenaan.

Dalam menguatkuasakan Pelan Strategik IAP, beberapa syor telah dikemukakan: untuk memperkasa akademi-akademi dan memperkukuh IAP; sikap bekerjasama antara akademi secara berterusan; memperkukuh peranan penasihat semua akademi dalam bidang

Inter Academy Panel (IAP) Executive Committee Meeting, Italy

Dato' Dr. Samsudin Tugiman represented the Academy, as the newest member of IAP Executive Committee (EC), at the Meeting in Trieste, Italy (27–28 February). The Committee took note of the strategic plan for the period 2007–2009, the formation of various Committees, and the selection of ASM as a member of the Committee on Programmes and Strategic Planning together with the Netherlands Academy of Arts and Sciences.

For 2008 a consensus was reached on adherence to the strategic plan, programme for young scientists, working relationship between IAP members, and to strengthen the process of review and evaluation of programmes, activities and initiatives. The role of ASM was thus pertinant, and it should continue to support and play an active function in IAP as an EC member, for the benefit of members from developing countries, including Malaysia.

Inter Academy Panel (IAP) Executive Committee Meeting, Canberra

The Academy was represented by the Vice-President at the above meeting which was held in Canberra from 26–27 September. During a brainstorming session it was agreed to organize a symposium in 2008 for young scientists to discuss best practices in research integrity. ASM was also nominated to the steering committee for the symposium; this would provide the opportunity for ASM to contribute to IAP programmes and activities. The Academy is also expected to sponsor some young researchers from Malaysia to attend the symposium.

In the implementation of the IAP Strategic Plan, recommendations were made: for empowering academies and strengthening IAP; for continued inter-academy co-operations; strengthening the advisory role of academies both in science and policy for

sains dan polisi sains; dan kerjasama dalam aktiviti program dan jaringan. Satu pelan penubuhan tabung yang kukuh, cadangan projek untuk pembiayaan (2008) dalam bidang pembangunan keupayaan/ komunikasi saintifik untuk saintis muda, akses sumber pengetahuan digital dan infrastruktur, pendidikan sains, terutama di kawasan Asia-Pasifik, dan pengurusan dan penyelidikan air/ menjambatani air, juga telah diberi perhatian berat.

Lawatan ke Akademi Sains Uzbekistan, dan Akademi Sains Khorezm Mamun

Pada 3–9 Julai, satu delegasi MOSTI telah melawat Uzbekistan untuk menghadiri pameran memperingati ulangtahun ke-1000 Akademi Khorezm Mamun. Delegasi ini telah membincangkan kemungkinan memperoleh barang-barang pameran Akademi Khorezm Mamun untuk dipamerkan di Malaysia dan juga melawat Akademi Sains Kebangsaan, Uzbekistan. Delegasi ini juga telah berbincang kemungkinan menjalin kerjasama dalam pelbagai bidang di antara kedua-dua Akademi.

science; and co-operation in programme activities and networking. A concrete plan for fundraising activities, project proposals for funding (2008) in the area of capacity building/scientific communication for young scientists, access to digital knowledge resources and infrastructures, science education, especially in the Asia-Pacific regions, and in water/bridging water research and management, was also promulgated.

Visit to Academy of Sciences Uzbekistan and Khorezm Mamun Academy of Sciences

A MOSTI delegation was involved in the 3 – 9 July visit to the exhibition dedicated to the 1000th Anniversary of Khorezm Mamun Academy. The delegates discussed possibilities of obtaining exhibits of the Khorezm Mamun Academy to be displayed in Malaysia, visited the National Academy of Sciences Uzbekistan and also discussed possible collaborative work in differing areas between both Academies.



◀ *Deligasi MOSTI ke Uzbekistan.*
MOSTI Delegation to Uzbekistan.

Mesyuarat Majlis Persekutuan Akademi dan Persatuan Sains Asia (FASAS), Bangkok

Mesyuarat ini telah diadakan dari 27–29 November secara bersama oleh Persatuan Sains Thailand, Akademi Sains dan Teknologi Thailand dan Persatuan Akademi Sains di Asia. Felo-felo ASM yang di ketuai oleh Academician Tan Sri Datuk Dr Omar Abdul Rahman dan seorang perwakilan Persatuan Sains Malaysia, menghadiri acara ini yang di adakan sempena Persidangan Antarabangsa Pendidikan Sains di Asia dan Pasifik, Mesyuarat Pihak-pihak berkenaan Pendidikan Sains dan Mesyuarat Mengenai Projet-projet Bersama FASAS.

Persidangan telah bersetuju untuk menumpukan fokus hanya terhadap pendidikan sains di peringkat sekolah, pembangunan bahan-bahan pembelajaran-E mata pelajaran matematik, mengkaji status pendidikan sains di negara-negara ahli, bengkel untuk para pendidik bidang sains, dan program kem musim panas.

Di Persidangan Pendidikan Sains tersebut, ASM yang telah menumpukan penuh perhatian terhadap Projek No. 1 FASAS mengenai, 'Pengajaran Sains Demi Memupuk Kesedaran' atau 'Pengajaran Sains Berlandaskan Kaedah Kesedaran' telah membentangkan kemajuan dan kesimpulan sampel projek kit cahaya yang dikenali sebagai PR2 (Perambatan, pantulan dan pembiasan cahaya)' dan juga satu kertas kerja berjudul 'Kit Cahaya: Dari Amalan Bilik Darjah Membawa ke Pengkomersilan'.

Persidangan dan Pameran Nanoteknologi Antarabangsa, Nanotech Jepun 2007

Persidangan di atas telah diadakan di Tokyo (19-23 Februari) dengan melibatkan acara-acara berkaitan nanoteknologi:

Federation of Asian Scientific Academies and Societies (FASAS) Council Meeting, Bangkok

The Meeting jointly organised with the Science Society of Thailand and Thai Academy of Science and Technology and Association of Academies of Science in Asia, was held from 27–29 November. ASM Fellows, headed by Academician Tan Sri Datuk Dr Omar Abdul Rahman, and a representative of the Malaysian Scientific Association, attended the event which was held in conjunction with the International Conference on Science Education in Asia and the Pacific, Meeting of the Focal Point Persons on Science Education, and Meeting on FASAS Joint Projects.

The Conference agreed to focus its project only on science education at school level, development of E-learning material on mathematics, survey on status of science education in member countries, workshop for science educators, and a summer camp programme.

ASM which anchored FASAS Project No. 1 on 'Science Teaching with Enlightenment' or 'Science Teaching in Enlightened Ways' presented the progress and outcome of the project sample of the light kit called PR2 (Light propagation, reflection and refraction)' and also a paper entitled 'Light Kit: From Classroom Practice to Commercialization' at the Science Education Conference.

Nanotech Japan 2007, International Nanotechnology Exhibition and Conference

The above Conference held in Tokyo (19–23 February) involving the following related events on nanotechnology:

- 5th International Symposium on Nanotechnology Asia Nanobusiness 2007
- Pameran Nanotech 2007
- Nano dan Neo (Bahan Neo-Functional 2007)
- Persidangan dan Pameran Advanced Surface Technology; dan
- METEC' 07

Di Forum Nano Asia (ANF), satu pertubuhan diwakili 13 buah negara telah bersepakat untuk mempromosikan kerjasama antarabangsa dalam bidang nanoteknologi. Pakar-pakar tersohor dari ahli-ahli ekonomi ANF telah memberi taklimat mengenai arah aliran masa depan nanobusiness. Satu perbincangan mengenai undang-undang kecil atau garis panduan ANF juga telah dijalankan, dan perkara ini telah diperhebatkan lagi di Mesyuarat Jawatankuasa Eksekutif ANF di Taiwan telah diadakan pada bulan Jun.

Beberapa Kertas Kerja telah di bentang di Simposium Nanoteknologi mengenai inovasi untuk mengangkat kualiti hidup, persekitaran penyelidikan dan penilaian, hasil penyelidikan seperti produk baru dan konsep baru yang membawa manfaat kepada masyarakat, nanobioteknologi dan aplikasinya dalam bidang perubatan, inovasi menggunakan bahannano, dan komunikasi maklumat.

Prof Halimaton Hamdan, FASc mewakili Akademi dan juga telah melawat National Museum of Emerging Science and Innovation dan telah mengadakan beberapa perbincangan. Penyelidikan beliau mengenai Maerogel juga terpilih untuk dijadikan bahan pameran.

Simposium Antarabangsa Terhadap Sains, Teknologi dan Inovasi, Kuala Lumpur

MOSTI, UNESCO, ASM, World Islamic Call Society dan Pusat Sains Negara menjadi penaja bersama simposium di atas (bertemakan, '*Towards a Prosperous and Secure Islamic World*'), dengan kerjasama Islamic World Academy of Sciences, Islamic Education, Scientific and Cultural Organisation, Bank Pembangunan Islam, World Academy of Young Scientiests dan Third World Academy of Sciences. Simposium ini dijalankan pada 9–11 Ogos 2007 bertempat di Pusat Konvensyen Kuala Lumpur. Simposium ini bertujuan menjelaskan bahawa

- 5th International Symposium on Nanotechnology Asia Nanobusiness 2007
- Nanotech 2007 Exhibition
- Nano and Neo (Neo-Functional Material 2007)
- Advanced Surface Technology Exhibition and Conference; and
- METEC '07.

At Asia Nano Forum (ANF), an association of 13 countries dedicated themselves to promote international co-operation in nanotechnology. They were briefed on the trend and future of nanobusiness by top experts from the ANF member economies. There was also a discussion on ANF's by-Laws or guidelines, and this was further enhanced at the ANF Executive Committee meeting in Taiwan in June.

Numerous papers were presented at the Symposium on Nanotechnology on innovations for a higher quality of life, research environment and evaluation, research outcomes such as new products and new concepts useful to society, nanobiotechnology and its application in medicine, innovation from nanomaterials, and information communication.

Prof Halimaton Hamdan, FASc represented the Academy, and also had discussions at the National Museum of Emerging Science and Innovation. Her research on Maerogel was also selected for exhibition.

International Symposium on Science, Technology and Innovation, Kuala Lumpur

MOSTI, UNESCO, ASM, World Islamic Call Society and the National Science Centre jointly organised the Symposium (theme entitled 'Towards a Prosperous and Secure Islamic World'), with the collaboration of the Islamic World Academy of Sciences, Islamic Education, Scientific and Cultural Organisation, Islamic Development Bank, World Academy of Young Scientists and the Third World Academy of Sciences, on 9–11 August 2007 at the KL Convention Centre. The aim was to reveal that

Islam bukan setakat menekankan soal agama malah mengambil berat soal peningkatan pengetahuan dalam bidang S&T demi pembangunan ekonomi dan modal manusia.

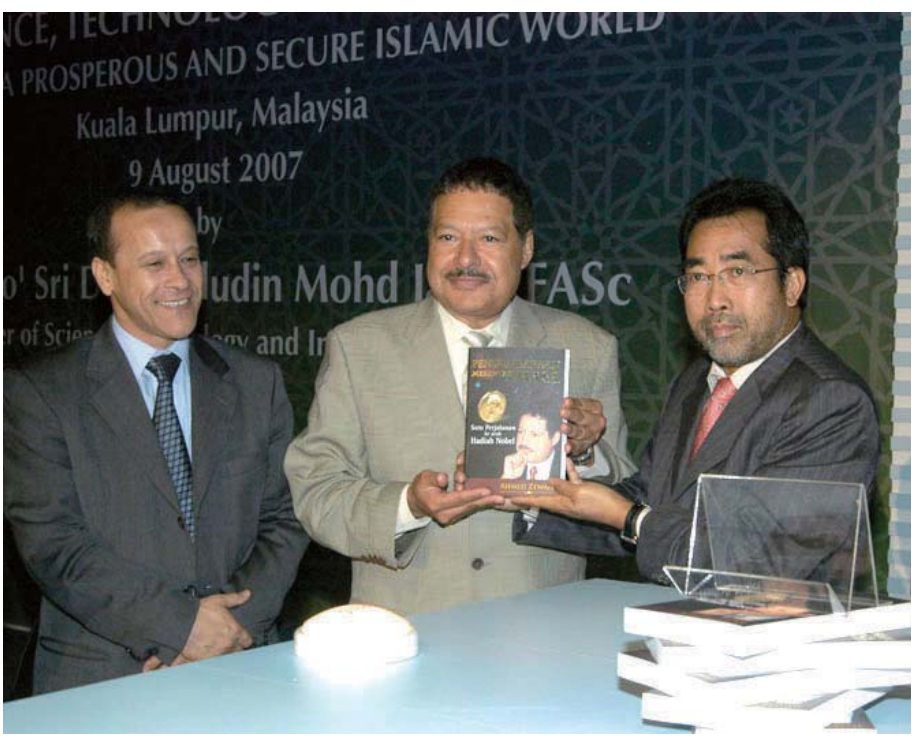
YB Datuk Seri Dr Jamaludin Mohd Jarjis, Menteri Sains, Teknologi dan Inovasi, Malaysia, yang merasmikan majlis pembukaan tersebut, juga telah melancarkan buku terjemahan Bahasa Melayu karangan pemenang Nobel Laureate Prof Ahmed Zewail bertajuk *Pengembaraan Merentasi Masa: Satu Perjalanan ke Arah Hadiah Nobel* (*Voyage through Time: Walk of Life to the Nobel Prize*).

Acara utama sesi pleno merupakan ucaptama upacara pembukaan berjudul, '*Reflection on Science, Technology and Innovation in the Muslim World*', disampaikan oleh Prof Zewail. Simposium ini terbahagi pada tiga sesi. Sesi pertama bertajuk, '*Building upon the Past*' diikuti dengan tujuh kertas kerja dan satu syarahan istimewa. Pada hari kedua, tiga lagi kertas kerja telah disampaikan dengan tema, '*Applying STI: The Present Situation*' dengan ucaptamanya berjudul, '*Science, Technology and Innovation and the United Nations Millennium Development Goals*' oleh Prof Jeffery Sachs of Colombia University dan Pemegang Pertama Kerusi Royal Professor Ungku Aziz terhadap Kemiskinan dan Pembangunan, Universiti Malaya.

Islam not only emphasises on religion but also places utmost importance on acquiring knowledge in S&T for economic and human capital development.

Hon. Datuk Seri Dr Jamaludin Mohd Jarjis, the Minister of Science, Technology and Innovation, Malaysia, who officiated at the function, also launched the translated Bahasa Melayu version of the book *Voyage through Time: Walk of Life to the Nobel Prize* by Nobel Laureate Prof Ahmed Zewail entitled *Pengembaraan Merentasi Masa: Satu Perjalanan ke Arah Hadiah Nobel*, at the opening ceremony.

The highlight of the plenary session was the keynote address at the Opening Ceremony entitled 'Reflections on Science, Technology and Innovation in the Muslim World' delivered by Prof Zewail. The Symposium was divided into three sessions. The first session was entitled 'Building upon the Past' followed by seven papers and a special lecture. During the second day, three more papers were presented on the theme 'Applying STI: The Present Situation' with a keynote address entitled 'Science, Technology and Innovation and the United Nations Millennium Development Goals' by Prof Jeffrey Sachs of Columbia University and the First Holder of the Royal Professor Ungku Aziz Chair for Poverty and Development, University of Malaya.



◄ *Pelancaran buku Prof Zewail bertajuk* Pengembaraan Merentasi Masa . *Launching of Prof Zewail's book* 'Pengembaraan Merentasi Masa'.

Pada hari penamat simposium (tema' *Global Scenario and the World Perspective of Science, Technology and Innovation*') satu lagi ucaptama bertajuk, '*Global Scenario of STI: Perspective of Developing Countries*' telah disampaikan oleh Prof Yves Quere dari Akademi Sains Perancis. Acara kemuncak simposium ini ialah satu forum bertajuk, '*Islamic Development on Science, Technology and Innovation: The Way Forward*,' dipengerusikan oleh Yang Berhormat Menteri.

Bengkel Belia Antarabangsa Mengenai Sains, Teknologi dan Inovasi, Kuala Lumpur

Bengkel ini kelolakan dengan tema, '*Towards a Properous and Secure Islamic World*' dianjur oleh ASM dengan kerjasama MOSTI dan UNESCO. Bengkel dua hari ini (6–7 Ogos, bertempat di Pusat Konvensyen Kuala Lumpur) juga disokong oleh Bank Pembangunan Islam, Islamic World Academy of Science, Academy of Sciences in the Developing World, OIC Standing Committee on Scientific and Technological Co-operation, and Islamic Educational Scientific and Cultural Organisation.

Bengkel ini diadakan seiring dengan International Symposium on Science, Technology and Innovation. Bengkel ini bermatlamat membangunkan satu forum belia dan jaringan STI; memperluaskan jaringan profesional; untuk mempromosi konsep pembangunan modal manusia dari prespektif Islam Hadhari; dan menyediakan resolusi untuk diketengahkan ke Simposium STI Antarabangsa.

Sejumlah 90 saintis muda (berumur kurang dari 40 tahun) menghadiri bengkel ini. 65 peserta dari jumlah ini berasal dari 14 buah negara OIC. Menerusi satu sesi sanggar kerja yang panjang dan memanfaatkan tiga fokus telah dipersetujui iaitu pembangunan modal manusia, budaya kerja cemerlang dan pengurusan STI untuk penjanaan kekayaan. Di penghujung bengkel, satu resolusi mengenai belia Islam dalam bidang STI telah dirumus. Para peserta juga komited dalam mengwujudkan portal-portal pengurusan pengetahuan STI selain berkongsi serta membangunkan secara bersama (berasaskan konsep sumber terbuka) perantaraan baru untuk pengurusan penyelidikan untuk para penyelidik muda di negara-negara Islam dengan menggunakan *K-Chart.*

On the final day of the Symposium (theme 'Global Scenario and World Perspective of Science, Technology and Innovation') another keynote address entitled 'Global Scenario of STI: Perspective of Developing Countries' was presented by Prof Yves Quere of the French Academy of Sciences. The Symposium culminated with a forum on 'Islamic Development on Science, Technology and Innovation: The Way Forward,' chaired by the Honourable Minister.

International Youth Workshop on Science, Technology and Innovation, Kuala Lumpur

This Workshop with the theme 'Towards a Prosperous and Secure Islamic World' was organised by ASM in collaboration with MOSTI and UNESCO. This two-day workshop (6–7 August, held at the KL Convention Centre) was also supported by Islamic Development Bank, Islamic World Academy of Science, Academy of Sciences in the Developing World, OIC Standing Committee on Scientific and Technological Co-operation, and Islamic Educational Scientific and Cultural Organisation.

The Workshop was organised in conjunction with the International Symposium on Science, Technology and Innovation. The objectives of the workshop were to establish a youth forum and networking in STI; to broaden a professional network; to promote a concept of human capital development from the perspective of Islam Hadari; and to prepare resolutions for submission to the International Symposium on STI.

A total of 90 young scientists (less than 40 years' old) attended the Workshop. All but 25 were from 14 OIC countries. Human capital development, excellent work culture, and management of STI for wealth creation were the three areas of focus during a fruitful and lengthy brainstorming session. At the end of the Workshop, a resolution on Muslim youths in STI was produced. The participants of the workshop were also committed to establish a STI knowledge management portal and to share and co-develop (based on open source concept) new tools for research management for young scientists in the Islamic countries using the K-Chart.

Kursus Latihan Pengurusan S&T untuk Penyelidik Negara-Negara OIC

Kursus bertempat di Kuala Lumpur ini telah dianjur oleh ASM dari 27 Ogos–7 September, di bawah Program Kerjasama Teknikal Malaysia. Seramai 27 peserta, sebahagian besar darinya merupakan peserta dari negara OIC, telah memperoleh pengetahuan teori berhubung tren terkini di dalam lapangan pengurusan sains dan inovasi. Para peserta juga telah melawat Lembaga Kelapa Sawit Malaysia, Institut Penyelidikan Perhutanan, Universiti Malaya Dan Institut Penyelidikan Perubatan untuk mempelajari cara-cara melaksana dan mengurus P&P. Dua puluh tiga pakar S&T dan bidang yang berkaitan telah berkongsi kepakaran dan pengetahuan dengan para peserta kursus. Pakar-pakar ini termasuklah Felo ASM dan penyelidik terkemuka Malaysia.



Sesi semasa bengkel dijalanjkan.
Worskhop in session. ▲

S&T Management Training Course for Researchers in OIC Countries

The Course was organized by ASM in Kuala Lumpur from 27 August–7 September, under the Malaysian Technical Co-operation Programme. A total of 27 participants, largely from 18 OIC countries were offered theoretical insight on current trends in science and innovation management. Participants also visited the Malaysian Palm Oil Board, Forest Research Institute, University Malaya and Institute of Medical Research to learn about conducting and managing R&D. Twenty-three experts on S&T and its related subjects shared their expertise and experience with the participants in the training course. They included Fellows of ASM and leading researchers in Malaysia.



Peserta dari negara OIC di FRIM.
Participants from OIC countries at FRIM. ▲

Mesyuarat Kumpulan Bekerja Nanoteknologi Mengenai Infrastruktur dan P&P

Mesyuarat di atas yang telah dikendali oleh ASM dengan kerjasama Forum Nano Asia (ANF) merupakan langkah pertama ke arah memperkukuh penyelidikan nanotechnologi di Asia. Mesyuarat ini yang diadakan di Kuala Lumpur pada 25 Januari telah dihadiri oleh 50 peserta yang mewakili pelbagai agensi, kementerian

Nanotechnology Working Group Meeting on Infrastructure and R&D

The Meeting was organized by ASM in collaboration with Asia Nano Forum (ANF) as the first step towards the enhancement of nanotechnology research in Asia. It was held in Kuala Lumpur on 25 January and consisted of about 50 participants representing various government agencies, ministries and institutions of higher learning

dan institusi pengajian tinggi dan wakil ANF dari India, Indonesia, Jepun, Singapura, Taiwan dan Thailand. Antara objektif Kumpulan Kerja mesyuarat ialah untuk mendirikan jaringan nanoteknologi di kalangan negara-negara ahli ANF; menentukan Bidang Tugas Kumpulan Kerja untuk Initiatif Nanoteknologi Kebangsaan dan ANF; mencadangkan mekanisme penguatkuasaan aktiviti berkaitan; membangunkan pengkalan data kepakaran penyelidikan, sumber, prasarana/infrastruktur dan kemudahan selain membangunkan bidang-bidang keutamaan dan kerjasama penyelidikan. Acara ini telah membuka peluang untuk penyelidik nanoteknologi tempatan membangunkan jaringan dengan ekonomi lain selain berkongsi maklumat kepentingan bersama berhubung nanoteknologi.

and representatives of the ANF member economies from India, Indonesia, Japan, Singapore, Taiwan and Thailand. Among the objectives of the Working Group meeting were to establish nanotechnology networking among ANF member countries; determine the Terms of Reference of the Working Group for National Nanotechnology Initiative and ANF; propose mechanism of implementation of related activities; develope data bases of research expertise, resources, infrastructure and facilities and establish niche areas and research collaborations. The event provided an opportunity for local nanotechnology researchers to establish networking with other economies and share common interest in nanotechnology.



Semasa roadshow di UPM.
During a roadshow at UPM. ▲



Dialog dengan industri bioteknologi.
Dialogue with biotechnology industries. ▲

Taiwan Nano 2007

Pameran Nano di atas yang telah diadakan pada 12-16 Jun dan melibatkan ASM merupakan sebahagian daripada ekonomi ahli Forum Nano Asia (ANF). Dalam acara ini, Initiatif Nanoteknologi Kebangsaan dan Brain Gain Malaysia telah dipromosikan. Delegasi ini juga mengambil bahagian di Bengkel Pengajar/Guru ANF (14–15 Jun) dan telah membentangkan satu kertas kerja yang menumpukan fokus terhadap pendekatan praktis mengenai pengajaran dan pembelajaran

Taiwan Nano 2007

ASM participated at the Nano Exhibition which was organized on June 12 – 16 as part of the member economies of Asia Nano Forum (ANF). National Nanotechnology Initiative and Brain Gain Malaysia were promoted at the event. The delegation also participated at the ANF Teachers Workshop (June 14 – 15) and presented a paper which focused on the hands-on teaching and learning to be adopted to introduce nanotechnology education to students in Malaysia. The workshop focused

yang akan digunakan untuk memperkenalkan nanoteknologi kepada para pelajar di Malaysia. Bengkel ini menumpukan perhatian terhadap beberapa aktiviti seperti aktiviti mempromosikan nanoteknologi di sekolah-sekolah K-12, pembangunan bahan mengajar, aktiviti eksperimen secara pendekatan praktis, dan integrasi kurikulum. Bengkel ini telah memberikan satu forum yang merangsangkan di samping mencabar minda untuk pembangunan pendidikan dan idea terkini dalam program pendidikan K-12 untuk 13 ekonomi dari Asia-Pasifik. Penglibatan ini telah membuka peluang kepada delegasi untuk berkongsi sumber dan bahan pengajaran nanoteknologi dari Taiwan yang akan digunakan semasa Nanotech Malaysia 2007.

on nanotechnology promotion activities in K-12 schools, teaching material development, hands-on activity experiments, and curriculum integration among other things. This workshop gave a stimulating and thought-provoking forum for sharing of the latest educational developments and ideas in K-12 education program for the 13 economies in the Asia-Pacific regions. The participation provided an opportunity for the delegates to learn more about nanotechnology development in Taiwan and especially on its nanotechnology education. Participation at the event provided the opportunity to share the resources and materials from Taiwan on nanotechnology education which would be used during the Nanotech Malaysia 2007.



Astaka ANF semasa Taiwan Nano 2007. ▲
ANF pavilion during Taiwan Nano 2007.



Dewan Pameran—Taiwan Nano 2007. ▲
Exhibition Hall—Taiwan Nano 2007.

Projek Khas

Disebabkan kewibawaan felonya serta lingkungan kepakarannya yang pelbagai, Akademi sering diundang untuk menjalankan projek khas yang penting kepada Kementerian Sains, Teknologi dan Inovasi

Special Projects

By virtue of the pre-eminance of its Fellows and the trans-disciplinary nature of its expertise, the Academy is frequently called upon to undertake important projects of special significance to the Ministry of Science, Technology and Innovation

Brain Gain Malaysia

Pihak Akademi telah mengadakan jerayawara ke institusi pengajian tinggi dan institut penyelidikan Malaysia sebagai memenuhi sebahagian daripada tujuh inisiatif di bawah Program Brain Gain Malaysia untuk memberi keutamaan P&P kepada bidang-bidang yang dikenal pasti oleh Kerajaan Malaysia.

Brain Gain Malaysia

In fulfilling part of the seven initiatives of the Brain Gain Malaysia Programme to prioritise R&D areas designated by the Malaysian Government, the Academy organised and conducted the following roadshows to institutions of higher education and research institutes in Malaysia.

Expert Review Panel / Expert Review Panel	Tempat / Venue	Lawatan / Visits
Bioteknologi / Kesihatan | Biotechnology / Healthcare	Universiti / Universities	9
Bioteknologi / Pertanian | Biotechnology / Agriculture	Universiti / Universities	1
Bioteknologi / Pertanian | Biotechnology / Agriculture	Institut Penyelidikan / Research Institutes	1
Teknologi Komputer Bersepadu | Integrated Computer Technology	Universiti / Universities	6
Nanoteknologi | Nanotechnology	Universiti / Universities	6
Bahan Termaju | Advanced Materials	Universiti / Universities	5

Program Pelawat Tersohor untuk membangunkan asas saintifik yang kukuh (untuk mempelawa para saintis tersohor melawat Malaysia dan bekerjasama dengan saintis tempatan melalui tugasan pendek) juga telah dijalankan.

The following Distinguished Visitor Programme to develop a strong scientific base (to bring eminent scientists to Malaysia to visit and collaborate with local scientists for short attachments) was also undertaken.

Permohonan / Applications	Diluluskan / Approved	Ditolak / Rejected
Program Pelawat Tersohor / Distinguished Visitor Programme	7	8
Program/Fellowship Antarabangsa dan Post-Doctoral / International Fellowship and Post-doctoral Programme	7	4

Satu lawatan mempromosi Program Brain Gain Malaysia ke Amerika Syarikat juga telah dianjur dari 22 Julai –1 Ogos 2007.

A promotion tour to publicize the Brain Gain Malaysia programme to the USA was also undertaken on 22 July – 1 August 2007.

Kajian Bencana dan Risiko Seismos dan Tsunami di Malaysia

Dengan termeterainya persetujuan dengan Jabatan Meteorologi Malaysia (MMD) yang mewakili Kerajaan Malaysia, ASM telah dilantik menjadi organisasi peneraju mengenai 'Kajian Bencana dan Risiko Seismos dan Tsunami di Malaysia'. ASM telah disaran supaya mengurus dan menyelaraskan pelaksanaan kajian ini. Jabatan Mineral dan Geosains Malaysia (JMGM), Jabatan Meteorologi Malaysia, Universiti Putra Malaysia (UPM), Universiti Sains Malaysia (USM), Universiti Teknologi

Seismic and Tsunami Hazards and Risk Study in Malaysia

With the signing of an agreement with the Malaysian Meteorological Department, representing the Government of Malaysia, the Academy was appointed on 13 December 2005 to be the lead organization in the 'Seismic and Tsunami Hazards and Risk Study in Malaysia'. ASM was requested to manage and co-ordinate the implementation of the study. The Minerals and Geoscience Department Malaysia, Malaysian Meteorological Department, University Putra

Malaysia (UTM), dan seorang individu, En Leyu Chong Hua, telah terlibat dalam kajian ini.

Semua organisasi telah menyediakan Laporan Kemajuan. Laporan bertajuk *Kajian Makroseimik Malaysia* menunjukkan peta intensiti gempa bumi di Malaysia. Laporan lain termasuk laporan muktamat oleh JMGM (*Peta Seismotektonik Malaysia*) yang telah meringkaskan maklumat seismotektonik dengan cara menyusun dan mengkatalog data sedia ada mengenai aktiviti gempa bumi lampau di Malaysia serta Laporan berjudul *Bencana dan Risiko Gempa Bumi dan Tsunami terhadap Sistem Marin dan Pantai di Utara Malaysia* oleh USM. Tahun ini Akademi telah mengemukakan tiga Laporan Kemajuan kepada Jawatankuasa Antara Agensi mengenai Pengurusan Risiko Gempa bumi dan Tsunami. Kajian ini dijangka siap pada bulan September 2008.

Pameran dan Persidangan Inovasi Kebangsaan (NICE) 2007

MOSTI telah menganjur NICE dari 28–30 November bertempat di Pusat Perdagangan Dunia Putra sempena Mesyuarat Majlis Inovasi Kebangsaan (NIC) ke–2. NICE 2007 telah memaparkan persidangan, pameran, pelbagai program berkaitan inovasi dan aktiviti yang memerlukan penglibatan meluas pertubuhan-pertubuhan tempatan dan antarabangsa. Antara acara kemuncak di NICE ialah Wadah Inovasi, Wadah Angkasawan, BioMalaysia 2007, Waste-to-Wealth, ROBOFEST, Forum Inovasi Kebangsaan, Dialog Industri MOSTI, Seminar dan Wadah Kelompok ICT, Nanotech Malaysia 2007 dan Seminar Remote Sensing, GIS dan pelbagai teknologi berkaitan.

Anugerah Inovasi Negara 2007

Kementerian Sains, Teknologi dan Inovasi memberi kepercayaan kepada Akademi Sains Malaysia mengurus dan menyelaraskan Anugerah Inovasi Negara 2007. Anugerah ini dihadiahkan untuk menghargai usaha inovatif dan kreatif menjurus ke arah penjanaan idea, ciptaan dan produk baru melalui amalan sains dan teknologi sehingga menghasilkan kekayaan dan kesejahteraan masyarakat. Pada 30 November, Perdana

of Malaysia, Science University of Malaysia, the University of Technology Malaysia, and an individual, Mr. Leyu Chong Hua, participated in the Study.

Progress Reports were submitted by all organisations and the report entitled *Macroseismic Study of Malaysia* showed the earthquake intensity map of Malaysia. The others include the final report of JMGM (*Seismotectonic Map of Malaysia*) which summarized the seismotectonic information which included the compilation and cataloguing of all available data of past earthquake activities in the country; and the USM report entitled *The Earthquake and Tsunami Hazards and Risk on the Natural Marine and Coastal Systems of North Malaysia*. To date, the Academy has submitted three Progress Reports to the Inter-Agency Committee on Earthquake and Tsunami Risk Management during the year. The Study will be completed by September 2008.

National Innovation Conference and Exhibition (NICE) 2007

MOSTI organised NICE from 28–30 November at Putra World Trade Centre, in conjunction with the second National Innovation Council (NIC) Meeting. NICE 2007 featured conferences, exhibitions, various innovation related programmes and activities with extensive involvement from both local and international organisations. Some of the event highlights during NICE were Innovation Showcase, Angkasawan Showcase, BioMalaysia 2007, Waste-to-Wealth, ROBOFEST, National Innovation Forum, MOSTI Industry Dialogue, ICT Cluster Seminars and Showcase, Nanotech Malaysia 2007 and Seminar on Remote Sensing, GIS and Related Technologies.

National Innovation Award 2007

The Ministry of Science, Technology and Innovation entrusted the Academy of Sciences Malaysia to manage and co-ordinate the National Innovation Award 2007. The Award is given to recognize innovative and creative efforts towards generating ideas, inventions, and new products by harnessing science and technology towards wealth creation and societal well being. Right Hon.

Menteri Malaysia, YAB Abdullah Ahmad Badawi telah menghadiahkan Anugerah Inovasi Negara kepada pemenang-pemenang berikut:

(i) Kategori Produk
[Hadiah: Anugerah Inovasi Negara (Piala); RM100 000 dan sekeping sijil.]

Pemenang Bersama:

- **Multimedia Conferencing System (MCS) Version 6**
  National Advanced IPV 6 Centre of Excellence, School of Computer Sciences, Universiti Sains Malaysia.

- **GranuMas™** (Produk perubatan, tulang sintetik)
  Dr Fazilah Fazan, AMREC, SIRIM.

(ii) Kategori Akar Umbi
[Hadiah: Anugerah Inovasi Negara (Piala); RM50 000 bantuan untuk harta intelek berjumlah RM3 000 setiap seorang dan sijil]





Prime Minister of Malaysia Abdullah Ahmad Badawi, presented the National Innovation Award to the following recipients on 30 November:

(i) Product Category
[Prize: National Innovation Award (Trophy); RM 100 000 and a certificate.]

Joint Winners:

- **Multimedia Conferencing System (MCS) Version 6**
  National Advanced IPV 6 Centre of Excellence, School of Computer Sciences, Universiti Sains Malaysia.

- **GranuMas™** (A synthetic bone medical product)
  Dr Fazilah Fazan, AMREC, SIRIM.

(ii) Grass Root Category
[Prize: National Innovation Award (Trophy); RM50 000 grant for intellectual property amounting RM3000 each and certificate.]

◄ *YAB Perdana Menteri menyampaikan Piala kepada Bugs Tan Yeow Kiang.*
The Right Hon. Prime Minister presenting the Award to Bugs Tan Yeow Kiang.



YAB Perdana Menteri dan YB Menteri Sains, Teknologi dan Inovasi di tapak pameran.
The Right Hon. Prime Minister and Hon. Minister of Science, Technology and Innovation at the exhibition. ▲

◄ *Pelawat pameran NICE.*
Visitors at the NICE exhibition.

Pemenang Bersama:

- **Kereta Sorong Lipat**
  Mohd Shahrizan Ali, Pusat Giatmara Kuantan, Pahang.

- **GR20: Light Weight and Anti Slip Grating System.**
  Bugs Tan Yeow Kiang, Petaling Jaya.

(iii) Kategori Perkhidmatan Awam
[Hadiah: Anugerah Inovasi Negara (Piala); RM50 000 dan sijil.]

Pemenang:
Preparation of Bone Graft and High Quality Wound Wrapper
Tissue Bank Unit, Hospital Sains Malaysia.

(iv) Kategori Sekolah
[Hadiah: Anugerah Inovasi Negara (Piala); RM20 000 dan sijil.]

Pemenang:
Efficient Motorcar Riding System
Sekolah Menengah Teknik, Kuala Lumpur



YAB Perdana Menteri diberikan penerangan oleh salah seoring pemenang.
The Right Hon. Prime Minister is being briefed by one of the Award winners. ▲

Nanotech Malaysia 2007

Akademi telah meganjur acara ini di bawah naungan MOSTI bertempat di Pusat Dagangan Dunia Putra (29 November-1Disember), bertemakan 'Nanotechnology: Technology Innovation for Wealth Creation and New Dimension of Living'. Lebih 800 penyertaan dari pelbagai bidang berkaitan telah menyertai acara ini—Forum

Joint Winners:

- **Kereta Sorong Lipat/ Foldable Push-Cart.**
  Mohd Shahrizan Ali, Pusat Giatmara Kuantan, Pahang.

- **GR 20: Light Weight and Anti Slip Grating System.**
  Bugs Tan Yeow Kiang, Petaling Jaya

(iii) Public Services Category
[Prize: National Innovation Award (Trophy); RM50 000 and certificate.]

Winner:
Preparation of Bone Graft and High Quality Wound Wrapper.
Tissue Bank Unit, Hospital Universiti Sains Malaysia.

(iv) School Category
[Prize: National Innovation Award (Trophy), RM20 000 and certificate.]

Winner:
Efficient Motorcar Riding System
Secondary Technical School, Kuala Lumpur



Para pemenang berkumpul semasa upacara penganugrahan.
Winners gather together during Award Ceremony ▲

Nanotech Malaysia 2007

The Academy organised this inaugural event under the auspices of MOSTI which was held at the Putra World Trade Centre (29 November–1 December), with the theme 'Nanotechnology: Technology Innovation for Wealth Creation and New Dimension of Living'. It attracted more than 800 participants for all the related functions—Asia

Kemuncak Nano Asia; Simposium P&P Nanoteknologi; Perniagaan Nanoteknologi and R&D Matching Luncheon; Nanoteknologi di Asia; Natural Strategy for R&D and Commercialization Forum; Pameran Nanoteknologi and Kesedaran dan Pendidikan Nanoteknologi.

Acara tiga hari ini yang dianjur julung kali di Malaysia, sebagai acara utama Initiatif Nanoteknologi merupakan sebahagian daripada acara Pameran dan Persidangan Inovasi Kebangsaan (NICE). Acara ini dibuka secara rasmi oleh YAB Dato' Seri Abdullah Ahmad Badawi, Perdana Menteri Malaysia. Nanotech Malaysia telah dirancang berlandaskan objektif-objektif berikut:

- Menganjur Simposium Nanotech dan Forum Nanotech dengan hasrat memperkenalkan nanoteknologi, menyebarkan dan memberikan maklumat terkini mengenai pembangunannya.
- Merangsang penubuhan Persatuan Nanoteknologi Malaysia.
- Menjalin hubungan antara penyelidikan-perniagaan berasaskan nanoteknologi antara para penyelidik, korporat dan sector komersil tempatan.
- Menjalin hubungan bidang nanoteknologi di kalangan negara-negara di Asia.
- Mendidik dan memupuk kesedaran pengetahuan nanoteknologi di kalangan masyarakat umum; dan
- Menjadi tuan rumah Persidangan Kemuncak Nano Asia 2007.

Sebanyak 18 pembentangan oral dan 34 kertas kerja poster telah dibentang termasuk dua syarahan Pleno dan empat ucapan dasar untuk Simposium dan di Persidangan Kemuncak Forum Nano Asia ke-4, 2007. Prosiding pameran akan diterbitkan manakala laporannya sedang disediakan

Kegemilangan Sains dalam Tamadun Islam: Katalog Sains Islam Mendahului Zaman

Pameran ini merupakan tajaan bersama Akademi dan MOSTI, dengan kerjasama Institute for the History Arab-Islamic Sciences, Frankfurt, Jerman dari 8 Januari–14 Februari 2007 bertempat di Pusat Konvensyen Kuala Lumpur. Prof Fuat Sezgin, yang merupakan pengasas dan Pengarah Kehormat institut tersebut adalah seorang ahli sejarah yang tersohor dan dihormati dalam bidang

Nano Forum Summit; R&D Nanotechnology Symposium; Nanotechnology Business and R&D Matching Luncheon; Nanotechnology in Asia: Natural Strategy for R&D and Commercialization Forum, Nanotechnology Exhibition, and Nanotechnology Education and Awareness.

The three-day event organised in Malaysia for the first time, as the highlights of the Nanotechnology Initiative, and part of the National Innovation Conference and Exhibition, was officiated by Right Hon. Dato' Seri Abdullah Ahmad Badawi, the Prime Minister. Nanotech Malaysia 2007 was planned with the following objectives:

- To organize the Nanotech Symposium and Nano Forum in order to introduce nanotechnology, disseminate and provide current information on its development
- To initiate the establishment of Malaysian Nanotechnology Society
- To establish research-business relationship on nanotechnology among local researchers, corporate and commercial sectors
- To foster relationship among Asian countries in nanotechnology
- To educate and promote awareness in nanotechnology to the public; and
- To host the Asia Nano Summit 2007.

A total of 18 oral presentations and 34 poster papers were presented, including two plenary lectures and four keynote addresses for both the Symposium and at the 4th Asia Nano Forum Summit 2007. The proceedings will be published and a report is also being prepared.

Scientific Excellence in Islamic Civilisation: Islamic Science Ahead of its Time Catalogue

The above exhibition was co-organized by the Academy with MOSTI, in collaboration with the Institute for the History of Arab-Islamic Sciences, Frankfurt, Germany from 8 January–14 February 2007 at the KL Convention Hall. Prof Fuat Sezgin, who is the Founder and the Honorary Director of the Institute is an eminent and respected historian of science and technology in the Muslim world.

sains dan teknologi di kalangan Negara-negara Islam. Beliau merupakan seorang peminat barang-barang bersejarah dan telah berjaya membina semula lebih 800 model astronomi dan perubatan yang dibina oleh saintis Islam silam. Pameran ini memperagakan lebih 148 objek termasuk model, manuskrip dan model berfungsi dari 4 katogeri iaitu (i) astronomi Islam, geografi dan pelayaran; (ii) Penemuan dan Penjanaan Perubatan; (iii) Matematiks, Kesenian dan Seni Bina dan (iv) Teknologi dan Penciptaan. Lebih 250 000 pelawat dari serata Malaysia telah membanjiri pameran ini.

Pelancara buku bertajuk, *Science and Technology in Islam Catalogue* yang diterbitkan oleh Institute for the History of Arabic- Islamic Science, Johann Wolfgang Goethe University, Germany jugga dilakukan sempena pameran ini. Edisi special ini merupakan satu daripada usaha MOSTI dalam menentukan sebaran fakta berhubung pencapaian saintifik pada zaman kecemerlangan Islam akan berterusan, dan tidak berakhir dengan pameran ini. Katalog ini bertujuan meningkatkan pengetahuan dan rujukan umum agar kesan dan pengetahuan yang disalurkan akan kekal selama-lamanya. Katalog ini dipersembahkan dalam tiga bahasa: bahasa Melayu, Inggeris dan bahasa Arab.

He is a collector of historic items and successfully re-built more than 800 models on astronomy and medicine which were invented by Muslim scientists. The exhibition displayed 148 exhibit items which includes models, manuscripts and working models from four categories which are (i) Islamic astronomy, geography and navigation; (ii) Discoveries and Medical Creations; (iii) Mathematics, Arts and Architecture; and (iv) Technology and Creations. The exhibition attracted 250 000 people from all over Malaysia.

In conjunction with the Exhibition a translation of the book entitled *Science and Technology in Islam Catalogue* published by the Institute for the History of Arabic-Islamic Science, Johann Wolfgang Goethe University, Germany was also launched. This special edition is one of MOSTI's efforts to ensure continuity in the dissemination of facts regarding scientific achievements during the Islamic renaissance, and it does not end with the Exhibition. This catalogue is meant for public reading and reference and the effect and knowledge passed would be a lasting one. The catalogue is in three languages: Malay, English and Arabic.



Peserta mendengar syarahan yang disampaikan semasa P&P Matching Luncheon .
Participants listening to a lecture during the R&D Matching Luncheon. ▲



Para penyunjung pameran Tamadun Islam.
Participants at the Islamic Civilization exhibition. ▲

Program Sains Angkasawan

Akademi telah dilantik untuk menguruskan program saintifik ini secara kerjasama dengan Agensi Angkasa Negara (ANGKASA). Selepas bertungkus lumus dan merancang selama beberapa tahun, angkasawan Malaysia, Dr Sheikh Muszaphar, telah melaksanakan Program Saintifik ini dengan jayanya.

Pada 10 Oktober 2007, tepat jam 19.22 waktu Baikonur, Soyuz TMA-11 berjaya dilancarkan. Pada hari berikutnya, pasukan teknikal telah kembali ke Moscow. Para Penyelidik Utama dan jurutera di Pusat Kawalan Misi, Moscow memulakan tugasan kawalan dan pemantauan misi sebaik Soyuz bercantum dengan fasiliti penyelidikan Stesen Angkasa Antarabangsa (ISS). Mesyuarat perancangan diadakan setiap hari dengan pasukan teknikal Rusia untuk memutuskan jadual kerja harian angkasawan Malaysia. Selain itu dua sesi komunikasi lintasan suara dengan angkasawan tersebut juga di adakan. Lintasan suara ini membolehkan angkasawan melaporkan tugasan berhubung eksperimen yang telah mereka jalankan, mengemukakan soalan serta menerima sebarang arahan yang telah dikemaskini.

Semua penyelidikan sains [Protein in Space Activation, Motion Perception, MUSCLE (Low Back Pain), Cancer in Space Activation, MIS Activation, Twisting Orbital Platform, Food in Science and Eye Tracking Device (ETD)] termasuk penyelidikan untuk Agensi Angkasa Eropah (ESA) dan Agensi Eksplorasi Angkasa Lepas Jepun telah dijalankan dengan sempurna. Selain itu Sheikh Muszaphar juga telah berjaya menyempurnakan kerja-kerja membaiki ETD milik ESA.

Dr Sheikh Muszaphar telah selamat kembali ke bumi sebaik Soyuz TMA-11 mendarat pada 21 Oktober 2007. Kapsul Soyuz telah terbabas dari sasaran asal semasa memasuki ruang angkasa bumi. Ini mengakibatkan Soyuz mengalami daya G yang tinggi dan bergelora semasa menembusi atmosfera bumi ketika mendarat. Masalah ini timbul kerana gangguan komputer telah menyebabkan Soyuz mengalami trajektori masuk pada sudut yang lebih curam berbanding sudut yang telah ditetapkan. Meski pun begitu, semua sampel sains terselamat. Sampel-sampel ini termasuk hablur protein yang agak sensitif juga tidak musnah akibat pendaratan tersebut.

The *Angkawasan* (Astronaut) Science Programme

The Akademy was appointed to manage the scientific programme with the National Space Agency (ANGKASA). After many years of hard work and planning, the Scientific Programme was finally successfully carried out by the Malaysian astronaut (Dr Sheikh Muszaphar).

Soyuz TMA-11 was launched successfully at 19:22 Baikonur time, on 10 October 2007. The following day the technical team was flown back to Moscow. The mission command and monitoring work was started by the Principle Investigators (PIs) and the engineers at Mission Control Center Moscow on the day of the Soyuz docking with the International Space Station (ISS) research facility. There was a planning meeting held daily with the Russian technical team in order to finalize the Malaysian astronaut's schedule for the day. There were also two voice-loop communication sessions with the astronaut every day. This was for the astronauts to report what they had done on the experiments, ask any questions they had and also to receive any updated instructions.

All the science experiments [Protein in Space Activation, Motion Perception, MUSCLE (Low Back Pain), Cancer in Space Activation, MIS Activation, Twisting Orbital Platform, Food in Science and Eye Tracking Device (ETD)] were conducted successfully including the experiments for the European Space Agency (ESA) and the Japanese Aerospace Exploration Agency. In addition to that repair on ESA's ETD was also successfully conducted by Dr Sheikh Muszaphar.

Soyuz TMA-10 landed back on earth on 21 October 2007 with the successful return of Dr Sheikh Muszaphar. The Soyuz capsule veered off course from its intended controlled re-entry through the earth's atmosphere which resulted in a very rough, high-G descent. The deviation was caused by a computer glitch that sent the Soyuz on a much steeper descent trajectory than planned. All the science samples were successfully recovered. This included the very fragile protein crystals that survived the landing and remained intact.

Ketua Pengarah ANGKASA telah menuntut semua sampel sains ini sebagai kargo penting dan telah menyerahkannya kepada Penyelidik Utama yang berkenaan pada hari itu juga. Sehingga kini, kesimpulan semua penyelidikan yang diperoleh sedang dianalisis oleh beberapa pasukan sains.

All the science samples were retrieved as urgent cargo by the Director General of ANGKASA and handed over to the PIs on the same day. The experimental results are currently being analysed by the respective science teams.





Penyelidikan sedang dijalankan oleh Dr Sheikh Muszaphar di ISS. ►
Experiments being carried out by Dr Sheikh Muszaphar in the ISS.



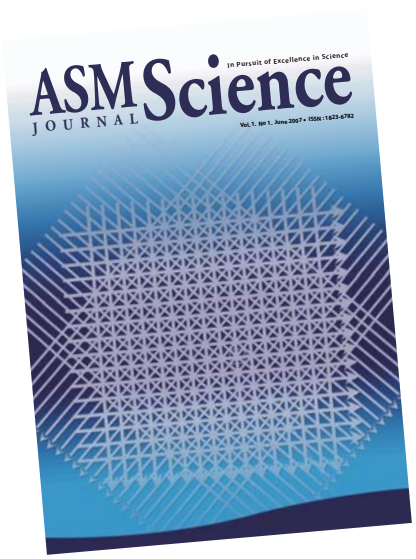
Penerbitan

Sepanjang tempoh lima tahun RMK9, peruntukan telah disalurkan kepada Akademi untuk memulakan program penerbitan termasuk jurnal saintifik bertaraf antarabangsa dan mendapat pengiktirafan pengamal sains. Justeru lahirlah *ASM Science Journal* (Jurnal Sains ASM) sebagai satu wadah penyebaran penemuan P&P, analisis polisi dan prespektif penyelidikan yang berwibawa. Isu pertama *ASM Sc. J.*, Vol 1, No.1, 2007 yang merangkumi pelbagai disiplin diterbitkan pada suku ketiga tahun 2007 di mana sebanyak 1700 naskah telah diedarkan kepada felo akademi, universiti-universiti terkemuka tempatan dan antarabangsa, organisasi P&P dan NGO tempatan, akademi sains dunia, penerbit dan pengedar dan penyedia pengkalan data sebagai naskah hadiah untuk publisiti serta menarik sumbangan artikel. Penerbitan isu bertema mengenai Antartika/Ekspedisi ke kutub dan fotonik masih dalam perancangan. Jurnal ini juga akan dipaparkan menerusi internet sebagai capaian terbuka. Enam puluh tiga penerbitan termasuk buku, monograf, prosiding, laporan penasihat, laporan kajian ASM termasuk 10 isu *ASM Sc. J.* telah disasar sepanjang tempoh lima tahun di bawah RMK9.

Prosiding berikut telah disunting dan dijadualkan akan diterbitkan pada suku pertama 2008: *Workshop on Integrated Tree Crops-Ruminant Systems: Assessment Of the Status and Opportinities in Malaysia* dan *Proceeding: National Workshop on Earthquakes and Tsunami Hazards and Risks*.

Kerja-kerja transkripsi dan menyunting syarahan-syarahan berikut telah dilakukan dan dijangka diterbitkan dalam tahun 2008: *Malaysia's Success—It is Possible; Reflection on Science, Technology and Innovation in the Muslim World* dan *Investing in the Future* (Oleh Nobel Laureate Prof Ahmed Zewail); *Global Warming and Climate Change* (oleh Nobel Laureate Prof S. Rowland); *Friends and Foes—The Unseen Bugs Who Share Our Planet* dan *Why Study Science?* (Oleh Nobel Laureate Dr Richard Roberts).

Sementara itu penerbitan seperti isu bulanan *Estidotmy* yang diterbitkan secara berterusan disasar dapat



Isu pertama ASM Science Journal.
First issue of ASM Science Journal.

Publications

Over the five-year period of the 9MP, the Academy has been given funding to initiate a publications programme including an internationally recognised and peer-reviewed primary scientific journal. Thus the *ASM Science Journal* was initiated to serve as a forum for disseminating significant R&D findings, policy analyses and research perspectives. The first issue of our multi-disciplinary *ASM Sc. J.*, Vol. 1, No. 1, 2007 was published during the third quarter of 2007 and 1700 copies were distributed to Fellows of the Academy, local and some prominent foreign universities, local R&D organizations and NGOs, world science academies, publishers, distributors, selected database providers, as complimentary copies to publicize the Journal and to attract article contributions. Plans are afoot to publish thematic issues on Antarctic/Polar expedition and photonics, and for the full text of the Journal to be made available on the internet as open access. Sixty-three publications, including books, monographs, proceedings, advisory reports, ASM study reports including 10 issues of the *ASM Sc. J.* have been targetted for the five-year period under the 9MP.

The following proceedings have been edited and are scheduled for publication in the first quarter of 2008: *Workshop on Integrated Tree Crops—Ruminant Systems: Assessment of Status and Opportunities in Malaysia* and *Proceedings: National Workshop on Earthquakes and Tsunami Hazards and Risks*.

Transcription and editing of the following lectures was carried out and they are expected to be published in 2008: *Malaysia's Success—It is Possible ; Reflections on Science, Technology and Innovation in the Muslim World* and *Investing in the Future* (by Nobel Laureate Prof Ahmad Zewail); *Global Warming and Climate Change* (by Nobel Laureate Prof S. Rowland); *Friends and Foes—The Unseen Bugs Who Share Our Planet* and *Why Study Science?* (by Nobel Laureate Dr Richard Roberts).

Estidotmy is an important monthly information capsule of science awareness for the public and students, especially

ASM PUBLICATIONS

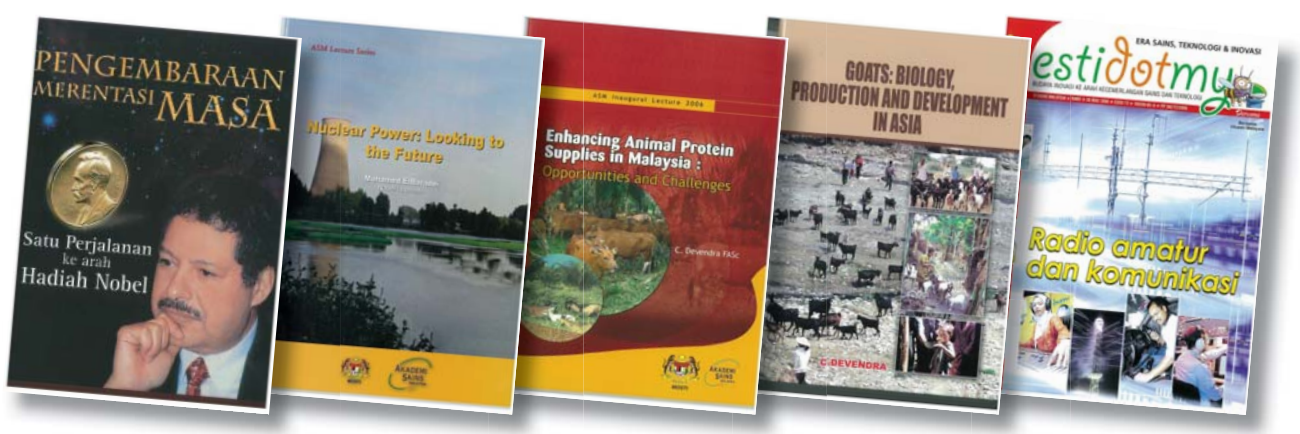
menyuntik lebih kesedaran dan minat dalam bidang sains di kalangan belia kita. Penerbitan-penerbitan ASM terus berusaha untuk mengikut aliran tren STI terkini baik di dalam mahu pun di luar Negara.

Bahan-bahan berikut telah diterbitkan sepanjang tahun ini:

the young. The publication continued to keep abreast with current and popular STI trends of the time, both within and without the nation.

The following items were published during the year:

1. *ASM Science Journal*, Vol. 1 (1), 2007 (pp. 87).
2. *2006 Annual Report*. (pp. 149.)
3. *Goats: Biology, Production and Development in Asia*. C. DEVENDRA (pp. 246).
4. *Pengembaraan Merentasi Masa: Satu Perjalanan ke Arah Hadiah Nobel*. AHMED ZEWAIL (pp. 348).
5. *Enhancing Animal Protein Supplies in Malaysia: Opportunities and Challenges*. C. DEVENDRA (pp. 29).
6. *Nuclear Power: Looking to the Future.* MOHAMED ELBARADEI (pp. 14).
7. *ASM Study Report— Changing Forest Landscape: Impact on Rural Health* (pp. 53).
8. *Proceedings: Seminar on Antarctic Research, University of Malaya, Kuala Lumpur*, 27–28 June 2005.
9. JOSTT, Vol 2, Nos. 1 &2, 2007. COSTAM and Academy of Sciences, Malaysia.
10. *ASM Newsletter*, 2nd and 3rd Quarter 2007 (pp. 8).
11. *Estidotmy : Teknologi Satelit*, Vol. 59, 2007 (pp. 36).
12. *Estidotmy : Biodiversiti dan Konservasi*, Vol. 60, 2007 (pp. 36).
13. *Estidotmy: Teknologi Makanan*, Vol. 61, 2007 (pp. 36).
14. *Estidotmy: Cahaya dan Optik*., Vol. 62, 2007 (pp. 36).
15. *Estidotmy: Sains Bunyi dan Akustik*, Vol. 63, 2007 (pp. 36).
16. *Estidotmy: Sains Sukan*, Vol. 64, 2007 (pp. 36).
17. *Estidotmy: Sains Sekitaran*, Vol. 65, 2007 (pp. 36).
18. *Estidotmy:50 Tahun Gemilang Sains, Teknologi dan Inovasi*, Vol. 66, 2007 (pp. 36).
19. *Estidotmy: Program Angkasawan Negara*, Vol. 67, 2007 (pp. 36).
20. *Estidotmy: Kreativiti Dunia Animasi*, Vol. 68, 2007 (pp. 36).
21. *Estidotmy: Inovasi*, Vol. 69, 2007 (pp. 36.)
22. *Estidotmy: Keselamatan Siber*, Vol. 70, 2007 (pp. 36).



AKRONIM
ACRONYMS

AASA	Persatuan Akademi Sains di Asia Association of Academies of Sciences in Asia
ANF	Forum Nano Asia Asia Nano Forum
AMREC	Pusat Penyelidikan Bahan Termaju Advanced Materials Research Centre
ASM	Akademi Sains Malaysia Academy of Sciences Malaysia
CALTECH	Institut Teknologi California California Institute of Technology
CCOP	Jawatankuasa Penyelaras Program Geosains Asia Timur dan Asia Tenggara Coordinating Committee for Geoscience Programmes in East and Southeast Asia
CNSI	Institut Nanosistem California California Nanosystems Institute
COSTIS	Konsortium Sains, Teknologi dan Inovasi untuk Selatan Consortium of Science, Technology and Innovation for the South
FASc	Felo Akademi Sains Malaysia Fellow of Academy of Sciences Malaysia
FASAS	Persekutuan Akademi dan Persatuan Sains Asia Federation of Asian Scientific Academies and Societies
IAC	Majlis antara Akademi Inter Academy Council
IAMP	Panel Perubatan antara Akademi Inter Academy Medical Panel
IAP	Program Air Panel antara Akademi Inter Academy Panel Water Program
ICSU	Majlis Antarabangsa bagi Sains International Council for Science
ITCRS	Sistem Bersepadu Tanaman Sawit-Haiwan Ruminan Integrated Tree Crops-Ruminant Production Systems
KRF	Yayasan Penyelidikan Korea Korean Research Foundation
NGO	Badan Bukan Kerajaan Non-Governmental Organisations
MARDI	Institut Penyelidikan dan Kemajuan Pertanian Malaysia Malaysian Agricultural Research and Development Institute
MARP	Program Penyelidikan Antartika Malaysia Malaysian Antarctica Research Programme
MASTEC	Konvensyen Sains dan Teknologi Malaysia Malaysian Science and Technology Convention
MISA	Malaysian International Seminar on Antarctica Seminar Antarabangsa Antartika Malaysia
MOA	Kementerian Pertanian dan Industri Asas Tani Ministry of Agriculture and Agro-based Industries
MOSTI	Kementerian Sains, Teknologi dan Inovasi Ministry of Science, Technology and Innovation

ACRONYMS

NAHRIM	Institut Penyelidikan Hidraulik Kebangsaan Malaysia National Hydraulic Research Institute of Malaysia
NASIC	Rangkaian Akademi Sains Malaysia dalam Negara – negara Islam Network of Academies of Sciences in Islamic Countries
NIC	Majlis Inovasi Kebangsaan National Innovation Council
NICE	Pameran dan Persidangan Inovasi Kebangsaan National Innovation Conference and Exhibition
NSF	Yayasan Sains Kebangsaan National Science Foundation
OIC	Organisasi Negara-negara Islam Organisation of Islamic Conference
P&P R&D	Penyelidikan dan Pembangunan Research and Development
RMK9 9MP	Rancangan Malaysia Kesembilan Ninth Malaysia Plan
RNAi	Gangguan Asid Ribo Nukleik Ribonucleic Acid interference
SAGA	Pembiayaan Penyelidikan Sains Saintifik Lanjutan Scientific Advancement Fund Allocation
SARS	Sindrom Pernafasan Akut Severe Acute Respiratory Syndrome
SCA	Majlis Sains untuk Asia Science Council for Asia
SIRIM	Institut Standard dan Penyelidikan Perindustrian Malaysia Standard and Industrial Research Institute of Malaysia
STI	Sains, Teknologi dan Inovasi Science, Technology and Innovation
S&T	Sains dan Teknologi Science and Technology
UCLA	Univerisiti California, Los Angeles University of California, Los Angeles
UIA	Universiti Islam Antarabangsa International Islamic University
UKM	Universiti Kebangsaan Malaysia University Kebangsaan Malaysia
UM	Universiti Malaya University of Malaya
UNESCO	Bangsa-Bangsa Bersatu Bagi Pendidikan, Organisasi Saintifik dan Kebudayaan United Nations Educational, Scientific and Cultural Organization
UPM	Universiti Putra Malaysia University of Putra Malaysia
UTM	Universiti Teknologi Malaysia University of Technology Malaysia

Penyata Kewangan | Financial Reports

SIJIL KETUA AUDIT NEGARA
MENGENAI PENYATA KEWANGAN
AKADEMI SAINS MALAYSIA
BAGI TAHUN BERAKHIR 31 DISEMBER 2007

Penyata kewangan Akademi Sains Malaysia bagi tahun berakhir 31 Disember 2007 telah diaudit oleh wakil saya. Pihak pengurusan bertanggungjawab terhadap penyata kewangan ini. Tanggungjawab saya adalah mengaudit dan memberi pendapat terhadap penyata kewangan tersebut.

2. Pengauditan telah dilaksanakan mengikut Akta Audit 1957 dan berpandukan piawaian pengauditan yang diluluskan. Piawaian tersebut menghendaki pengauditan dirancang dan dilaksanakan untuk mendapat kepastian yang munasabah sama ada penyata kewangan adalah bebas daripada kesilapan atau ketinggalan yang ketara. Pengauditan ini termasuk memeriksa rekod secara semak uji, menyemak bukti yang menyokong angka dan memastikan pendedahan yang mencukupi dalam penyata kewangan. Penilaian juga dibuat terhadap 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 2007, hasil operasi dan aliran tunainya untuk tahun tersebut berdasarkan piawaian perakaunan yang diluluskan.

(HAMDAN BIN AHMAD)
b.p. KETUA AUDIT NEGARA
MALAYSIA

PUTRAJAYA
10 APRIL 2008

Academy Of Sciences Malaysia

PENYATA PRESIDEN DAN BENDAHARI KEHORMAT
AKADEMI SAINS MALAYSIA

Kami, TAN SRI DATUK DR. YUSOF BIN BASIRAN F.A.Sc dan DATUK IR. DR. HJ. AHMAD ZAIDEE BIN LAIDIN 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 berserta dengan nota-nota didalamnya adalah disediakan untuk merujuk pandangan yang benar dan saksama berkenaan :-

(a) Lembaran Imbangan pada 31 Disember 2007 dan Akaun Pendapatan dan Perbelanjaan untuk tahun berakhir itu dan

(b) Penyata Aliran Tunai untuk tahun berakhir pada 31 Disember 2007

(c) Penyata Perubahan Dana

(d) Nota – Nota Akaun

Bagi pihak Majlis

Tan Sri Datuk Dr. Yusof Bin Basiran
F.A.Sc
Presiden
Akademi Sains Malaysia

Bagi pihak Majlis

Datuk Ir. Dr. Hj. Ahmad Zaidee
Bin Laidin F.A.Sc
Bendahari Kehormat
Akademi Sains Malaysia

KUALA LUMPUR, MALAYSIA

Tarikh : 25 FEB 2008

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

AKADEMI SAINS MALAYSIA Academy Of Sciences Malaysia

PENGAKUAN OLEH PENGARAH EKSEKUTIF KE ATAS PENGURUSAN KEWANGAN AKADEMI SAINS MALAYSIA

Saya, DATO' DR SAMSUDIN BIN TUGIMAN, Pegawai Utama yang bertanggungjawab ke atas pengurusan kewangan AKADEMI SAINS MALAYSIA, dengan ikhlasnya mengakui bahawa Penyata Kewangan yang dikemukakan berserta dengan nota-nota didalamnya, mengikut sebaik-baik pengetahuan dan kepercayaan saya adalah betul, dan saya membuat ikrar ini dengan sebenarnya mempercayai bahawa ianya adalah benar dan atas kehendak-kehendak Akta Akuan Berkanun 1960

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

Dato' Dr. Samsudin Bin Tugiman

Pada : 25 FEB 2008

Di hadapan saya,

PESURUHJAYA SUMPAH
W 092
ROBERT LIM HOCK KEE
MALAYSIA

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

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

AKADEMI SAINS MALAYSIA

LEMBARAN IMBANGAN PADA 31 DISEMBER 2007

	Nota	2007 RM	2006 RM
HARTANAH, LOJI DAN PERALATAN	3	2,577,457	2,944,319
PELABURAN	4	700,000	-
ASET SEMASA			
Lain-lain Penghutang	5	2,050,889	7,079,919
Simpanan Tetap	6	13,495,785	20,564,997
Wang Tunai Dan Baki Di Bank	7	3,416,533	2,735,927
		18,963,207	30,380,843
LIABILITI SEMASA			
Lain-lain Pemiutang	8	1,172,021	898,060
		1,172,021	898,060
ASET SEMASA BERSIH		17,791,186	29,482,783
		21,068,643	32,427,102
DIBIAYAI OLEH:			
Kumpulan Wang:			
Kumpulan Wang Pengurusan	9	8,722,477	8,471,780
Kumpulan Wang Amanah	10	50,000	50,000
Kumpulan Wang Pembangunan	11	2,128,501	2,245,407
Kumpulan Wang Projek	12	4,506,469	5,855,545
Liabiliti Bukan Semasa:			
Pendapatan Belum Iktiraf	13	5,661,196	15,804,370
		21,068,643	32,427,102

Nota di muka surat 7 hingga 14 merupakan sebahagian asas Penyata Kewangan ini.

3

AKADEMI SAINS MALAYSIA

PENYATA PENDAPATAN
BAGI TAHUN BERAKHIR 31 DISEMBER 2007

	Nota	2007 RM	2006 RM
PENDAPATAN			
Sumbangan (Geran Program)	14	24,844,367	9,046,887
Sumbangan (Geran Operasi)		2,358,505	2,000,000
Pendapatan Faedah	15	749,702	566,528
Kutipan majlis makan malam		17,849	24,300
Pelbagai penerimaan	16	920,102	633,949
Keuntungan penjualan aset		-	11,400
		28,890,525	12,283,064
PERBELANJAAN			
Emolumen		900,265	938,269
Perkhidmatan & bekalan		773,608	816,109
Penyelengaraan dan alat kelengkapan pejabat		26,749	42,527
Pemberian dan kenaan bayaran tetap		901,657	51,473
Perbelanjaan-perbelanjaan lain		88,575	35,241
Susut nilai harta tetap	3	462,733	443,760
Kerugian Pelaburan	4	-	388,422
Majlis makan malam		53,818	27,507
Perbelanjaan mengendalikan program sains	14	25,432,423	9,101,754
		28,639,828	11,845,062
Lebihan pendapatan		250,697	438,002

Nota di muka surat 7 hingga 14 merupakan sebahagian asas Penyata Kewangan ini.

4

AKADEMI SAINS MALAYSIA

PENYATA ALIRAN TUNAI
BAGI TAHUN BERAKHIR 31 DISEMBER 2007

	2007 RM	2006 RM
ALIRAN TUNAI DARI AKTIVITI OPERASI		
Lebihan Pendapatan Atas Perbelanjaan	250,697	438,002
Pelarasan:		
Susutnilai	462,733	443,760
Kerugian Pelaburan	-	388,422
Faedah dari Deposit Jangka Pendek, Simpanan Tetap & Pelaburan	(749,702)	(566,528)
Pelarasan ke atas Kumpulan Wang Pengurusan	-	103,888
Lebihan pendapatan dari operasi sebelum perubahan modal kerja	(36,272)	807,544
Kurangan/(lebihan) Penghutang	5,029,030	(6,025,077)
Lebihan Pemiutang	273,961	71,015
Tunai bersih (ke)/dari Aktiviti Operasi	**5,266,719**	**(5,146,518)**
ALIRAN TUNAI DARI AKTIVITI PELABURAN		
Pembelian Hartanah, Loji dan Peralatan	(95,871)	(1,114,957)
Faedah Diterima	749,702	566,528
Penjualan Unit Saham Amanah	-	3,610,756
Pelaburan	(700,000)	
Tunai bersih (ke)/dari Aktiviti Pelaburan	**(46,169)**	**3,062,327**
ALIRAN TUNAI DARI AKTIVITI PEMBIAYAAN		
Kumpulan Wang Amanah	-	(10,000)
Kumpulan Wang Pembangunan	(116,906)	(140,737)
Kumpulan Wang Projek	(1,349,076)	(6,063,125)
Pendapatan Belum Iktiraf	(10,143,174)	14,191,200
Tunai bersih digunakan untuk Aktiviti Pembiayaan	**(11,609,156)**	**7,977,338**
PENAMBAHAN BAKI TUNAI DAN TUNAI SETARA	**(6,388,606)**	**5,893,147**
TUNAI DAN TUNAI SETARA PADA AWAL TAHUN KEWANGAN	**23,300,924**	**17,407,777**
TUNAI DAN TUNAI SETARA PADA AKHIR TAHUN KEWANGAN	**16,912,318**	**23,300,924**
TUNAI DAN KESETARAAN TUNAI		
Simpanan Tetap	13,495,785	20,564,997
Wang Tunai dan Baki di Bank	3,416,533	2,735,927
	16,912,318	**23,300,924**

Nota di muka surat 7 hingga 14 merupakan sebahagian asas Penyata Kewangan ini.

5

AKADEMI SAINS MALAYSIA

PENYATA PERUBAHAN EKUITI
BAGI TAHUN BERAKHIR 31 DISEMBER 2007

	Kumpulan Wang Pengurusan RM	Kumpulan Wang Amanah RM	Kumpulan Wang Pembangunan RM	Kumpulan Wang Projek RM	Jumlah RM
Baki pada 01 Januari 2006	7,980,511	60,000	2,386,144	11,918,670	22,345,325
Terimaan dalam tahun 2006	-	120,000	-	5,842,837	5,962,837
Lebihan pendapatan atas perbelanjaan	438,002	-	-	-	438,002
Perbelanjaan Bagi Tahun 2006	-	(130,000)	(140,737)	(12,144,311)	(12,415,048)
Pelarasan	103,888	-	-	238,349	342,237
Baki pada 31 Disember 2006 seperti yang dilaporkan	8,522,401	50,000	2,245,407	5,855,545	16,673,353
Pelarasan - Pendapatan belum iktiraf	(50,621)	-	-	-	(50,621)
Baki pada 31 Disember 2006 dinyatakan semula	8,471,780	50,000	2,245,407	5,855,545	16,622,732
Terimaan dalam tahun 2007	-	-	-	4,850,000	4,850,000
Lebihan pendapatan atas perbelanjaan	250,697	-	-	-	250,697
Perbelanjaan dalam tahun 2007	-	-	(116,906)	(6,199,076)	(6,315,982)
Baki pada 31 Disember 2007	**8,722,477**	**50,000**	**2,128,501**	**4,506,469**	**15,407,447**

Nota di muka surat 7 hingga 14 merupakan sebahagian asas Penyata Kewangan ini.

AKADEMI SAINS MALAYSIA

NOTA KEPADA PENYATA KEWANGAN BAGI TAHUN BERAKHIR 31 DISEMBER 2007

1 AKTIVITI UTAMA

Objektif utama Akademi Sains Malaysia (ASM) adalah untuk mencapai, menggalak dan meningkatkan kecemerlangan dalam bidang sains, kejuruteraan dan teknologi khusus untuk kemajuan dan pembangunan negara serta untuk kebaikan manusia sejagat.

2 DASAR-DASAR PERAKAUNAN

a) Asas Perakaunan

Penyata kewangan telah disediakan mengikut kelaziman kos sejarah dan mengikut piawaian perakaunan yang di luluskan.

b) Hartanah, Loji Dan Peralatan Dan Susut Nilai

Hartanah, loji dan peralatan dinyatakan pada kos setelah ditolak susut nilai terkumpul.

Susut nilai bagi hartanah, loji dan peralatan dikira berasaskan kaedah garis lurus di atas kos di sepanjang tempoh hayat kegunaan aset tersebut pada kadar yang berikut:-

Perkakas pejabat	20%
Komputer	20%
Kenderaan bermotor	20%
Pengubahsuaian	10%

Susut nilai penuh dikenakan dalam tahun pembelian bagi hartanah, loji dan peralatan. Baki bersih setiap hartanah, loji dan peralatan hendaklah tidak kurang daripada RM1.00.

c) Penjejasan Nilai Hartanah, Loji Dan Peralatan

Nilai buku bersih hartanah, loji dan peralatan ASM telah dianalisis pada tarikh imbangan disediakan untuk menentukan sama ada terdapat tanda-tanda berlakunya penjejasan nilai hartanah, loji dan peralatan. Sekiranya wujud tanda-tanda kerosakan nilai hartanah, loji dan peralatan yang boleh diperoleh semula didapati kurang daripada nilai buku bersih, maka nilai buku bersih hartanah, loji dan peralatan tersebut akan diturunkan nilainya kepada nilai jumlah hartanah, loji dan peralatan yang boleh diperoleh semula.

Amaun tersebut (yang dikenali sebagai penjejasan nilai hartanah, loji dan peralatan) akan dicatatkan sebagai perbelanjaan dan direkodkan di dalam penyata pendapatan dan perbelanjaan tahun berkenaan.

d) Pengiktirafan Pendapatan Dan Pendapatan Tertunda

i) Pendapatan Faedah Dan Pendapatan Dari Pelaburan

Pendapatan faedah dari simpanan dan deposit konvensional serta pendapatan dari pelaburan diiktiraf mengikut asas akruan.

ii) Pengiktirafan Geran/Sumbangan

Peruntukan atau Geran daripada badan-badan kerajaan dan bukan kerajaan diiktiraf berasaskan asas akruan.

Peruntukan yang diterima bagi program/projek yang merangkumi tempoh kurang daripada setahun diiktiraf sebagai hasil dalam tahun berkenaan. Bagi penerimaan untuk mengendalikan program/projek yang melebihi satu tahun, terimaan akan dimasukkan ke dalam Kumpulan Wang Projek berkenaan dan lebihan penerimaan atas perbelanjaan akan diiktiraf sebagai pendapatan bagi tahun penutupan program/projek apabila habis tempoh atau hayat program/projek tersebut. Sebaliknya jika terdapat lebihan perbelanjaan atas penerimaan ianya akan diiktiraf sebagai perbelanjaan ASM.

Geran yang diterima dari Kerajaan Malaysia untuk belanja mengurus diambil kira dalam Penyata Pendapatan Kumpulan Wang Pengurusan.

Bagi geran pemberian kerajaan untuk projek pembangunan ianya diiktiraf sebagai geran modal tertunda dan akan dilunaskan mengikut belanja susut nilai projek yang telah disiapkan.

e) Instrumen Kewangan

Instrumen kewangan dinyatakan dalam lembaran imbangan termasuk simpanan tetap, baki tunai dan bank, belum terima dan belum bayar. Kaedah pengiktirafan instrumen kewangan yang diterima pakai telah didedahkan dalam polisi perakaunan penyata kewangan secara berasingan.

i) Penghutang

Penghutang dinyatakan pada nilai yang dijangka boleh direalisasi. Hutang lapuk dilupuskan apabila ia dikenal pasti. Anggaran dibuat bagi hutang ragu berasaskan kajian semula semua jumlah tunggakan pada tarikh lembaran imbangan.

ii) Pemiutang

Pemiutang dinyatakan pada kos iaitu nilai saksama bayaran dan perkhidmatan yang telah diterima.

f) Pelaburan

Pelaburan telah ditunjukkan mengikut kos selepas peruntukan rosot nilai pelaburan diambil kira.

g) Peruntukan Hutang Ragu

Hutang ragu diperuntukkan bagi hutang yang tidak terbayar melebihi tempoh dua tahun.

h) Tunai Dan Kesetaraan Tunai

Tunai dan kesetaraan tunai merangkumi tunai di tangan, baki di bank dan simpanan tetap.

3 HARTANAH, LOJI DAN PERALATAN

	Perkakas Pejabat RM	Komputer RM	Kenderaan Bermotor RM	Pengubah-suaian RM	2007 RM	2006 RM
KOS						
Pada 1 Januari 2007	145,424	341,132	360,091	3,649,637	4,496,284	3,540,954
Pelarasan	15,700	-	-	(15,700)	-	-
Tambahan	36,760	34,861	-	24,250	95,871	1,114,957
Pelupusan	-	-	-	-	-	(159,627)
Pada 31 Disember 2007	197,884	375,993	360,091	3,658,187	4,592,155	4,496,284
SUSUTNILAI TERKUMPUL						
Pada 1 Januari 2007	98,205	272,263	185,775	995,722	1,551,965	1,267,832
Pelarasan	3,140	-	-	(1,570)	1,570	-
Susut nilai	25,259	26,240	43,845	365,819	461,163	443,760
Pelupusan	-	-	-	-	-	(159,627)
Pada 31 Disember 2007	126,604	298,503	229,620	1,359,971	2,014,698	1,551,965
NILAI BUKU BERSIH						
31 Disember 2007	71,280	77,490	130,471	2,298,216	2,577,457	-
31 Disember 2006	47,219	68,869	174,316	2,653,915	-	2,944,319
Susut nilai pada tahun berakhir 31 Disember 2006	14,754	20,200	43,842	364,964	-	443,760

8

4 PELABURAN

	2007 RM	2006 RM
Unit Saham Amanah	700,000	4,199,178
Peruntukan Rosot nilai Pelaburan	-	200,000
	700,000	3,999,178
Hasil Jualan	-	3,610,756
Kerugian Jualan	-	388,422
	-	-
Harga Pasaran	-	-

Pada tahun 2007, sejumlah RM700,000.00 telah dilaburkan di dalam unit saham amanah seperti berikut:-

- *ING Baraka Capital Protected – RM500,000.00*
- *Dynamic Asia Capital Protected (DACP) – RM100,000.00*
- *Maaster Capital Guaranteed Plan (MCGP) Asia – RM100,000.00*

Kesemua unit saham amanah yang dilaburkan adalah merupakan unit saham amanah yang mempunyai tarikh matang selama 3 tahun. Ini bermakna dividen hanya akan diterima selepas 3 tahun (2010) dan kesemua unit saham amanah ini adalah *capital protected*.

5 LAIN-LAIN PENGHUTANG

	2007 RM	2006 RM
Pendahuluan	86,615	73,741
Faedah Terakru	-	3,179
Penghutang	1,798,834	5,611,811
Pendahuluan ASM kepada Program	165,440	403,440
Perbelanjaan Terdahulu	-	987,748
	2,050,889	7,079,919

6 SIMPANAN TETAP

Deposit simpanan dalam institusi kewangan berlesen terdiri daripada:-

	2007 RM	2006 RM
Simpanan Tetap	7,210,785	4,529,997
Simpanan Tetap - ASM	50,000	50,000
Simpanan Tetap - Antartika	1,250,000	500,000
Simpanan Tetap - *Nobel Laureate*	2,250,000	1,750,000
Simpanan Tetap - SAGA	700,000	1,700,000
Simpanan Tetap - Tsunami	300,000	300,000
Simpanan Tetap - MTCP	85,000	85,000
Simpanan Tetap - IAS	150,000	150,000
Simpanan Tetap - Pameran Islam	1,500,000	11,500,000
	13,495,785	20,564,997

7 WANG TUNAI DAN BAKI DI BANK

	2007 RM	2006 RM
Bank - Operasi ASM	2,180,848	562,258
Bank - *Nobel Laureate/SAGA*	1,019,304	953,800
Bank - NSTRC	31,450	345,186
Bank – ICSU	64,734	190,093
MBB - Antartika	118,197	682,590
Tunai Dalam Tangan	2,000	2,000
	3,416,533	2,735,927

8 LAIN-LAIN PEMIUTANG

	2007 RM	2006 RM
Pemiutang Am	1,163,371	815,762
Prabayar	-	(1,489)
Cek belum ditunaikan	1,999	76,999
Peruntukan Perkhidmatan Audit & Akaun	6,000	5,592
KWSP	651	1,196
	1,172,021	898,060

9 KUMPULAN WANG PENGURUSAN

Kumpulan Wang Pengurusan adalah seperti berikut:-

	2007 RM	2006 RM
Baki pada 1 Januari	8,471,780	7,980,511
Lebihan pendapatan atas perbelanjaan	250,697	438,002
Pelarasan	-	103,888
	8,722,477	8,522,401
Pelarasan	-	(50,621)
Baki pada 31 Disember	8,722,477	8,471,780

10 KUMPULAN WANG AMANAH

Kumpulan Wang Amanah adalah seperti berikut:-

	2007 RM	2006 RM
Baki pada 1 Januari	50,000	60,000
Penerimaan tahun semasa	-	120,000
Perbelanjaan tahun semasa	-	(130,000)
Baki pada 31 Disember	50,000	50,000

10

11 KUMPULAN WANG PEMBANGUNAN

Kumpulan Wang Pembangunan adalah seperti berikut:-

	2007 RM	2006 RM
Baki pada 1 Januari	2,245,407	2,386,144
Penerimaan tahun semasa	-	-
Perbelanjaan tahun semasa	(116,906)	(140,737)
Baki pada 31 Disember	2,128,501	2,245,407

Kumpulan Wang Pembangunan ini mewakili kos pengubahsuaian bangunan. Peruntukan ini diperoleh daripada Kementerian Sains, Teknologi dan Inovasi (MOSTI).

12 KUMPULAN WANG PROJEK

Kumpulan Wang Projek adalah seperti berikut:-

	2007 RM	2006 RM
Baki pada 1 Januari	5,855,545	11,918,670
Penerimaan tahun semasa	4,850,000	5,842,837
Perbelanjaan tahun semasa	(6,199,076)	(12,144,311)
Pelarasan	-	238,349
Baki pada 31 Disember	4,506,469	5,855,545

Projek yang termasuk dalam Kumpulan Wang Projek adalah Projek-projek Rancangan Malaysia Ke Sembilan (RMK-9) bagi tahun 2007 dan Projek Rancangan Malaysia Ke Lapan (RMK-8) – SAGA

	2007 RM	2006 RM
Program Penyelidikan Antartika Kebangsaan dan Program Antarabangsa	701,337	584,128
Program *Nobel Laureate* Kebangsaan dan Ekspedisi Saintifik	1,288,947	1,301,031
Scientific Advancement Grant Allocation (SAGA)	975,076	2,378,735
Laporan Kajian Strategik dan Pandangan Pakar Dalam Isu-Isu STI	332,633	200,000
Program Penilaian Pemeringkatan Penyelidikan	6,360	498,844
Penerbitan Saintifik	132,263	227,504
Program Pendidikan Sains	784,604	387,142
Kuiz Sains Nasional	(150,429)	(19,208)
Program Latihan Pengurusan S&T	435,678	297,369
Baki pada 31 Disember	4,506,469	5,855,545

13 PENDAPATAN BELUM IKTIRAF

Program dalam pelaksanaan adalah seperti berikut:-

	2007 RM	2006 RM
Pameran Islam	1,455,000	15,000,000
Brain Gain	1,731,521	581,079
Program Angkasawan	27,748	108,902
Kuiz Sains Nasional	-	12,586
Kuiz Sains Dumex	-	3,843
FASAS	-	6,351
ASM – Intel Program	-	16,539
Ranjeet Bhagwan Singh	-	24,449
Tsunami	522,191	-
ICSU ROAP	110,407	-
Inno Fund	1,337,341	-
Science Fund	201,209	-
Angkasa (HCD)	275,779	-
	5,661,196	15,753,749

Program dalam pelaksanaan merupakan pendapatan untuk projek yang bukan di bawah projek Rancangan Malaysia Ke Sembilan (RMK-9). Perbelanjaan di bawah projek ini meliputi tempoh masa melebihi satu tempoh perakaunan.

14 PENDAPATAN DAN PERBELANJAAN PROGRAM SAINS

Pendapatan	2007 RM	2006 RM
Program Kecemerlangan Sains	220,988	200,000
Program Antarabangsa	375,781	728,029
Program Kesedaran Sains	-	2,978,430
Nasihat Kepada Kerajaan	1,488,916	2,153,800
Penerbitan	2,758,430	-
Program-program Lain	20,000,252	2,986,628
	24,844,367	9,046,887

Perbelanjaan	2007 RM	2006 RM
Program Kecemerlangan Sains	129,547	200,000
Program Antarabangsa	511,278	694,949
Program Kesedaran Sains	28,429	3,148,200
Nasihat Kepada Kerajaan	1,891,873	2,065,117
Penerbitan	2,587,718	23,284
Program-program Lain	20,283,578	2,970,204
	25,432,423	9,101,754

15 PENDAPATAN FAEDAH

	2007 RM	2006 RM
Faedah Deposit Jangka Pendek	23,416	37,566
Faedah Simpanan Tetap	726,286	375,886
Dividen Pelaburan	-	153,076
	749,702	566,528

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16 PELBAGAI PENERIMAAN

	2007 RM	2006 RM
Pelbagai Penerimaan – Jualan CD, buku dan lain-lain	177,637	909
Jualan Cenderamata	-	4,078
Yuran Latihan & Seminar	257,243	126,339
Penyelesaian Cek Terbatal	-	80,198
Caj Pengurusan Program	485,222	422,425
	920,102	633,949

17 KOMITMEN MODAL

	2007 RM	2006 RM
Baki pada 31 Disember	103,825	376,746
	103,825	376,746

18 PERCUKAIAN

ASM sedang dalam proses pengemaskinian rekod dengan LHDN melalui agen cukai bertauliah.

19 INSTRUMEN KEWANGAN

a. Objektif Dan Polisi Pengurusan Risiko Kewangan

Polisi pengurusan risiko kewangan ASM adalah untuk memastikan sumber-sumber kewangan yang mencukupi bagi pembangunan operasi ASM sementara menguruskan risiko-risiko kewangannya, termasuk risiko kredit, risiko kadar faedah, risiko pinjaman tidak berbayar, risiko kecairan dan aliran tunai.

b. Risiko Kredit

Risiko kredit ASM adalah daripada akaun-akaun belum terima. Akaun-akaun ini dipantau dari semasa ke semasa melalui prosedur dalaman yang sedia ada dan tindakan akan diambil terhadap hutang-hutang tertunggak.

c. Risiko Kadar Faedah

ASM menyelenggarakan satu had tunai dan simpanan tetap untuk memenuhi keperluan modal kerja. Risiko ini wujud akibat kadar turun naik kadar faedah di pasaran.

d. Risiko Kecairan Dan Aliran Tunai

ASM menguruskan dengan teliti urusan keluar masuk tunai dan juga urusan pengutipan semula hutang-hutang pelanggan yang mencapai tempoh matang bagi menjaga kecairan dan aliran tunainya.

20 MANFAAT KAKITANGAN ASM

a. Manfaat jangka pendek

Upah, gaji, elaun dan sumbangan keselamatan sosial diiktiraf sebagai perbelanjaan pada tahun di mana perkhidmatan yang diberikan oleh kakitangan ASM. Pampasan ketidakhadiran terkumpul jangka pendek seperti cuti tahunan berbayar diiktiraf bila perkhidmatan yang diberi oleh kakitangan ASM akan menambahkan hak pampasan ketidakhadiran akan datang dan pampasan ketidakhadiran tidak terkumpul jangka pendek seperti cuti sakit diiktiraf bila ketidakhadiran berlaku.

b. Pelan caruman wajib

ASM mencarum kepada Kumpulan Wang Simpanan Pekerja dan Kumpulan Wang Pencen Kerajaan bagi kakitangannya mengikut skim yang dipilih mereka. Caruman tersebut diiktiraf sebagai perbelanjaan dalam penyata pendapatan apabila ia berlaku.

21 MAKLUMAN KAKITANGAN

Jumlah kakitangan ASM pada 31 Disember 2007 adalah seramai 34 orang (31.12.2006: 28 orang).

22 ANGKA PERBANDINGAN

Angka-angka perbandingan bagi tahun lepas telah disusun semula di mana perlu supaya selaras dengan angka yang dibentangkan tahun ini.

23 PEMBERIAN KUASA UNTUK PENGISUAN

Penyata kewangan Akademi bagi tahun kewangan berakhir 31 Disember 2007 diberi kelulusan berdasarkan resolusi Majlis Akademi pada 26 April 2008.

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AKADEMI SAINS MALAYSIA
902-4 Jalan Tun Ismail,
50480 Kuala Lumpur
Tel: 03 - 2694 9898
Fax: 03 - 2694 5858

www.akademisains.gov.my

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