

Content

Science News from Chinese Media During the Period of August 2005

Collected and Compiled by the Helmholtz Beijing Office

Overview	5
1 Science News	6
1.1 Energy	6
China's fuel cell technology advanced in the world.....	6
300 million kw water energy in China ready for exploitation.....	6
Fresh progress in hydrogen source system for large power fuel cells.....	6
IAEA calls for more attention on nuclear safety	7
China to build 1st offshore wind power plant	8
1.2 Earth and Environment	8
Expert suggests developing "green oilfields"	8
Meteorologists meet in Beijing for a global conference	9
Scientists leave to study E. African Rift Valley.....	9
Chinese scientists leave for Baikal expedition.....	11
Prof. Long Chunlin receives Harshberger Medal.....	11
CAS research station at Mt Qomolangma under smooth construction	12
International sturgeon symposium to be held in China in 2009.....	13
"Roof of world" Tibet moving northeast.....	13
Weather radar network to cover whole China by 2010	14
Electronic recycling center to be built in Tianjin	14
A state key lab of soil science passed acceptance check.....	15
CAS, Harvard botanists complete second biodiversity survey in Hengduan Mountains	15
Versatile plant offers solutions to erosion issue	16
Scientists prepare 22nd expedition to Antarctica	17
China to begin the largest ecological project	18
1.3 Health.....	18
"Intelligent capsule" to offer painless gastroscop.....	18
Garlic ingredient to fight cancer.....	19
Hospital makes progress in neural stem cell transplantation.....	19
China discovers two new human genes.....	19
New hepatitis B vaccine ready to enter market.....	20
SARS vaccine approved for human trials	20
China strengthens animal quarantine	21

Most Chinese have periodontal disease	21
SIBS sets up a committee to deal with ethical issues from life sciences.....	21
China creates its 1st cloned pig	22
China's first virtual man dataset	22
China to regulate organ transplants	23
China, US launch AIDS prevention program	23
Prisoners to receive compulsory HIV tests	24
CAS researchers join hands with world peers for finished rice genome	25
Chromosome abnormality discovered.....	26
Ultrasonic scissors utilized for tongue tumor resection	27
New technology developed to test pig-borne disease	27
Scientists find possible medicine for SARS.....	27
1.4 Key Technologies	28
China becomes 3rd largest chip designer	28
High Performance Computing Committee of China Computer Federation founded	28
FPD Technology and Industrial Development Strategy Seminar convened.....	29
China makes breakthrough in anti-virus technology.....	29
Prof. Xiong Fanlun receives IFAC fellowship	30
E-brain centre to protect Net data	31
1.5 Structure of Matter.....	31
China develops high-power 457-nm blue laser	31
Fibonacci series on microstructures	32
1.6 Transport and Space	33
CAS researchers develop advanced driving systems for electric buses in Beijing	33
China launches 21st science satellite by Long March Rocket	33
China ambitious for more in aerospace.....	34
China's fastest train fulfils passenger transportation mission.....	35
China to launch lunar probe satellite in 2007.....	35
China's first UAV remote sensing system	35
Preparatory meeting for the 14th ITS World Congress held	36
First unmanned lunar mission set for 2007	37
Three technological difficulties for lunar probe	37
China's fastest train starts operation	38
China to send pig sperm to space	38
Jupiter's moon more likely to harbor life	39
New height of world's railway born in Tibet.....	40
COSTIND set up China's lunar exploration project center	40
Satellite returns home.....	41
China launches 22nd experimental satellite	41
2 News from Universities	42

Tsinghua University offers needy students financial aids	42
China National Grid Hefei Center nestled in University of China Science and Technology.....	42
Xiamen University and US-based SUN to co-build joint lab.....	42
Debate over assessment of China's educational system reheated.....	43
3 Innovation Management.....	44
Projects under 2005 State Key New Product Programme approved	44
Projects under 2005 Extension Program for Key S&T Achievements approved	44
Projects under 2005 Program on Trade Promotion through S&T approved	44
CAS maps out blueprint for its future development.....	45
China to select new national key labs	45
Construction project of CAS institute in Ningbo starts.....	45
China fosters 30,000 postdoctoral students.....	46
China to build up world-class science parks	46
CAS sets up a bureau of planning and strategy.....	47
4 China's International Science Cooperation	48
Sino-US Joint Secretariat for rural and social S&T cooperation held a working meeting	48
Astronomy telescopes shared worldwide	48
Workshop on CAS-Russian cooperation held in Beijing	49
MOU for Long Term Cooperation between MOST and UNDP signed	49
Chinese Humboldtians to convene in Beijing	50
MOST took part in OECD NESTI	50
Russian space chief calls for more space cooperation with China.....	51
9th China-Russia S&T Cooperation Sub-committee Meeting convened in Moscow	51
CAS/MPG partner group on plant molecular physiology passes performance appraisal.....	52
MOST Vice Minister met with EU Ambassador to China	53
5 Miscellaneous	54
Aiding Tibet with science and technology benefits the Tibetan people	54
Nanjing introduces unmanned subway	55
Beijing to have earthquake science museum.....	55
Successful development of the first 900T electric platform carrier in China.....	55
China to spend one billion yuan annually on national scholarship	55
Young inventors "brainstormed" in Beijing	56
Joyful summer vacation with study and play	56
National biology Olympic begins in E. China city	57
Research on "Intelligence Road Milling Machine" passed acceptance check	57
2005 China Robot Contest staged in Changzhou.....	58
Scientists reveal new look of Milky Way.....	58
International optics congress opens in China.....	59
International Symposium on Materials Science and Engineering held.....	60

6 Information for upcoming Workshops in October	61
The FIFTH International Conference on Metallothionein	61
The Sixth International Conference on Web-Age Information Management.....	61
International Symposium on Communications and Information Technologies 2005	61
The Ninth International Symposium on Remote-Sensing Physical Measurement and Signals.....	61
2005 International Conference on Advanced Fibers and Polymer Materials.....	61
The 2005 Annual Meeting of the International Society for Interferon and Cytokine Research (ISICR)	61
International Conference on Mechanical Engineering and Mechanics	61
Abbreviations	62

Overview

This August is hot in China, and but the humidity in Beijing is more uncomfortable for many our Helmholtz colleagues. This usual "sauna weather" has lasted almost half of this month.

Prof. B. Hubberten from AWI and Prof. V. Kind from GFZ have participated in the Second Sino-German Workshop on Tibetan Plateau Research, which has been hold in Beijing and Lhasa 14-18. Prof. Winnacker, President of DFG, and Prof. LI Jiayang, Vice President of the Chinese Academy of Sciences, together with over 36 German and 50 Chinese scientists have participated in this workshop. The whole background is the keen interest of DFG for supporting German scientists participating in the cooperation projects on the "Third Pole", which is erected by the most recent continental collision just 2-3 million years ago. Tibetan Plateau is for its nature environment an ideal place for studying the geodynamics, seismic, permafrost, climate change and biodiversity and adaptation. Because of this, DFG has signed one year before an agreement with CAS for co-funding the newly established Institute of Tibetan Plateau. And also under this framework, Helmholtz research groups should also be able to receive DFG support to participate in the cooperation project in this area.

During his further visit to Lanzou, Prof. Hubberten is nominated as an Academic Advisor for a National State Key Laboratory SKLFSE/CAREERI, which belongs also to CAS.

Dr. S. Schwartze, Managing Director of MDC, has paid a visit to Beijing and Xi'an during 18-22.08. It was an invitation of DFG to attend the Sino-German Workshop on Financial Management of Scientific Organizations. He and the other Germany representatives from Universities and DFG have shared their expertise with their Chinese partners.

Between 22 and 29, a FZJ delegation led by Dr. W. Jaek has visited Beijing under the invitation of partners in Tshinghua University. The colleagues are very pleased about our local assistance.

Prof. Rudi Balling, Science Director of GBF, has made his second visit to Beijing this year. He was invited as one of the international judges for evaluating the Institute of Microbiology. All the group leaders gave about 40 presentations, and only those with higher preference would be further supported. This activity provides a good opportunity for Prof. Balling to know more about the Chinese basic research. In between I helped him to arrange another visit to the Infection Research Centre in the Institute of Biophysics. Prof. RAO, director of this CAS institute, was very proud that this centre has recruited 7 tenures from abroad, who are among the "100 Talented". Prof. TANG Hong, head of this centre, is eager to establish good partnership with GBF. Prof. Balling have accepted the invitation as a member of the International Advisory Board of this institute, which was led by two Nobel Price Winners. Besides, he met his partner in Beijing Univ.

Concerning the important news this month, we should mention a National Forum on constructing a resources-saving society. Many ministry officials and the representatives from the large state own companies vowed for bringing contribution of their own. More efforts will be given for saving energy and raw materials, advanced management and new technologies will be preferred.

Another big issue is the official declaration that the Chinese lunar exploration program has been set up. China will send its first [lunar probe satellite in 2007](#), which will be the first unmanned lunar mission.

Dr. Hong HE

Chief Representative of the Helmholtz Beijing Office, 09.09. 2005

1 Science News

1.1 Energy

China's fuel cell technology advanced in the world

(People's Daily, 2005-08-02)

Zhang Huamin, research fellow at Dalian Institute of Chemical Physics, CAS, said recently China has made many breakthroughs in the last years on the innovation of key fuel cell materials and technologies and has joined the rank of countries advanced in this respect.

According to Zhang, in future energy systems centered on hydrogen, fuel cells using hydrogen as fuel would no doubt be the key.

Zhang said the Chinese government places great importance on the research and development of fuel cells. In recent years China has developed 100-watt level to 30-kilowatt level hydrogen-oxygen fuel electrodes and fuel cell electric cars etc. Fuel cell technologies, particularly the proton exchange membrane fuel cell (PEMFC) technology, achieved fast progress, having developed PEMFC batteries of many specifications such as those of 60-kilowatt and 75 kilowatt. China also developed fuel cell engines with a net output of 40 kilowatt for electric sedans and of 100 kilowatt for urban passenger cars, making China's fuel cell technology one of the most advanced in the world.

300 million kw water energy in China ready for exploitation

(People's Daily, 2005-08-03)

Academician of CAS (Chinese Academy of Sciences) Lu Youmei, a renowned expert on hydroelectric power, member of China Three Gorges Project Corporation (CTGPC) Technology Commission as well as chairman of China National Committee on Large Dams, is a guest at People's Daily Online on August 2, 2005, answering questions of common concern such as hydro electric power and sustainable development. Lu noted that hydroelectric power is a kind of renewable energy, and should be given priority.

How much water energy does China possess? Technologically and economically, around 400 million kw is exploitable. By the end of 2004, China has exploited 100 million kw, and the remaining 300 million kw waits to be exploited.

Lu added that China has great potentialities in terms of hydroelectric power development. Among the national total power installation, hydroelectric power only has 100 million kw-capacity, and generates even fewer electricity. Because of the uneven water flow, the installed capacity of hydroelectric stations can only be operational for 4,000 ~ 5,000 hours annually.

Fresh progress in hydrogen source system for large power fuel cells

(CAS, 2005-08-05)



Researchers from the CAS Dalian Institute of Chemical Physics (KICP) scored remarkable progress in their research of hydrogen source system via methanol reforming for 75 kW fuel cells, a core technology for the CAS Key project on project on Hydrogen Source Technologies for Large Power Fuel Cells.

On the basis of the advances of last year, a research team led by Prof. Wang Shudong has further increased hydrogen productivity of the cells by more than 13%, attaining 70.5 Nm³ H₂/h. The volume specific power reached 449W/L, and the weight specific power was 254W/kg. Hydrogen concentration in the reformed gas was as high as 53%, with a CO content of 26~28ppm. These results are among the best in this research area in the world.

IAEA calls for more attention on nuclear safety

(Xinhua Net, 2005-08-10)

Nuclear energy will be increasingly important in the new century but safety should come first, Tomihiro Taniguchi, Deputy Director General of International Atomic Energy Agency (IAEA) told the 18th International Conference on Structural Mechanics in Reactor Technology (SMiRT 18), being held in Beijing.

"Despite the safe operation of Nuclear Power Plants (NPP), the public is still concerned about nuclear safety. Terrorism in recent years has also aroused vast awareness of safety in nuclear usage," Taniguchi said.

"Asia and the Pacific area are vibrant in developing nuclear technology and are supposed to give a boost to the safe use of nuclear power worldwide," said Taniguchi.

Asia has seen rapid growth in energy technology and it is currently the only area where nuclear power enjoys a bright future.

China is in great need of nuclear energy and has included it into its national electricity development program, said Li Ganjie, head of the China National Nuclear Safety Administration (NNSA) at the conference.

Currently, China has nine nuclear power units in operation, with a combined installment capacity of 6.7 million kilowatts, accounting for 1.7 percent of the country's total installment capacity. By 2020, China's installed nuclear power capacity will rise to 40 million kilowatts, accounting for 4 percent of the national total.

"No incidents have taken place in all NPPs in China and no harmful impacts on the environment were reported in the past few years," said Wang Jun, vice-director with national nuclear safety administration. "But we also face challenges in supervision since the types of the reactors as well as the standards vary widely."

The NNSA will take measures to minimize hazards such as enhancing the surveillance and evaluation of safe operation, and promoting international nuclear cooperation.

It's the first time Beijing has hosted the biannual SMiRT since it was launched 34 years ago. The five-day Beijing SMiRT, scheduled to end of Friday, has attracted 252 representatives from 27 countries.

China to build 1st offshore wind power plant

(China News, 2005-08-13)

China plans to build its first offshore wind power plant next year in its northern coastal province of Hebei, a local official has said.

The plant, with a designed capacity of 1 million kilowatts, will be established at the Huanghua Port in the city of Cangzhou by the Bohai Sea, said Gao Xihai, vice director of the management committee of the Huanghua Port Development Zone.

Involving an estimated investment of 9 billion yuan (1.1 billion US dollars), the wind power plant will be jointly built by the Guohua Energy Investment Co. and authorities in the development zone.

After a 4-month wind test in the coastal area of Cangzhou since April this year, the main investor Guohua was convinced that it is an ideal region for the establishment of a wind power plant, said Gao.

The first phase of the project, involving some 500 million yuan (61.7 million US dollars) in investment, is set to start in the third quarter of next year. In this phase, a plant with an initial installed generating capacity of 50,000 kw would be built.

Upon the completion of the whole project by 2020, the offshore wind power plant will help ease the power shortage haunting many parts of north China, local government sources said.

1.2 Earth and Environment

Expert suggests developing "green oilfields"

(China News, 2005-08-02)

China's petroleum reserves accounts for 2% of the world's total while it is the second largest petroleum consumer in the world with a 40% dependence on import. Its discharge volume of sulfur dioxide and carbon dioxide rank No.1 and No.2 in the world. On this basis, diversification of energy resources, sustainable and environment-friendly development, and reduction of reliance on import have become irresistible trends of the times for the country. Therefore, Shi Yuanchun, academician with the Chinese Academy of Sciences and the Chinese Academy of Engineering and professor of China Agricultural University, called for development of biomass energy to realize the historical transition of China's energy structure.

Prof. Shi remarked that biomass industry refers to the industry that produces bio-based products, biological fuel and energy with renewable and recyclable organic materials, including crops, trees, other plants and their remainders, as raw materials. This new industry can not only provide energy, just as other renewable energy such as solar and wind energy and small hydro-electric power stations do, but also produce thousands of types of chemical products, just as coal and petroleum

industries do.

Prof. Shi said that with rich agricultural and forestry waste as raw materials and non-agricultural field as production bases, China's biomass industry would be able to turn agricultural and forestry waste and pollutants into non-hazardous resources, produce environment-friendly energy and biochemical products with high added value, and open up the third battlefield for agricultural development and farmers' income increase. Shi believes that utilization of half of China's biomass resources is equivalent to constructing a "green oilfield" with an annual output of 50 million tons, which can save 15 billion USD foreign exchange on energy import and realize annual production value as high as one trillion Yuan. At the same time, it can enhance energy safety, reduce 160 million tons of carbon dioxide discharge and control white pollution from the very source.

Meteorologists meet in Beijing for a global conference (CAS, 2005-08-03)



The Ninth Scientific Assembly of International Association of Meteorology & Atmospheric Sciences (IAMAS2005) opened on August 2 in Beijing. The 10-day gathering—which takes place for the first time in China, has brought together more than 1,000 participants from 80 plus countries.

Among the big names present at the opening ceremony of the meeting were Chinese S&T Minister Xu Guanhua, Chairman of the China Association for Science and Technology Zhou Guangzhao, China Meteorological Administrator Qin Dahe and CAS Vice President Li Jiayang. CAS President Lu Yongxiang has sent his congratulations to the meeting.

Under the auspices of IAMAS, which is an association of the International Union of Geodesy and Geophysics (IUGG), the meeting is co-organized by the Chinese National Committee for IAMAS and Chinese National Committee for IUGG in collaboration with several local and national organizations, including CAS and CAS Institute of Atmospheric Physics.

Under the theme of Fascinating Atmosphere: Changeable and Changing, the meeting will address issues in various fields, such as atmospheric dynamics, radiation, atmospheric chemistry, atmospheric electricity, aerosol, clouds and precipitation, climate variability and change, planet atmosphere.

Scientists leave to study E. African Rift Valley (China Daily, 2005-08-03)



A group of Chinese scientists left Beijing yesterday for a 15-day scientific study tour of the East African Rift Valley.

Organized by the China Association for Scientific Expedition, the tour is the first Chinese scientific expedition to the valley.

The team will study tectonic plate movements and geological changes, and explore the origin of the hominid line, said professor Gao Dengyi, team leader and president of the China Association for Scientific Expedition.

"The East African Rift Valley is an ideal place for scientific studies in various fields, including palaeoanthropology, geology, biology and meteorology," Gao said yesterday.

"Since this is the first expedition to the rift zone by Chinese scientists, the trip aims to collect basic information and make preliminary studies, laying foundations for further research trips," Gao said.

The team has 18 members, including eight scientists and researchers and several media specialists. Team member Huang Wanbo, a palaeoanthropologist, will try to trace the origin of the first modern man in the rift zone, which is believed to be the cradle of hominids.

Geologist Sui Jianli will study the area's geology, including plate movements and volcanic activity. Research on typical African animals, such as baboons and bats, will be done by professor Zhang Shuyi, a researcher with the Institute of Zoology under the Chinese Academy of Sciences.

Gao, also a researcher with the Institute of Atmospheric Physics under the Chinese Academy of Sciences, will focus on studies of environmental changes. Zhang Bo, publisher of Deep magazine, a monthly scientific expedition journal, will also join the research team.

"Our magazine will publish a special issue covering the details of this expedition, aiming to promote popular sciences among readers," Zhang said.

Dubbed the "encyclopaedia of geosciences," the East African Rift Valley is also called the Afro-Arabian Rift Valley. This area is one of the most extensive rifts on the Earth's surface, extending from Jordan in southwestern Asia through eastern Africa to Mozambique. The valley is about 6,400 kilometres long, averages 48 to 64 kilometres wide and has a depth from a few hundred to several thousand metres.

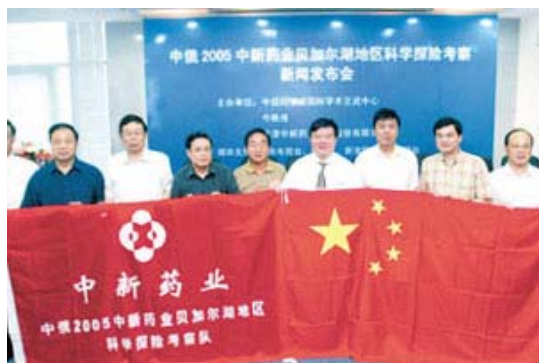
The whole valley consists of two branches: The eastern or the main branch, extending from the southern end of the Red Sea to Lake Victoria in southeastern Kenya, and the western branch, extending more than 2,000 kilometres from Uganda in the north to Mozambique in the south. It runs through eight countries.

The East African Rift Valley has been a rich source of anthropological discovery. Because the rapidly eroding highlands have filled the valley with sediment, a favourable environment has been created for the preservation of remains.

The bones of several hominid ancestors have been found there, including those of "Lucy," a nearly

complete australopithecine skeleton, which was discovered by US anthropologist Donald Johanson in the 1970s.

**Chinese scientists leave for Baikal expedition
(Xinhua Net, 2005-08-09)**



A group of Chinese scientists left here Tuesday for Russia's Irkutsk to kick off a scientific expedition on Lake Baikal, the world's deepest and largest freshwater lake.

It is believed to be the largest ever joint scientific expedition between China and Russia. A total of 43 scientists and journalists from both sides will take part.

The scope of study for the current expedition includes zoology and environment, water lives, lake environment, regional economy, remote sensing and geographic information of the lake.

According to Tao Baoxiang, head of the Chinese team, scientists from the two countries will start a two-day lake-surface expedition on Aug. 12 and all the activities are expected to be finished later this month.

Located in southern Siberia, the lake, with a depth of 1,620 meters, lies between the Irkutsk Oblast on the northwest and Buryatia on the southeast. It was put on the world natural heritage list by the United Nations in 1996.

In order to protect the lake from increasing contamination by paper makers and other polluters, Russia adopted a special law in 1998 to protect it from further pollution and two natural reserves have so far been set up to that effect.

With an age estimated at 20 to 25 million years and an area of 31,500 square km, the rift lake is viewed as one of the world's most ancient lakes.

Fed by 336 inflowing rivers, with the main ones including the Selenga, Barguzin and Upper Angara, the rift lake boasts a volume of about 23,000 cubic km, or one fifth of the total freshwater in the world.

**Prof. Long Chunlin receives Harshberger Medal
(CAS, 2005-08-10)**

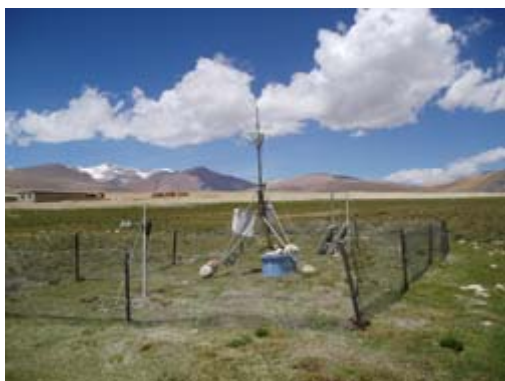


Prof. Long Chunlin, an ethnobotanist at the CAS Kunming Institute of Botany (KIB), has been chosen by the Society of Ethnobotany of India as a laureate of the Harshberger Medal for his outstanding contribution in the field of ethnobotany. The announcement was made recently in Luchnow of northern India, and the award will be conferred at the 10th International Congress of Ethnobiology to be held in 2006 in Thailand.

Prof. Long started his disciplinary exploration and relevant applied research in this field in 1986. Among the 110 research papers and 17 monographs to his credit, the majority is devoted to ethnobotany, bio-diversity and floral research of economic plants. His primary achievement is to apply the disciplinary principles to the protection of native bio-diversity and socio-economic development in the communities of the ethnical peoples in southwest China and his work leads to new developments of the discipline in China.

The Medal was set up to honor international scientists for their contributions to the field of ethnobotany. Dr. J. W. Harshberger was a scientist who coined the term Ethnobotany and founder of the discipline. The bi-annual prize is conferred by the Society of Ethno-botany which is now headquartered in India's National Botanical Research Institute. In the first session of the Prize in 1994, it was given to Prof. Pei Shengji, a KIB researchers and Prof. Richard Ford of the US.

CAS research station at Mt Qomolangma under smooth construction (CAS, 2005-08-16)



Located at a village in Dingri County, the Tibet Autonomous Region and about 30 km from the Mt Qomolangma (also known as Everest) Base Camp, the CAS integrated monitoring and research platform with an attitude of 276 meters above sea level is in smooth progress.

At present, scientists have put up a state-of-the-art working tent, and an atmospheric boundary layer tower, wind temperature profiler and foundation for the activity room. A domestic water

supply has also been put into use, and a set of hypersonic wind temperature equipment (involving radioactive monitoring system of 4 Component) has been on for nearly a month at the Qomolangma Station, together with CO₂/H₂O open-circuit analyzer.

It is expected that the construction will be finished at the end of August. By then, configuration of various equipments will be completed and operational.

International sturgeon symposium to be held in China in 2009

(CAS, 2005-08-16)

At the 5th International Symposium on Sturgeon held recently in Ramsar, Iran, a proposal to hold the 2009 symposium in Wuhan, capital of central China's Hubei Province, was endorsed by the academic committee of the meeting. The suggestion was initiated by Prof. Chang Jianbo from the CAS Institute of Hydrobiology and Prof. Wei Qiwei from the Yangtze River Fisheries Research Institute.

Believed as a living fossil, sturgeon appeared on Earth more than 250 million years ago, even earlier than dinosaurs. Because the unfertilized eggs of sturgeon could be made into caviar with tremendous economic returns, the venerable genus with important research value is in real endanger. Furthermore, due to the recent excessive fishing, irrational irrigation construction and water pollution, all the sturgeon species around the world are at great risk and several geographical populations have already died out. The sturgeon resources in the area of Caspian Sea and Black Sea especially saw a sharp decrease.

In order to save this ancient species, the World Sturgeon Conservation Society established in 2003 in Germany decided to hold an international symposium on sturgeon every four years, and all the proceedings of the symposiums are published in a formal form.

Among the 400 or so sturgeon specialists at the 5th symposium, 12 were Chinese researchers. They came from the CAS Institute of Hydrobiology, Yangtze River Fisheries Research Institute and Heilongjiang River Fisheries Research Institute under the Chinese Academy of Fishery Sciences, Chinese Sturgeon Research, and the administration of the Shanghai Chinese Sturgeon Nature Reserve.

"Roof of world" Tibet moving northeast

(Xinhua Net, 2005-08-16)



(The Qinghai-Tibet Plateau, dubbed "the roof of the world", is moving northward and eastward at seven to 30 millimeters a year, syas a Chinese researcher.)

The Qinghai-Tibet Plateau, dubbed "the roof of the world", is moving northward and eastward at seven to 30 millimeters a year, a Chinese researcher announced Tuesday.

"The plateau is moving because it's being pushed by the Indian plate," said Dr. Tan Kai, a researcher with China Seismological Bureau who is collecting data for a global positioning system (GPS) survey in the towering Kunlun Mountains in Golmud city of northwest China's Qinghai Province.

Dr. Tan and his colleagues have found through the survey that Lhasa, on the southern end of the plateau, is moving 30 millimeters a year northeast at an angle of 38 degrees. Meanwhile, the Kunlun Mountains in the central plateau is moving 21 millimeters a year at 61 degrees. The Qilian Mountains further north is moving between seven and 14 millimeters a year, at an angle of 80 degrees.

"Which means the entire plateau is moving seven to 30 millimeters a year on average," Tan told Xinhua. "Such moves are barely noticeable and will not change the Chinese continental plate any time soon. But they're still significant from the geological point of view."

The seismological bureau has conducted more than 50 GPS surveys on the roof of the world since 1991. Of the country's 1,056 survey stations, 340 are in the plateau region, which is known as the "third polar of the earth".

Dr. Tan said the GPS surveys can capture real-time, highly precise data to calculate velocity of the crustal movement. Results of the surveys will help scientists study the formation and evolution of the plateau and evaluate the region's risk of earthquake and other geological disasters.

The conclusion was echoed by Fang Xiaomin, a researcher at the Chinese Academy of Sciences Institute of Tibetan Plateau Research.

A collision between the Indian Plate and the Eurasia Continent Plate 40 million years ago shaped the Qinghai-Tibet Plateau and its surrounding geological features, said Fang.

As the two plates of the earth's crust still collide, the plateau is moving north by more than 20 millimeters and is growing taller by several millimeters a year, too, according to Fang.

Weather radar network to cover whole China by 2010

(People's Daily, 2005-08-18)

China will build 158 sets of new generation Doppler weather radar system in the 31 provinces, autonomous regions and municipalities across the country by 2010, in order to form a weather radar-monitoring network covering the entire nation. It is aimed at further improving the monitoring and forecast capacity for disastrous weather, including typhoon, rainstorm and strong convection, reports People's Daily on August 18.

The information was released on August 17 by the China Meteorological Administration in its "Short-term Weather Radar Development Planning (2005-2010)", with the recent approval by the National Development and Reform Commission.

So far, 84 weather radars have gone into business and trial operation in the country, playing an important role in monitoring and pre-warning disastrous weather, and guaranteeing the sustainable development of the national economy and society.

Electronic recycling center to be built in Tianjin

(CRI, 2005-08-21)

A recycling center for electronic waste will be built next month in the northern coastal city of Tianjin, to deal with the rising volume of disused household appliances.

Located in the Tianjin Economic Development Area, it's intended to become the electronic waste

recycling base for all of north China, with the capacity to disposal of 30,000 tons of electronic waste annually.

Local officials said the center would recycle electronic waste and extract rare materials such as gold, silver, and others including zinc, iron and copper. After the extraction, the waste residues will be recovered for building materials. Circuit boards will be crushed and recycled.

As people are renewing their electronic products more and more often, electronic waste has become a major threat to the environment. Discarded electronic items such as TV sets, computers and mobile phones pollute soil and water, kill animals and plants and can occasionally be lethal to humans.

Experts say 75 percent of electronic waste can be recycled.

According to the National Bureau of Statistics, more than 4 million TV sets, 5 million washing machines, 5 million refrigerators, 6 million computers and 30 million mobile phones were replaced in China in 2004. This kind of electrical and electronic garbage is growing at an annual rate of 5-6 percent. Electronic waste from foreign countries is also pouring into China.

The Ministry of Information Industry is currently said to be revising its laws on electronic waste.

A state key lab of soil science passed acceptance check (MOST, 2005-08-22)

On 5th of August, 2005, a group of experts visited a state key laboratory in Nanjing for acceptance check. It is a laboratory for sustainable development of soil and agriculture. Led by Academician CHEN Wenxin, the 10 experts were from universities, research institutes and the National Natural Sciences Foundation of China. The expert team for acceptance check was convened by MOST's Department of Basic Research. Presented at the acceptance meeting were MOST's Department of Basic Research, the Resources and Environment Bureau and the Planning Bureau of CAS.

The team of experts listened to the summary report delivered by the head of the laboratory ZHOU Jianmin, compared and reviewed the Assignment Document and the Application Document to be accepted as the Key State Laboratory for Soil and Sustainable Agricultural Development. They also made an on-the-spot investigation on the development and operation of the lab.

During its construction, the laboratory undertook a batch of major national projects and achieved a series of innovative results in areas such as the evolution law of soil resources and deterioration prevention measures under the influence of human activities, the supply of the nutrients in the soil and the regulation of the nutrients of the plants, soil pollution and remediation, the connection between soil utilization and environmental change, soil biology and bio-chemistry. The laboratory was in good operation order and had achieved marked progress in daily management, human resources development, domestic and international exchange. The team of experts agreed that the laboratory had completed the development plan and met the standards of state key laboratories. Thus, they unanimously agreed that the laboratory passed the acceptance check.

CAS, Harvard botanists complete second biodiversity survey in Hengduan Mountains (CAS, 2005-08-26)



With the support from the National Natural Science Foundation of China and U.S. National Science Foundation, a Sino-US biodiversity exploration team, comprising researchers from CAS Kuming Institute of Botany and Harvard University, has recently completed its second field trip to the hinterland of the Hengduan Mountain Range in western Sichuan.

The Hengduan Mountains, located east of the Himalayan Range, form a dramatic series of north-south trending valleys and ridges extending from 1,000 to over 7,000 meters in elevation. The area is particularly rich in vascular plants.

The 40-day expedition has yielded more than 2,200 collections of plants, and many other experimental materials for molecular and chromosome research, providing important materials for in-depth studies of origin and evolution of plant biodiversity in the region. The researchers carried out a biodiversity exploration in the southwest part of Sichuan Province and the Changdu region of Tibet in July and August, 2003.

Versatile plant offers solutions to erosion issue (China Daily, 2005-08-30)

Experts and officials from 20 countries gathered in Beijing to share their latest experiences on the development of the Seabuckthorn plant. Seabuckthorn is a valuable multi-purpose plant grown in mountainous areas, which helps to rehabilitate degraded land and alleviate the ensuing rural poverty.

Addressing the 4-day second international seabuckthorn association conference, which finished yesterday, Nouredin Mona, Food and Agriculture Organization of the United Nations (FAO) representative to China, said in the past two decades, the plant has been used for water and soil conservation as well as in the development of nutritious foodstuffs and medical health products.

"This effort has facilitated poverty reduction for millions of farmers across China's backward rural areas. With research, experimentation and promotion of the plant, harmonious and co-ordinated development between the rural ecosystem and the economy has been achieved," he said.

With further international co-operation, he said he was confident that seabuckthorn can become a crucial solution to nutrition, health and environment issues for many countries including China, Mongolia, India and Pakistan.

According to E Jinping, vice-minister of water resources, China has embarked on a large-scale planting of seabuckthorn since 1985. It is now a key method for controlling water and soil erosion, an ecological problem threatening one-third of the country.

Following years of intensive seeding, seabuckthorn has proven effective in preventing coarse sediments from moving from the Loess Plateau, the world's worst eroded area, into the Yellow

River.

Every year, more than 100,000 hectares of new seabuckthorn forest are being planted across China's ecologically fragile northwestern provinces. Currently, there are 2.3 million seeded hectares, 90 per cent of the world's total.

The plant has also been turned into food and medical health products, as a way of facilitating poverty reduction for poor farmers in West China, E said.

Vice-minister E said he hoped that seabuckthorn could contribute to China's "go west" strategy by boosting farmer's incomes and rehabilitating regional ecosystems.

"Over the past two decades, the small shrub has developed into a multi-benefit plant resource, and also a new industry with scientists working in many fields," Qian Zhengying, honorary president of the conference, said in her written speech.

Seabuckthorn has been growing across Asia for thousands of years.

Scientists prepare 22nd expedition to Antarctica (Xinhua Net, 2005-08-31)



China is expected to launch the 22nd expedition to the South Pole in November, aiming primarily to collect meteorites on the Grove Mountain area.

Yang Huigen, deputy director of China's Polar Region Research Center, said in an interview with a Shanghai newspaper that the scientific expedition will last for more than four months.

In addition to searching for meteorites, the expedition team will also investigate the feasibility of setting up China's third scientific station in Antarctica, according to Yang.

So far, China has built two scientific stations in Antarctica, the Great Wall Station and the Zhongshan Station.

The collection of meteorites will focus on the area of Grove Mountain, which is abundant in meteorites. Chinese scientists have collected a total of 4,480 pieces of meteorites in previous explorations, said Yang.

At present, the United States has more than 9,000 pieces of meteorites, and Japan has about 20,000 pieces.

Scientists believe that meteorites will offer lots of information on the evolution of the universe. The special environment at the South Pole has helped preserve the meteorites, which because they are typically more than 100,000 years old, are especially valuable to scientific research, said Yang. He said Chinese scientists will also take part in international Antarctic research under ice lakes and into global warming.

Sixty-five-year-old Yan Qide, a member of China's first Antarctic expedition team, said travelling to Antarctica by ordinary people has become possible.

Currently, more than 10,000 international tourists visit Antarctica annually. The Antarctic Great Wall Station receives more than 1,000 visitors every year, said Yan.

Ge Jianxiong, a professor with Fudan University who has taken part in the 17th Chinese Antarctic expedition, said it is feasible to develop tourism in Antarctica properly.

Yan emphasized that the last pure land on the earth should be well protected in tourism development.

China to begin the largest ecological project

(China News, 2005-08-31)

Du Ying, new deputy director of the National Development and Reform Commission, said Tuesday that from this year to 2010, China plans to invest 7.5 billion RMB (US\$934 million) in ecological protection and construction of Qinghai's Sanjiangyuan Nature Reserve, source of the Yangtze River, the Yellow River and the Lancang River. This is not only a landmark project for the development of western regions, but also the largest ecological project in China.

Located in central Qinghai-Tibet Plateau, the Sanjiangyuan region covers an area of 360,000 sq. kilometers. Providing 60 billion cubic meters of water for the Yangtze River, the Yellow River and the Lancang River each year, Sanjiangyuan is an important supply line for China's fresh water resources and is therefore called "Water Tower of China".

According to Qinghai governor Song Xiuyan, as a result of natural factors and unreasonable human activities, ecological environment of the Sanjiangyuan region is now increasingly deteriorating. Grasslands are degrading, with rampant rodents and insect pests. Land is suffering severe desertification and soil erosion is intensifying. Species and number of living things are decreasing sharply. Glacier is retreating, lakes are shrinking, wetlands are degrading and runoff is declining.

Du Ying said that the Sanjiangyuan region cannot brook any delay of treatment now.

According to overall plan of the Chinese government, by 2010, China will have invested a total of 7.5 billion RMB in ecological protection and construction for the Sanjiangyuan Nature Reserve, in an effort to reverse the vicious circle, protect and recover forests and grass, restrain the trend of unbalanced plateau ecological system, such as degradation and desertification of grasslands.

Water volume in the region will increase over 1.3 billion cubic meters, silt loss will decrease more than 18 million tons and runoff of the Yellow River will increase 1.2 billion cubic meters.

1.3 Health

"Intelligent capsule" to offer painless gastroscopy

(Xinhua Net, 2005-08-03)

Patients of celiac diseases might soon be able to avoid pain in gastroscopy and celoscopy examinations, as China has invented a miniature robot wrapped in anormal-sized capsule which can wirelessly send images.

As the rechargeable robot moves through celiac organs, a mini-camera unit works at a speed of 5 seconds per photo frame. Meanwhile, a wireless transmitter sends images to a receiver.

In addition to celiac examination, the robot can be used in small wound surgery to mitigate pains,

improve operation safety and reduce medical costs. The new technology has just passed the state appraisal in Beijing.

Garlic ingredient to fight cancer

(China News, 2005-08-04)

Why can garlic prevent stomach cancer? Chinese scientists have found the answer through examination and research of samples of stomach cancer.

Beijing Genomics Institute of the Chinese Academy of Sciences, School of Oncology of Peking University, and Beijing Institute for Cancer Research jointly published a report recently, which discloses for the first time the molecular mechanism for garlic's anti-cancer effects.

According to the report, allitridi can trigger a series of proteinic reaction relevant to the channel of cell apoptosis in stomach cancer cells.

The report published at the third academic conference of proteome science in China says that allitridi, the major component of garlic, can control duplication of BGC823 of stomach cancer cell line and lead to its differentiation and apoptosis.

Scientists studied 10 samples of stomach cancer and proteomes of tissues beside cancer cells and discovered 19 differential proteins related to stomach cancer. These proteins can be roughly divided into several categories relevant to cytoskeleton, energy balance, cytotropism and cell duplication control, indicating that stomach cancer is caused by combined action of a multiple of factors.

Hospital makes progress in neural stem cell transplantation

(People's Daily, 2005-08-04)

The Beijing-based General Hospital of Armed Police Force, since the establishment of its department of neural stem cell transplantation in 2004, has received over 70 patients with brain stroke, traumatic brain injury, spinal cord injury, motor neuron disease and cerebral palsy.

Through lumbar puncture and injecting stem cell below arachnoid, diseases in neural system can be recovered.

Though the mechanism of neural stem cell repairing the injury of central nervous system is yet to be clarified, patients have shown remarkable improvement. Transplantation of neural stem cell can reduce muscle hypertonia and improve disturbances of motor, sensory, lingual and vegetative nerves. Transplantation of neural stem cell has been proved to be effective in curing motor neuron disease. It not only can improve remarkably patients' clinical symptoms but also can improve their quality of life. It can also halt the development of the disease of late patients thus greatly expand their lives.

The hospital has gained experience in curing cerebral palsy through transplantation of neural stem cell. Since receiving the first patient in March 2005, they have cured some diseases. An eight-year-old child with serious torsion spasm sat up for the first time after treatment and could hold things.

China discovers two new human genes

(People's Daily, 2005-08-05)

[Beijing](#) Blood Center has recently discovered two new HLA alleles, which have received official names from the HLA naming committee of the World Health Organization. The discovery may

contribute to raising the survival rates of human marrow and organ transplantation, experts say.

The discovery is a result of years of studies and analysis on tens of thousands of samples by the HLA office of the blood center, which has entered the world largest Gene Bank, according to a person in charge from the center.

One of the most varied human heredity systems, HLA plays a certain role in disease occurrence, diagnosis and treatment, especially in marrow and organ transplantation.

New hepatitis B vaccine ready to enter market

(Xinhua Net, 2005-08-06)

China's first self-developed hepatitis B vaccine has gone through clinical testing and is ready for industrial production, according to sources with the developer.

The Chongqing Jiachen Biological Product Manufacturing Co. invested 100 million yuan (12.5 million US dollars) through its parental company, the Chongqing Beer Co., to cooperate with the China No. 3 Military University in developing the vaccine in 1998.

The sample product passed drug testing by the China Institute for the Control of Drugs and Biological Products in 2002, and entered phase two clinical testing in the following year.

Hepatitis B is one of the most infectious diseases in China. According to official statistics, China has 130 million HBV virus carriers and 30 million patients. Medical expenditure on HBV therapy amounts to 30 billion to 50 billion yuan (3.75 million to 6.25 million US dollars) a year in China.

SARS vaccine approved for human trials

(China Daily, 2005-08-06)

A SARS vaccine developed by a Beijing-based inspection and quarantine body is now being tested in clinical trials.

According to an official with the Beijing Entry-Exit Inspection and Quarantine Bureau, its vaccine for SARS (severe acute respiratory syndrome) has been approved by government authorities, and is ready for the patent application process.

"Our vaccine could be good for three years before it is injected into people," said the official on Friday, who only gave his name as Dong.

"It lasts longer than other vaccines for the epidemic," he said.

The vaccine that was invented last October could also be produced in massive amounts, he said, serving to prevent an outbreak more effectively.

At least two research institutes in China are developing SARS vaccines.

Zhong Nanshan, president of the Chinese Medical Association, said last month that scientists in Beijing would carry out trials among volunteers aged 20 to 60 to test the effectiveness of a SARS vaccine produced by a Beijing-based company.

Initial trials involving 36 volunteers at the Sino-Japanese Friendship Hospital in Beijing found antibodies against the disease developed in all volunteers, without obvious side effects.

The vaccine developed by the bureau has just completed tests on monkeys at Wuhan University in Central China's Hubei Province.

Dong claimed antibodies were found in animals injected with the vaccine, without symptoms of the deadly disease.

The official refused to disclose any details about the vaccine, including when and where the trials would be carried out.

China strengthens animal quarantine**(China News, 2005-08-08)**

China has stepped up check-ups for the import and export of animal products in a bid to control the pig-borne streptococcus infection sweeping Sichuan province.

The General Administration of Quality Supervision, Inspection and Quarantine has called on all local government departments to take preventive measures against the epidemic.

These measures instruct breeding farms for export to strictly carry out disinfection procedures and report any cases to the authorities immediately.

Any breeding farms seen to killing or processing sick animals without authorization will have their export licences revoked.

Meanwhile, the Ministry requires local quarantine departments to issue guidelines to enterprises on safe production.

The pig-borne endemic has claimed at least 38 lives in the southwestern province of Sichuan.

Most Chinese have periodontal disease**(China Net, 2005-08-08)**

A nation-wide activity for oral hygiene, organized by China's tooth decay prevention group, Guangxi's Chinese medicine association and China's oral hygiene product industry association to promote "using traditional Chinese medicine for oral hygiene" and hosting discussion forum on "fortifying teeth", has been launched in Guangxi province's Guilin.

The third Chinese dental disease general census initiated by China's tooth decay prevention group will lump together the force of traditional Chinese medicine, relevant associations connected to oral hygiene, experts, enterprises and the media to initiate a large-scale oral hygiene promotional activity within the entire country for the purpose of propagating the virtues of 5,000 years of traditional medicine and further elevate the public health issue of China's oral hygiene.

According to Zhang Boxue, deputy head of China's tooth decay prevention group, his group conducted two large scale general censuses on dental diseases in China in the past several years. Those surveys showed that in spite of the great progress in China's oral hygienic conditions in the past twenty years, the overall situation is still not optimistic, with the rates of dental diseases amongst children and the elderly generally higher than the world level.

97% of all Chinese suffer some degree of periodontal diseases and such gum-related diseases are the main reason for people over 35 losing their teeth. Clinical studies as well as research showed that periodontal infection could trigger other ailments all over the body, leading to or accentuating coronary heart disease, diabetes and lung infections. Those with periodontal infection have a 20% higher rate of incurring coronary heart disease.

SIBS sets up a committee to deal with ethical issues from life sciences**(CAS, 2005-08-09)**

An ethic committee was inaugurated recently at the Shanghai Institutes for Biological Sciences (SIBS), a research arm of CAS in life sciences.

The committee is designed to carry out reviews and offer advices on ethic issues arising from scientific research involving human and animal subjects conducted by SIBS staff. It will also be responsible for providing guidelines for development of proper procedures to deal with the issues.

Chaired by Prof. Ma Weijun, an expert in biochemistry and molecular biology and vice director of Health Science Center under SIBS, the committee is composed of experts from various fields, such as biotechnology, fundamental or clinical medicine, pharmacology, therapeutic appliances, sociology, morality, law and public personages. At the inaugural ceremony, SIBS Vice-President Wu Jiarui conferred the letters of appointment to the committee members at the meeting.

Experts say that the inauguration of the committee will help ensure the research work at SIBS more compatible with the international conventions.

China creates its 1st cloned pig

(Xinhua Net, 2005-08-09)



(China's first pig cloned from a body cell. China announced Monday that the cloned pig, weighing 1.13 kilograms, was born in Henan Province on Friday after more than one year of research. It was the first cloned pig independently developed by Chinese scientists.)

Chinese scientists have successfully produced the country's first cloned pig, state media said, hailing it as a major scientific breakthrough.

The Chinese Agriculture University announced that the healthy 1.1 kilogramme (2.4 pounds) piglet was born in the central province of Hebei on Friday, Xinhua news agency reported.

"This cloned piglet's birth shows that out country's research in this field has reached a world standard," the report said.

It said China was the seventh country to have successfully cloned pigs, after Britain, Japan, the United States, Australia, South Korea and Germany.

The cloned piglet was one of three born to a female pig, but the other two died soon after birth.

The report quoted scientists as saying that cloned pigs would be useful for organ transplants and scientific research, as well as for improving pig species.

China has previously cloned cows, with its first cloned cow giving birth to an artificially inseminated calf last December.

China's first virtual man dataset

(China News, 2005-08-09)

China's first virtual man was successfully created at the First Military Medical University. This digital human body information dataset is the largest in the world with the highest resolution.

It is learned from the university today that scientists spent 27 days on virtual human cutting, took photos with 4040*5880 resolution of 9,215 0.2mm pieces with a digital camera of 22 million pixels, creating a dataset with the highest resolution in 0.2mm virtual human cutting. Calculated

on 60 megabytes per picture, this dataset collects over 540 gigabytes virtual man information, making it the largest digital human body information dataset in the world.

Since the first virtual woman was created in Guangzhou in 2003, China has established ten digital human body information datasets, four by the First Military Medical University and preserved in Guangzhou, including two men's, one woman's and one baby's. The sample for the first virtual man is the best preserved.

Experts said that a virtual human has neither sense nor thoughts, but has the same bio-data with a real person. Development of a virtual human consists of four stages: visual human, virtual physical human, virtual physiological human and virtual intelligence human. At present, China's research on virtual human has just started its first steps.

China to regulate organ transplants

(China News, 2005-08-09)

The Shanghai Morning Post newspaper reports that China is going to regulate organ transplants. The newspaper quotes Professor Li Leishi from Nanjing General Military Hospital as saying Monday at a seminar that the Ministry of Health plans to issue organ transplant permits within the year.

According to the report, hospital will not be allowed to do liver transplants on late-stage cancer patients.

The health authority will review hospitals' capabilities for organ transplant before issuing permits. The inspections will cover medical personnel, equipment, total number of organ transplantations performed, and quality of the operations.

The minimum standard for successful kidney and liver transplants is to guarantee patients 85 and 75 percent chance of survival respectively within one year.

Experts say transplant permits will not be issued for life. Hospitals will be periodically reviewed and may have their permits revoked if they fail to meet operating requirements.

Hospitals will not be allowed to invite doctors from outside to carry out the organ transplantations.

China, US launch AIDS prevention program

(China News, 2005-08-14)



(A woman cycles past wall with anti-AIDS paintings in Zoucheng, east China's Shandong Province, July 28, 2005.)

China and the United States have jointly launched an HIV/AIDS prevention program to fight the deadly disease in central and southwest China's provinces.

The international program in its initial phase will input a total of 7 million US dollars to help non-governmental organizations prevent AIDS in ten provinces and regions in China, local health

officials said.

Yunnan Province, Guangxi Zhuang Autonomous Region in southwest China, and Henan Province in central China and other provinces will benefit from this program, which is organized by the US Agency for International Development in cooperation with China's Ministry of Health.

The program will in the next five years offer 15 million US dollars and other assistance such as training and technical support to help improve the capability of AIDS control in the provinces, said Li Huojia, director of the Disease Control Section with the Guangxi Regional Health Department.

In Guangxi, the program will target Pingxiang city and Ningming county, located at the border of China and Vietnam, with the view of improving the personal hygiene of HIV carriers, AIDS patients and their family members and meanwhile providing supportive clinic services and advice. Aside from the China-US program, China in July received a total of 98 million US dollars for the AIDS prevention program sponsored by the Global Fund, which were allocated to help control HIV/AIDS in seven western Chinese provinces, including Guangxi, Li said.

So far, more than 20 international programs for AIDS prevention have been carried out in China. China has an estimated 840,000 people infected with the AIDS virus. The UN AIDS agency has warned that China could have as many as 10 million people infected by 2010 if it does not take urgent action.

Prisoners to receive compulsory HIV tests

(China News, 2005-08-15)



(Prisoners in the Qingpu Prison in Shanghai receive medical consult on "AIDS & Drugs" in the picture taken on June 24, 2005.)

Prisoners in Beijing will receive compulsory HIV/AIDS tests, with confirmed sufferers of the disease getting free medical treatment. The treatment will continue after the prisoners finish their jail terms.

The aim is to prevent the spread of HIV/AIDS among prisoners and to provide treatment as part of the capital's efforts to combat the disease, said an official with the Beijing Prison Management Bureau yesterday.

Ray Yip, director of the Beijing office of Global AIDS Program of the United States, described the move by the Beijing prison authorities as a "sensible and effective measure" which would help identify HIV/AIDS sufferers in jail as early as possible, thus cutting down the potential for spreading the disease.

According to Yip, timely treatment for every HIV/AIDS sufferer can help prevent the infection spreading to between three and five others.

Prisoners are a high-risk group, with an infection rate of three per thousand, which is more than four times higher than in the population at large, he noted.

Statistics indicate that the total number of registered HIV/AIDS sufferers in Beijing is less than 2,000, said Li Dun, a professor with Tsinghua University.

CAS researchers join hands with world peers for finished rice genome (CAS, 2005-08-15)



A detailed analysis of the high-quality sequence of the rice genome was published in the August 11 issue of the journal *Nature*, marking the completion of a six-year international collaborative effort to unravel the genome of the world's most important food crop that feeds over half of the global population.

The work unveils a genome consisting of roughly 400 million DNA bases holding 37,544 genes on rice's 12 chromosomes, affirm scientists in the *Nature* article, offering an overview of the structure and function of the genes that defines the rice plant, and providing clues on how the sequence can be useful to accelerate the improvement of the plant.

The sequencing was accomplished by the International Rice Genome Sequencing Project (IRGSP), a consortium of publicly funded laboratories from nine countries. Two groups of Chinese researchers led by the CAS National Center for Gene Research (NCGR) in Shanghai and the Academic Sinica Plant Genome Center in Taiwan finished the sequencing of chromosomes 4 and 5, respectively. CAS researchers also fulfilled comparative genomics between Nipponbare (*Oryza Sativa japonica Oryza sativa subsp. japonica cv. Nipponbare*) and rice cultivar 93-11 (*Oryza sativa L. ssp. indica*) and the analysis of a sequenced centromere.

The sequencing work is the result of effective and full cooperation among scientists both at home and abroad, says Dr. Han Bin, NCGR director. Originally planned as a 10-year project, the sequence was completed four years ahead of schedule thanks to the close collaboration. Through the project, Chinese researchers not only increase their international presence in the field but also benefit a lot in from information, technology and resources sharing, and talent training.

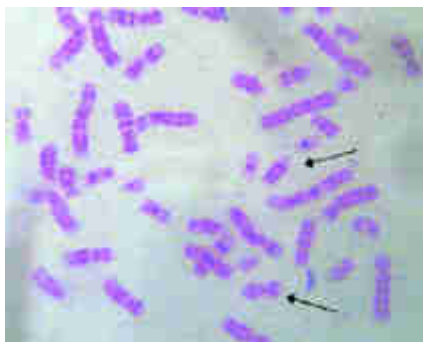
This is one of the most accurate and complete sequences from a higher organism, according to experts. The accuracy of the sequence data is maintained at 99.999% corresponding to less than one error per 10,000 bases so that the reliability of identified genes is also high. Previously published draft sequences of rice are shown to lack the coverage and accuracy required to identify important genes.

The accurate, map based sequence has already led to the identification of genes responsible for agronomically important traits such as genes that affect growth habit to promote yield and photoperiod genes to extend the range of elite cultivars, says scientists. This could probably

provide the key in improving yield to feed an expanding world population at a time of increasing restraints on agriculture.

Researchers say that the genetic information of rice will also be useful in understanding the genome of other crops in the grass family including corn, wheat, barley, rye and sorghum, all of which share a common ancestor with rice.

Chromosome abnormality discovered
(China Daily, 2005-08-16)



The third and thirteenth chromosomes of a 29-year-old man, surnamed Yang, were recently confirmed to be the world's first reported chromosomal abnormality karyotype, according to the National Medical Genetics Key Laboratory in Changchun, capital city of northeast China's Jilin Province.

The chromosome karyotype, the world's first known case of balanced translocation of the third and thirteenth chromosomes, has been listed in the database of China human chromosomal abnormality karyotypes, according to Changchun Maternity Hospital.

Experts say that the discovery of this new chromosomal abnormality karyotype not only enriches the world's chromosome data bank, but is also very helpful to the study of hereditary improvement of the human race, and useful in the clinical studies of genetics.

Yang's wife was pregnant twice, but unfortunately twice suffered a miscarriage within the first two months of pregnancy.

Medical tests showed that Yang's third and thirteenth chromosomes are different from those of normal people.

"The two chromosomes set off a balanced translocation, which means that the two chromosomes became fractured, and they have changed to become two totally new chromosomes after their natural reconstruction," said Du Wei, doctor from Changchun Maternity Hospital's Cytogenetics Lab.

Since there was no record on balanced translocation of human's third and thirteenth chromosomes at home or abroad, the hospital sent Yang's cell sample to the National Medical Genetics Key Laboratory for verification.

Since the quantity of the chromosome has not changed, Yang is no different in appearance, personality or intelligence from a normal human.

However, the couple only have a one in eighteen chance of having a healthy child through regular pregnancy, and the child in turn has a one in eighteen chance of inheriting the chromosomal abnormality.

"A method to treat this kind of disease is still under investigation." Du added.

According to Du, chromosomal abnormality karyotype may be inherited from the parents, or caused by long-term exposure to chemicals, radioactive material or a biological virus.

Yang was found to have no experience of such exposures, leaving inheritance as the only explanation. However, tests on his parents' chromosomes have yet to be conducted.

Ultrasonic scissors utilized for tongue tumor resection

(Xinhua Net, 2005-08-18)

The University of Hong Kong announced Thursday a study result that ultrasonic scissors can achieve better surgical outcome than traditional tongue tumor treatments.

The Faculty of Medicine of the university has successfully performed glossectomy, the surgical removal of tongue, with the use of the ultrasonic scissors in 14 patients since January 2004.

Satisfactory results were obtained while the patients had nearly zero blood loss and none of them developed post-operative complication.

The operation results were recently published in an international medical journal "Head and Neck" in August 2005.

According to information given by the university, conventional surgical methods for the removal of tongue tumor utilize knife, scissors, diathermy or laser.

Those methods can cause severe burn to the wound, resulting in more post-operative pain, inflammation, speech, swelling and potential wound healing problems.

Statistics from the Hong Kong Hospital Authority showed that there are about 130 new tongue cancer patients every year.

Carcinoma of tongue is more common in men than in women and is associated with chronic consumption of tobacco and alcohol, betel nut chewing and irradiation. Early symptoms include persistently painful tongue ulcer, white or red discoloration.

New technology developed to test pig-borne disease

(Xinhua Net, 2005-08-26)

Chinese scientists have developed a new technology to test the pig-borne disease caused by swine *Streptococcus suis* more effectively.

The new technology will take only one hour and a half to spot swine *Streptococcus suis* bacteria, while the traditional method takes three to seven days.

The technology was developed by experts with the Beijing Quality Supervision, Inspection and Quarantine Department and the China Veterinary Products Supervision Institute.

It passed appraisal by an expert team from the State Administration of Quality Supervision, Inspection and Quarantine on Friday.

The pig-borne disease, caused by swine *Streptococcus suis* bacteria, hit southwest China's Sichuan this July, leaving about 40 people dead.

Streptococcus suis is usually transmitted through contact with raw pork or sick swine. Symptoms include high fever, nausea and vomiting, followed by meningitis, hemorrhaging under the skin, toxic shock and sometimes coma.

Scientists find possible medicine for SARS

(China News, 2005-08-27)

Scientists announced a possible breakthrough in the treatment of severe acute respiratory

syndrome (SARS) on Friday.

According to their report in Guangzhou, South China's Guangdong Province, small interfering Ribonucleic Acid (siRNA), able to target specific genes, is showing efficiency in combating the disease.

Researchers led by Zhong Nanshan, director of the Guangzhou Institute of Respiratory Diseases, have been working to find drugs and vaccines to prevent another outbreak.

Researchers tested two types of siRNA that target different parts of the genome of the SARS virus. Tests on monkeys showed that, although animals treated with the siRNA could still be infected with the disease, their symptoms were significantly less severe, suffering less lung damage and smaller increases in body temperature.

"The long-term experiments show that siRNA is effective in curing SARS, and the monkey subjects showed no adverse side effects," Li Baojian, a biotechnology professor of Zhongshan University, said on Friday.

But, Zhong Nanshan added: "The technology of siRNA cannot be used clinically in the short term."

Though the theory of siRNA was discovered in 1990, it has never been used in humans, Zhong said. "We must undergo a careful and long-term test of toxicity for siRNA before it is made into drugs or a vaccine," he said. "The test needs three to five years at least."

1.4 Key Technologies

China becomes 3rd largest chip designer

(China News, 2005-08-03)

This year, chips designed by China and semiconductors partly designed by China have taken up a market share of 14.8% in the globe. China thus becomes the third largest chip designer in the world.

A report released by iSuppli Corporation last week shows that the U.S. remains the largest chip designer this year, whose semiconductors occupy 40.2% of the global market. Japan ranks the second, holding a market share of 15.5%, and China ranks the third.

As to semiconductor manufacturing, China's strength has been constantly increasing. However, lack of experienced chip designers affects the development of China's chip design to some extent.

Analysts predict that by 2006 sales volume of semiconductors designed by China will exceed Japan's and China will become world's second largest semiconductor designer.

In recent years, China's semiconductor market has grown rapidly. Last year, the country's semiconductor sales value reached about 40 billion US dollars, while the world's total was 213 billion US dollars.

In the next two years, China's semiconductor market will see a double-digit growth.

High Performance Computing Committee of China Computer Federation founded

(People's Daily, 2005-08-05)

The founding conference of the High Performance Computing Committee of China Computer Federation and its first academic conference were held in Beijing recently.

The committee will improve the overall quality of China's high performance computing and boost application of high performance computing.

China's high performance computing has reached world advanced level. The Shuguang 2004 supercomputer ranks the 10th in the world, making China "the third power" after the US and Japan.

**FPD Technology and Industrial Development Strategy Seminar convened
(MOST, 2005-08-08)**

On July 22, the "Strategy Seminar on Flat Panel Display (FPD) Technology and Industrial Development" convened in Mianyang, Sichuan Province. The seminar was sponsored by the Office of New Materials under the 863 Program and cosponsored by the Special Project Office of FPD Technology and Sichuan Changhong Electric Co., Ltd. Present at the seminar were DAI Guoqiang, Deputy Director-General of the Department of High and New Technology Development and Industrialization of MOST, CHEN Zhimin, Deputy Director-General of the High Tech Research and Development Center of MOST, LIU Dong, Deputy Director-General of the Department of Science and Technology of Sichuan Province, LIU Jiugui, Vice Mayor of Mianyang Municipal Government and WU Yingjian, Vice President of Changhong Electric Co., Ltd. Also present at the seminar were enterprise representatives from Changhong Electric Co., Ltd., TCL Corporation, Hisense Group, IRICO Group Electronics Company Limited, BOE Technology Group Co., Ltd., SVA Group and Beifang Color Crystal Group Co., Ltd. and scholars and specialists from such universities and research institutes as Changchun Institute of Optics, Fine Mechanics and Physics, Chinese Academy of Sciences (CIOMP), 55th Institute of the Ministry of Information Industry, Tsinghua University, Xi'an Jiaotong University, Huazhong University of Science and Technology and Shenzhen University.

The seminar was conducted by the means of conference report and informal discussion. During the conference report, QIU Yong, Head of the General Expert Group and WANG Baoping, member of the General Expert Team of the FPD Special Project under 863 Program respectively briefed the conference on the overall status of the project, the status of international standard for display technology and the 2005 SID Conference held in Boston, US. The display specialists invited by the conference delivered key-note speeches on the five aspects of PDP technology, OLED/PLED technology, FED/SED technology, LCOS technology and active matrix technology application.

**China makes breakthrough in anti-virus technology
(People's Daily, 2005-08-10)**

Chinese researchers have recently developed a software system that is able to perform proactive defense against computer virus. The software, named "Weidian proactive defense software", not only disinfects the known computer virus, but also disinfects and protects computer from unknown virus.

The software, developed by a research team headed by anti-virus expert Liu Xu, adopts action identifying and characteristic-identifying technologies, and is able to perform proactive defense against computer virus, worms and Trojans.

**Prof. Xiong Fanlun receives IFAC fellowship
(CAS, 2005-08-11)**



Prof. Xiong Fanlun, a CAS expert in artificial intelligence, was entitled the fellowship of the International Federation of Automated Control (IFAC) and honored with the IFAC fellow award at the 16th conference of IFAC held in Prague of the Czech Republic. Xiong is the only Chinese scientist selected from over 2,000 candidates around the world.

Thanks to their two-decade work, Prof. Xiong and his research team from the Institute of Intelligent Machines under the CAS Hefei Institutes of Physical Science have achieved rewarding results in information platform development for an agricultural expert system. Aiming at the cutting-edge intelligent technology and informatics, Xiong presented an approach for the automatic and semi-automatic knowledge acquisition based on machine learning, knowledge discovery and the induction mechanism of integrated intelligence. In his research into the platform structure & system integration of a farming intelligence system, Prof. Xiong succeeded in introducing a virtual model for plant growth into the intelligence system. He also presented several innovative algorithms of the intelligence computational theory and data mining.

By applying the achievements and integrating such technologies as component, network, agent, speech and visualization, Prof. Xiong and his research team founded a technological network for China's farming intelligent systems under the support of the National Key Technologies R&D Program and the national Program for Hi-tech Development. Their work has led to the development of more than 700 agricultural intelligent systems applicable to various sectors in the countryside such as farming, forestry, animal husbandry and fisheries. The systems have been used in 450 counties in 28 provinces, autonomous regions and municipalities throughout the country, covering about 6.66 million hectares in total acreage. Their work also contributed to the National Demonstration Program for Agricultural Expert System in China, which won a World Summit Award at the World Summit on Information Society in 2003.

Founded in September 1957 as a multinational federation, IFAC aims at promoting the science and technology of control in the broadest sense in all systems. It is also concerned with the impact of control technology on society. The Fellow Award is a major honor issued by the organization after the appraisal conducted by the IFAC's election commission in line with strict provisions. The awardees are mostly scientists, engineers or technical leaders who have made outstanding contributions in automated control or relevant fields, leading to promoting certain research developments in the auspices of IFAC.

E-brain centre to protect Net data**(China Daily, 2005-08-29)**

Officials in Guangzhou are considering establishing a large "virtual brain" to store networking data for governmental and financial institutions.

Sources with the city's information office said it has worked out an outline to construct a data centre for network disaster recovery, within the next two years.

"The project aims to cope with intensifying network intrusions such as attacks from Internet viruses, hackers and also some natural disasters," said an official with the office, who chose to remain anonymous.

The data centre will use storage-networking solutions to connect regional offices and remote sites for disaster-recovery purposes, said the official.

"All networking data from governmental and financial institutions will be stored in the 'virtual brain,' and it will not be operational until disasters occur," said the official.

At present, nearly 50 governmental and financial institutions in the city, including banks, have established networking operational systems.

Data may be lost altogether if institutions' overall networking systems are destroyed, the official stressed.

As a result, the establishment of a data centre is crucial to these institutions, which are aggregating storage, according to the official.

"The types of disaster may vary, but the goal is always the same. So the disaster recovery centre may help institutions' networking data recover as quickly and completely as possible," the official said.

The site of the "virtual brain," with an estimated investment of more than 100 million yuan (US\$12.3 million), will be outside the city's urban area, the official said.

"It is because the city's urban areas may also face some natural disasters, such as earthquakes," said the official.

1.5 Structure of Matter

China develops high-power 457-nm blue laser**(People's Daily, 2005-08-17)**

High-power all-solid-state blue laser, a key project of northeast China's Jilin Province, has passed appraisal by experts.

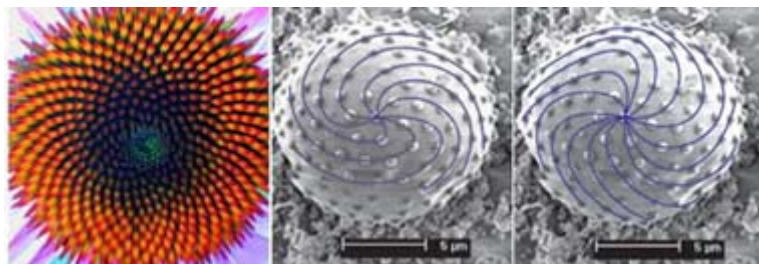
The laser is developed by Changchun New Industries Optoelectronics Tech. Co., Ltd.

Experts say, the research group made innovation in the designing of short optical fiber and laser cavity and achieved for the first time in China laser of 2.4w and 473nm and of 1.85w and 457nm.

The comprehensive performance of the blue laser has reached international advanced level.

High-power all-solid-state blue laser features small cubage, long lifespan, high efficiency and reliability. It can be widely applied in holographic optics, inspection on semi-conductor chip, undersea communication, color printing, laser display, bio-medicine, etc.

The technology was owned only by Germany, United States, Japan and Sweden.

Fibonacci series on microstructures
(CAS, 2005-08-18)


(A cone flower showing 21x34 Fibonacci spirals at the primordium (left), and stress pattern on a flattened Ag core/SiO₂ shell structure that can be grouped into 8 clockwise and 13 counterclockwise spirals (center and right).)

It is a big challenge for materials scientists to produce highly ordered micro- and nanostructures in a designed pattern with uniform size and shape. By controlling the geometry and the stress upon cooling, CAS researchers coaxed a microstructure to self-assemble into the triangular tessellation and Fibonacci number patterns on its surface. Their work 'Triangular and Fibonacci number patterns driven by stress on core/shell microstructures' was published on the August 5 issue of *Science*.

Fibonacci patterns come from a numerical sequence that fascinated the Italian mathematician Leonardo Fibonacci in the early 1200s. Each entry of the sequence is obtained by adding the two previous numbers together: 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144.... The patterns have been noted to frequently appear in biological settings, like the spiral arrangement of the florets, seeds, sepals and scales on such plants as pinecones, pineapples and sunflowers. For instance, people may find two sets of lines connecting the centers of each segment of the pinecone, 13 in clockwise and 8 in counterclockwise; or, in terms of sunflower spirals, the combinations can be in 21 by 34, 34 by 55 until 89 by 144.

Using a core of silver and a shell of silicon oxide, Prof. Cao Zexian, together with his colleagues Li Chaorong and Zhang Xiaonan from the CAS Institute of Physics, set out on examining stresses in a microstructure about 10 micrometres in diameter. They first heated a mixture of Ag₂O and SiO onto a substrate held at 1270 K, a temperature just above the melting point of silver but below that for SiO₂, and then let the system cool down step by step. The researchers discovered that the shell shrank much less than the core, and bumpy patterns appeared on the shell as a result. These bumps appeared in different patterns with markedly uniform size and shape, depending on the geometry of the primary supporting surface.

For a spherical microstructure, a uniform triangular pattern appeared, containing some defects to enable it to cover a spherical surface - these took the form of five- or seven-fold triangles around a vertex. For conical microstructures, on the other hand, cooling led to the formation of the bumps in a spiral pattern, which were arranged in two sets of spirals, running in opposite directions. Curiously, the numbers of spirals in each pair of spiral sets were always adjacent members of the Fibonacci series. The researchers found sets with 5 by 8, 8 by 13, and 13 by 21 spirals.

This is the first time that the triangular tessellation and Fibonacci number patterns have been grown with inorganic materials on a micrometre scale, according to the CAS researchers. They further revealed the formation mechanism and conditions for the patterns on the basis of an analysis on their structural characteristics. "From our results we see that it is the geometry of the

supporting surface, on which the stress strives for a minimal strain energy, that tips the formation of patterns," says Prof. Cao. It is speculated that "The various seemingly different patterns for botanic elements such as sepals, seeds, and florets can be explained by the unique mechanism to minimize the total strain energy under a given geometric constraint, without resorting to any genetic or biochemical factors."

The technology could find a use in the mass-production of mesoscale structures over a large area, according to researchers. It demonstrated that highly ordered patterns can be fabricated on core/shell structures through stress-driven self-assembly induced by controlled cooling. The patterns obtained on nonplanar surfaces "... may be of importance in applications such as photonic crystals, since scattering events at such sites will show some coherence, and technologically it sidesteps the difficult intentional introduction of defects.

1.6 Transport and Space

CAS researchers develop advanced driving systems for electric buses in Beijing (CAS, 2005-08-01)



The launching ceremony for a demonstration project of all-electric bus system was held recently in Beijing.

After the ceremony, some 20 buses will hit the road in two batches, including six equipped with a new driving system developed by researchers from the CAS Institute of Electrical Engineering.

According to CAS researchers, their technology could make the vehicles up to advanced world level in late 20th century. For instance, its vector-controlled system contains a 100/160KW AC asynchronous motor with the peak power of 160kW and peak torque of 850Nm, which could meet the start, uphill and acceleration needs of the vehicles in full capacity. Its nearly 90% efficiency and energy regenerative control features a upgrading of the vehicle's range on one charge. And its CAN communication protocol ensures the stable communication among various systems of the bus.

China launches 21st science satellite by Long March Rocket (Xinhua Net, 2005-08-02)

China succeeded in launching its 21st return science and technology experimental satellite from the Jiuquan Satellite Launch Center in northwest China Tuesday.

The satellite was projected with a Long March-2III Rocket Carrier at 15:30; about 20 minutes after it took off, the satellite entered the preset orbit, marking the success of the launching.

The satellite will be used to carry out scientific research, land surveying and mapping, and experiments in outer space. The Xi'an Satellite Measuring and Control Center will monitor the movements of the satellite.

It has been the 86th launching of the Long March series rockets, and it is the 44th successful space launch by China since October 1996.

In 1975, China launched its first return satellite from the Jiuquan base.

China ambitious for more in aerospace

(Xinhua Net, 2005-08-03)

Despite its gaps with some western countries that enjoy more advanced space and satellite technologies, China still wants to become a competitor in the space field by means of carrying out more major projects.

"China's space technology still lags behind the advanced nations and is increasingly not adapted to the rapidly growing demand of the country's modernization process," said Yuan Jiajun, president of the Chinese Research Institute of Space Technology.

Compared with other space powers, one of the key outstanding problems that China suffers is the lack of innovation capability, which, as a rule, would impact a player's overall competitiveness in the end.

"Innovation will undoubtedly play a core role in the development process of China's space industry," said Sun Laiyan, president of the China National Space Administration. "We must take the improvement of innovation capability as the top task to achieve."

In the near future, he said, the implementation of new major space projects, which are often the embodiment of national space strategy, should be the major pushing factor to lift the level of China's space industry.

To date, China has sent more than 60 satellites and five spacecraft into orbit in 35 years since its first satellite, "Dongfanghong I", was blast off in 1970.

However, compared with advanced countries, China's space industry remains at a starting phase given its small share in the global space service market and limited contribution to the national economy.

China is now in the process of drawing up a middle and long term development plan for its space industry, Yuan said, which will help keep China at a relatively leading status and thus meet the main needs appearing during China's modernization process.

"We'll develop more satellites so as to form a joint earth observation system and a new-generation regional satellite navigating and positioning system," said Yuan.

The research and development of communications and science experimental and exploration satellites will also be the key parts so as to form a science experimental satellite series.

According to Yuan, China's now pressing on with the first phase of its moon exploration project so as to realize China's first ever circumlunar flight by 2006.

"China also welcomes cooperation from overseas," said Sun, claiming China is considering optimization of resources from both home and abroad and to shape a multilevel and international collaboration structure.

"China is facing a new period in building a well-off society and we must enhance the senses of

pressure and mission to promote new historical leaps in China's space technology," said Yuan.

China's fastest train fulfils passenger transportation mission

(People's Daily, 2005-08-03)

At 10 a.m. August 1, 2005, "Chinese star", the electric carriage with the highest design speed in China, arrived at the Shanhaiguan Railway Station in Hebei Province and completed its first passenger transportation mission. The train, setting out from Shenyang with 200 passengers onboard, completed the 400-kilometer journey within 3 hours.

The electric train "Chinese Star" has a design speed of 270 km per hour, and is capable of carrying 726 passengers at most. In 2003, the train set the record of fastest speed in China, 312.5 km per hour. After two years' transportation experiment, it is officially put into use for passenger transportation on August 1.

China to launch lunar probe satellite in 2007

(Xinhua Net, 2005-08-09)

China is expected to launch its first ever lunar probe satellite in 2007, given that the country's moon exploration project has so far been proceeding smoothly, according to the China Aerospace Science and Technology Corporation (CASTC).

Addressing a forum on space technology held here Tuesday, Ye Peijian, chief designer of the satellite with the CASTC, said that Dubbed "Chang'e-I", China's first lunar orbiter is scheduled to be launched in 2007 for the country's first fly-by mission.

"The design of various plans which serve to meet different situations and simulation satellites has finished and all related professional experiments are going on," said Ye.

The research and development work of real-use satellites will begin in September, he said, noting that one to two real-use ones will be developed.

"After the lunar flight, China will carry out soft landing exploration and auto inspection missions on the moon, with the core part being the realization of landing probes on the moon surface and carrying out scientific exploration," he said.

"A basic space flight engineering system, including that for moon soft landing probes and moon surface inspectors, should then be established," he said.

According to Ouyang Ziyuan, chief scientist of the moon probe project, China will carry out various projects on the materials, dynamics, radiation, astronomic and other fields.

So far, China has developed some demonstration probes for the coming moon flight, which is armed with various apparatuses like a moon-probing radar and infrared spectrum equipment.

China's first UAV remote sensing system

(China News, 2005-08-10)

China's first high-end multipurpose unmanned aerial vehicle (UAV) remote sensing system succeeded in its maiden trial flight yesterday morning at Huangguoshu Airport in Guizhou's Anshui City, marking that China's UVA earth observation technology has entered the world's advanced array.

The first high-end multipurpose UAV remote sensing system, jointly developed by Peking University and China Guizhou Aviation Industry Group, took the initiative to adopt integrated, intelligent and high-resolution spatial data acquisition technology. It possesses application ability

of aerial remote sensing in terms of reliability, flight altitude, stability, navigation accuracy and operation and production cost. Its composite performance has already reached the domestic leading level and is able to compete with developed countries.

As an important means to acquire spatial data, UAV remote sensing technology has many advantages, such as long flying time, real time transmission of images, ability to probe in high-risk areas, low cost and agility. As an effective supplement of satellite and manned aerial vehicle remote sensing, UAV remote sensing has been applied widely in foreign countries.

Relevant experts analyze that UAV market has a large potential to develop. With the maturity and application of China's UAV remote sensing, the technology can be widely applied to a number of areas, including land and resource census, meteorological research and natural disaster monitoring, serving the national economic construction.

Preparatory meeting for the 14th ITS World Congress held (MOST, 2005-08-16)

The 1st Plenary Meeting of the Organization Committee of the 14th ITS World Congress 2007 Beijing convened recently at the Ministry of Science & Technology with the presence of more than 30 participants including MA Songde, Director of the Organizing Committee and Vice Minister of Science & Technology, JI Lin, Standing Deputy Director of the Organizing Committee and Vice Mayor of Beijing Municipal Government and representatives of the Ministry of Science & Technology, Ministry of Communications, Ministry of Public Security, Ministry of Construction and the related government departments of Beijing.

China won the sponsorship of the 14th ITS World Congress at the 10th ITS World Congress held at Madrid Spain in September 2003. So far, the orderly preparation is underway. In May 2005, the State Council granted official approval of the Beijing 2007 ITS World Congress. The Organizing Committee and its Office of 2007 ITS World Congress was established in the same month.

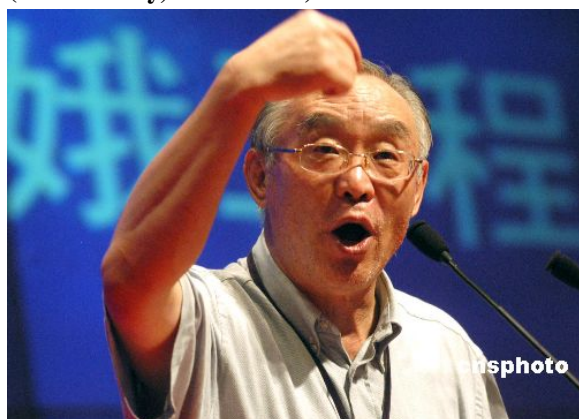
LIU Xiaoming, Deputy Director-General of Beijing Municipal Committee of Communication, presided over the Meeting. The official establishment of the Organizing Committee and Office of Beijing 2007 ITS World Congress, together with the staff member, were announced at the meeting. XU Guanhua, Minister of Science & Technology was elected the Honorary President of the Organization Committee. Then, Deputy Director-General LIU Xiaoming made a report on the preparation proposal of the World Congress. Afterwards, the participants carried out discussions over the time, location, logo and slogan of Beijing 2007 ITS World Congress, and determined the duties and responsibilities for the various member units of the Organization Committee. It was clarified at the Meeting that Beijing municipal Government should be responsible for the specific preparation and organization activities of the World Congress. Vice Mayor JI Lin noted in his summary speech that Beijing is confident that this World Congress will be well prepared to demonstrate China's ITS development and Hi-tech Olympics to the rest of the world. Vice Minister MA Songde pointed out that Beijing 2007 ITS World Congress should be organized and sponsored in such a way that ITS becomes popular among the public so as to promote the S&T level in China's traffic system, further drive the development of ITS industry in China. He stressed that the 2007 ITS World Congress should adopt an innovative way of exhibition so as to demonstrate China's achievements in ITS as well as the simulation effect of the intelligent traffic system of Beijing Olympics and display in real time the intelligent traffic system of Beijing. Vice Minister MA affirmed the early preparation efforts made by the member units of the Organization

Committee and extended his gratitude to the various departments and organizations for their great supports and cooperative efforts, expecting that continuous efforts shall be made by the member units of the Organization Committee to facilitate proper preparation and guarantee the success of Beijing 2007 ITS World Congress.

This Meeting represents the initiation of the preparation for Beijing 2007 ITS World Congress and will further drive the rapid development of ITS technology and application in China. It is to our belief that Beijing 2007 ITS World Congress will be an eye-catching world event.

First unmanned lunar mission set for 2007

(China Daily, 2005-08-16)



(Luan Enjie, chief commander of the country's lunar exploration programme introduced the three-stage of programme in Beijing on Aug. 15, 2005.)

China is planning a three-stage programme of unmanned lunar missions, with the aim of bringing back rock samples from the moon in around 2017, aerospace officials said yesterday.

"If there are no major problems, China's first unmanned satellite to the moon will be launched in 2007," said Luan Enjie, chief commander of the country's lunar exploration programme.

This is the second time in a week Chinese scientists have confirmed the plan. On August 9, Ye Peijian, chief designer of the orbiter, said research and development of the satellite is going smoothly.

Luan made the latest remarks at a ceremony yesterday in Beijing to kick off a one-and-half-month campaign to solicit designs for a moon exploration programme logo.

The lunar orbiter, dubbed Chang'e-1 (CH-1), is named after the Chinese legend of a young fairy who flies to the moon. The orbiter weighs more than 2 tons and, if all goes to plan, will fly for a year, Luan said.

As the first phase of a three-part lunar probe programme, the unmanned fly-by mission will collect information for three-dimensional mapping of the moon's surface as well as studying its mineral content.

In the second phase, scientists plan to put a "lunar vehicle" on the moon to explore the lunar surface in around 2012.

Through the wheeled robotic explorer, scientists hope to get to know the moon's environment and analyze the composition of lunar rocks, Luan said.

Three technological difficulties for lunar probe

(People's Daily, 2005-08-16)

If there is no major problem, Chinese people will have their long-cherished moon dream realized in 2007, said Luan Enjie, chief commander of China's lunar orbiting program on August 15. Luan said, before that, three technological obstacles need to be conquered.

First, orbits designing. Since the program involves the earth, the moon and the satellite, the designing for the orbit of the moon-probe satellite is more complicated than that for the relative movement of earth and satellite. Luan said, deep space exploration is characterized by the limited "launch window" (a term used to describe a time period in which a particular mission must be launched). The moon, the earth and the launching complex are all moving so a proper position for all of them is needed, but the period for timing is rather short.

Second, the tracking system. The most difficult test for lunar probe is on the tracking system, whose transmission should be able to reach far enough. Currently the longest distance China's satellites ever reached on geosynchronous orbit is about 40, 000 kilometers. But the moon is about 400, 000 kilometers from the earth. This brings a challenge to the transmission capability of the tracking system. "During the lunar exploration, we should be able to hear and see what's going on with the probe, and the moon orbiter Chang'e-I should also be able to hear us. This is also a challenge to China's deep space tracking technology," said Luan.

Third, environment. Luan said, the moon probe is made on the earth, but the temperature difference is 300 degree. It must be guaranteed that the materials, equipment and machinery work well under such a condition. This is a test for China's aerospace technology, the designing capability of technicians as well as the comprehensive ability of China in space activities.

Sources say, these difficulties are as well the areas of innovation. Expert says, the scientific and technological questions mentioned above must be solved for the program to succeed. However, since they involve the forefront areas, if China solves them, it will achieve a leap forward, which will be a strong driving-force for the country's scientific and technological development.

China's fastest train starts operation

(China News, 2005-08-17)

The fastest train in China, China Star, started operation On Aug. 16th along Qinhuangdao-Shenyang Railway. It takes only 3 hours to finish the 400-kilometer journey at an operation speed of 160 kilometers per hour.

China Star is a high-speed electric motor train unit independently developed by China with complete independent intellectual property. The designed speed is 270 km per hour, and the full load reaches up to 726 passengers.

China to send pig sperm to space

(People's Daily, 2005-08-17)

China will take semen from pedigree pigs on its second manned spacecraft, Shenzhou VI, to study whether exposure to space alters the genetic make-up of the sperm, in hope of producing pork of better quality

About 14 grams of pig sperm will be taken into space in October this year. Under the effect of microgravity, high radiation and strong magnetic field, DNA of the sperm may alter, said Wang Jinyong from Chongqing Academy of Animal Husbandry Science.

After four or five days in space, the sperm will be brought back to Earth and used to fertilize pig eggs in test tubes. The DNA may change for better or for worse, and we must preserve good

changes and eliminate bad ones so as to improve quality of pigs, Wang said.

This is the first time Chinese scientists conduct a sperm experiment in space, before that they have brought seeds to space. They say seeds returned from space will result in higher yield and more nutritious fruits, and many such fruits and vegetables have been put into mass production in China.

Jupiter's moon more likely to harbor life

(Xinhua Net, 2005-08-21)



When a spacecraft was launched to search for water and life on Mars on Aug. 12, some scientists also cast their eyes on the more remote Europa, one of Jupiter's moons, with the hope that the ice-covered satellite is more likely to harbor life than Mars -- if indeed life exists somewhere else in our Solar System.

"So far as we known, the chances to find life beyond the Earth are very, very slim, while the chances might be a little more likely in Europa than Mars," said Simon Conway Morris, a noted Professor of evolutionary palaeobiology at Cambridge University.

On Mars if there was life, it would most probably be extinct and you would need paleontologists to go to the Mars and study possible biological's structures and sediments. Only paleontologists are trained to study extinct life, he said.

It takes longer to get to Europa than to get to Mars since Europa is located in the outer solar system.

Robert Gaines, a paleontologist with Pomona College in the United States, said, "the Europa is extremely cold and hostile for life and people still have no idea about its sub-surface geology."

"It would be surprising to find life on the planet, but many surprising things have come true," he added.

Europa is roughly the size of the Earth's moon and covered with a thick crust of ice.

Scientists speculate life forms may exist under the crust of ice, living in the oceans below.

An experiment by Stanley Miller in 1953 indicated that with water, certain gas and heat, the substances essential for life could be formed in certain reaction.

Based on the experiment, scientists believed life might exist on Europa since the satellite contains water and the heat caused by the tidal tug of war with Jupiter and other neighboring moons.

Plans to land on the moon are being discussed in Europe and the United States.

One of the current missions planned by NASA within the next three years is an orbiter mission around Europa. It will orbit the moon and scan the surface with radar to determine the thickness of the icy crust, and possibly the depth of the oceans underneath.

Last week about 15 paleontologists from inside and outside China, including Conway Morris and

Robert Gaines, studied rocks and fossils in southwest China's Guizhou Province, which boasts excellent deposits of earlier life on the Earth. They came to China for an international symposium on Cambrian System, which is being held in Nanjing, capital of east China's Jiangsu Province.

New height of world's railway born in Tibet

(Xinhua Net, 2005-08-25)

A pair of rails were laid down at 5,072 meters above sea level in Tibet's Amdo Wednesday morning, making a new topnotch of the world's railways.

The track laying location at Tanggula Mountain Pass is 255 meters higher than the century-old record of world's railway altitude previously kept by Peru at 4,817 meters above sea level for its tracks from the Pacific coast up to Andes range.

The whole project extends 1,142 kilometers on the Qinghai-Tibet Plateau, dubbed the "roof of the world".

Linking Gel mud of Qinghai with Lhasa, Tibet's regional capital, the railway also boasts the world's highest railway station at 5,068 meters above sea level and the world's highest channel on frozen earth at 4,905 in elevation.

With an average altitude of 4,500 meters, it is undoubtedly the world's most elevated railway, of which 960 kilometers locate 4,000 meters above sea level.

High altitude and lack of oxygen, however, bring world-class enigmas for constructors.

About 550 kilometers of the railway runs on frozen earth, which "poses a major challenge to the railway construction," said La Youyu, deputy director-general of the headquarters for the Qinghai-Tibet Railway construction.

"Frozen earth is vulnerable to climate change, which will thaw in summer and distend the railway base in winter," La said.

To avoid possible dangers, the deputy director-general said, designers of the railway used technology of heat preservation, slope protection and roadbed ventilation in frozen earth areas.

COSTIND set up China's lunar exploration project center

(MOST, 2005-08-26)



Staffs watch videos at the lunar exploration project center of COSTIND in Beijing, capital of China. The center was set up officially by the Commission of Science, Technology and Industry for National Defense (COSTIND) on August 22, 2005, which indicated China's moon probe project had since embarked on a road of standardization and specialization. The center is mainly responsible for organizing system demonstration, general design, implementing lunar probe engineering projects, and undertakes routine work of the office of the moon probe engineering leading group.

Satellite returns home

(Xinhua Net, 2005-08-29)

A science satellite China launched early this month returned home Monday, according to official sources.

The 21st Chinese-made experimental satellite landed under the precise control of the Xi'an Satellite Measuring and Control Center, the sources said.

During its 27-day voyage on the orbit, the satellite completed all its tasks including space surveying and scientific tests.

So far, China has recovered 20 of these return experimental satellites.

China launches 22nd experimental satellite

(Xinhua Net, 2005-08-29)



(March-2IV rocket is launched at the Jiuquan Satellite Launch Center in northwest China's Gansu Province August 29, 2005. The rocket carried to the outer space China's 22nd return science and technology experimental satellite, that will be used to carry out scientific research, land surveying and mapping, and experiments in the outer space.)

China sent its 22nd return experimental satellite onto the orbit with a Long March-2IV rocket carrier from the Jiuquan Satellite Launching Center, in the northwest, Monday.

The satellite has entered the preset orbit and is now operating normally, according to the Xi'an Satellite Measuring and Control Center, in northwest China.

The satellite will carry out a series of jobs on scientific research, land surveying, mapping and space-technological tests.

It is the country's 87th launching of satellite over the past 35 years and the 45th successful launching since October 1996.

It is also the seventh flight of the Long March-2IV family. Long March-2IV, a two-section, normal temperature rocket, is 40.6 meters in length and 251 kilograms in flying-off.

2 News from Universities

Tsinghua University offers needy students financial aids

(People's Daily, 2005-08-17)

Beijing-based Tsinghua University announced Tuesday it was establishing a new three-million-yuan (360,000 US dollars) special fund to aid the newly-enrolled students from needy families.

A source with the university said the funds are a part of Tsinghua's "Green Passage" program, initiated in 1998, aiming to provide financial aid for the needy students to enrol in the university.

The new Students with financial difficulties will acquire interest-free loans from the university to pay their tuition fees and accommodation charges.

Tsinghua University will provide a maximum of 6,500 yuan (about 785 US dollars) to a needy student in the day when he or she gets enrolled in the university.

In 2004, the "Green Passage" program helped 454 new students get enrolled on time with a total of 2.64 million yuan (about 319,000 US dollars).

This China's leading university vowed "not to allow diligent and talented students to drop out due to financial difficulties".

It has opened various channels of financial aid, such as launching scholarships and subsidiary programs and providing part-time work opportunities.

In the 2004-2005 school year, 3,210 students with financial difficulties studied in Tsinghua, accounting for 24.3 percent of the total undergraduates.

Tsinghua university spends more than 20 million yuan (about 2.4 million US dollars) aiding needy students every year.

China National Grid Hefei Center nestled in University of China Science and Technology

(People's Daily, 2005-08-26)

August 25 that China National Grid Hefei Center held its inauguration ceremony in Network Information Center of University of China Science and Technology, marking a new stage of USTC's grid studies.

The grid is considered to be the third stage of Internet development. Grid technology integrates the whole Internet to an enormous virtual supercomputer, realizing worldwide source sharing of calculation, storing, data, information, experts and equipment.

Xiamen University and US-based SUN to co-build joint lab

(MOST, 2005-08-29)

An agreement was recently secured between the Software School of Xiamen University and SUN, a US-based multinational, to co-build a joint lab of open technologies and develop a substantial partnership in multiple fields of cooperation including HR training and education, discipline construction, social service, fundamental R&D of professional software and educational certification. First of all, joint efforts will be made in the training and education of software designers and professionals of Java and UNIX operating systems; secondly, a professional and technical lab platform and student practice base will be jointly built and, in the new semester, SUN is going to donate a batch of professional servers and workstation equipment for learning and research purposes to the students involving a total value of RMB250,000; thirdly, advisory, R&D

and training supports are to be provided to the IT revolution of Xiamen-based enterprises and particular supports are to be provided to enlarge the scope of application of the ASP service platform technology among the small and medium-sized enterprises so as to create an upgradeable IT platform for these enterprises at a relatively lower cost.

Debate over assessment of China's educational system reheated

(People's Daily, 2005-08-30)

The longtime debate over how to assess China's educational system recently heated up with comments from a prominent Chinese American scholar.

Chen Ning Yang, a Nobel laureate in physics, has set off a barrage of criticism and rebuttal by saying on Aug. 14. "China's higher education is quite successful in teaching the young people."

According to a survey by China Youth Daily, only 2.1 percent respondents took his side, reported Monday's China Daily.

Yang, who has taught or lived in China for an accumulative total of 20 years and in the United States for 60 years, based his appraisal on a lifetime of observations.

The Tsinghua University freshmen he has taught, for example, are "more solid in their knowledge, more attentive in class and more hard-working than their US counterparts."

He said they can rattle off mathematical formulae with ease while US college freshmen are still playing around and not yet settled into a serious learning mode.

However, these are exactly the symptoms of malaise in China's education in the eyes of critics.

The current system cannot create first-class talent, according to Shing-Tung Yau, a Harvard professor whose piercing censure of the system has been reported as the most convincing refutation of Yang's observations.

"Everybody is trying to create the perfect system. But there is no such thing. The best way to meet the needs of children is to take the best from every system and just practice it," said Diba Kader, a teacher at Beijing City International School.

It turns out that Professor Yang's assessment of China's education is much more comprehensive and nuanced than what was quoted in the press, said the paper.

"There is no simple answer for the question of which educational system is better. It varies with thousands of schools and millions of children," said Yang.

"My conclusion is, for the majority of students, the Chinese ethos is feasible because it will guide them to the road of being useful to the society (or social functionality). But for the top 5 percent of the kids, who are the smartest, the American system is much better because it gives full play to their potential," he said.

3 Innovation Management

Projects under 2005 State Key New Product Programme approved

(MOST, 2005-08-01)

1751 projects have been arranged under the 2005 State Key New Product Programme, concerning 9 high-tech areas. 333 projects are on electronic information accounting for 19.02% of the total projects; 91 projects on aerospace and communications accounting for 5.02%; 431 projects on opto-mechatronics accounting for 24.61%; 50 projects on biotechnology accounting for 2.85%; 434 projects on new materials accounting for 24.79%; 117 projects on new energy source and high-efficiency energy-saving technology accounting for 6.68%; 77 projects on environmental protection accounting for 4.40%; 136 projects on medicine and medical engineering accounting for 7.77%; 82 projects on agriculture accounting for 4.68%.

The 2005 new product programme gives more attention to the integration of various technological programmes. Priority is given to industrialization of 234 projects of National Natural Science Foundation of China, 863 Programme, and National Key Technologies R&D Programme. High-tech enterprises undertake 1320 projects, accounting for 75.39% of the total; 1106 projects have been approved patent or other IPR, accounting for 63.16% of the total; China's western region undertakes 245 projects, accounting for 14% of the total; 82 projects are agricultural or related projects, accounting for 4.68% of the total.

Projects under 2005 Extension Program for Key S&T Achievements approved

(MOST, 2005-08-01)

350 projects have been included in the 2005 Extension Program for Key Science and Technology Achievements. Of these, 202 are industrial projects that promote application of high-tech in traditional industries, improve production efficiency and product quality, increase energy saving and reduce consumption, enhance comprehensive utilization of resources and environment protection; 148 are agricultural projects that focus on spreading technologies of high quality, high productivity, high efficiency, ecological agriculture, and modern agricultural technologies that improve the quality competitiveness of farm produce.

These projects can be widely spread for application in traditional industries and social welfare. They will play an important role in optimizing the industrial structure, reasonable utilization of resources, environment protection, advancing industrial technology and promoting social progress.

Projects under 2005 Program on Trade Promotion through S&T approved

(MOST, 2005-08-01)

After peer review and evaluation organized by the Ministry of Science and Technology (MOST), 131 projects have been included in the 2005 Program on Trade Promotion through Science and Technology. There is a significant increase over last year in projects with independent IPR and those that have been independently developed for export. 105 projects included in the Programme have patents, accounting for 80% of the total, doubling that of last year. Of these patents, 28 have invention patents accounting for 26.6%. Enterprises have markedly increased their awareness for IPR protection. Of the 131 projects, 6 are on the service system development, accounting for 4.6% of the total; 10 on key technologies, accounting for 7.6%; 20 on export bases, accounting for 15.3%; 95 on export demonstration projects, accounting for 72.5%. The implementation of the

projects will greatly promote trade through S&T, improve international competitiveness of high-tech products, and increase export of high-tech products.

CAS maps out blueprint for its future development

(CAS, 2005-08-02)



(The meeting is chaired by CAS President Lu Yongxiang.)

From July 25 to 29, the summer session of the Enlarged Meeting of the Leading Group of CPC at CAS was held in Beijing. Chaired by CAS President Lu Yongxiang, who also heads the Group, the meeting was attended by the CAS leaders and CAS bureau directors.

Focusing on further buildup of the innovation capacity of the Academy, participants of the meeting made an in-depth discussion on policy measures for implementing the third phase of Knowledge Innovation Program (2006-2010), and the guidelines and concrete moves for developing S&T innovation bases at CAS. The meeting stressed that the work of the next five years should be carried out through innovation and reform, so as to open up a new prospect for CAS development. The meeting also made work arrangements for the second half of the year.

China to select new national key labs

(People's Daily, 2005-08-15)

China will select a batch of new national key laboratories for the research of livestock diseases, immunity, energy and water resources and space while upgrading and readjusting the existing ones, according to the [Ministry of Science and Technology](#).

The selection of new national key labs will focus on subjects which are of great importance to China's development, such as population and health, agriculture, energy, the ecological environment and high-tech manufacturing, a ministry official said Monday.

Candidates for the national key labs should be creative in frontier sciences, have outstanding achievements in key technological innovation or system integration, and be capable of providing scientific advice to support the country's effort to maintain state rights and benefits.

The new key labs, to be equipped with advanced facilities, will conduct cooperation with academic circles both at home and abroad, take part in international joint scientific projects and attract international expertise for research, said the official.

Construction project of CAS institute in Ningbo starts

(CAS, 2005-08-19)



The cornerstone-laying ceremony for the campus of the newly established CAS Ningbo Institute of Materials Technology and Engineering (NIMTE) took place on August 18 in Ningbo, a coastal city in east China's Zhejiang Province. CAS President Lu Yongxiang and Governor of Zhejiang Province Lu Zushan were present at the event.

Jointly funded by CAS, and governments of Zhejiang Province and Ningbo City, NIMTE is a non-profit R&D organization with the objective of becoming the technological authority of relevant industries' alliances in local area, which boasts an engine of economic progress and high-tech development in China. The total budget for the first-term building and recruitment is 300 million RMB (about \$35 million). The construction will be completed by the end of 2007.

China fosters 30,000 postdoctoral students (People's Daily, 2005-08-22)

China has fostered more than 30, 000 postdoctoral students since the postdoctoral program was introduced 20 years ago. Seven of them have been elected as academicians of Chinese Academy of Science and Chinese Academy of Engineering, and postdoctoral students have won 13.7 percent of China's national scientific awards. At present, 12, 000 are working in postdoctoral research stations and working stations in China, revealed official with Ministry of Personnel at a postdoctoral forum held in Urumqi.

However, there are still gaps between China and developed countries in postdoctoral education in four aspects: i.e., gap in development of national economy; the gap between tutors; gap in innovation capability during fundamental and undergraduate education; the gap in mechanism for fostering talents.

China to build up world-class science parks (Xinhua Net, 2005-08-25)

Minister of Science and Technology Xu Guanhua said Thursday that China is going to build up two or three world-class science parks and develop top technology companies in the country.

"China is going to start a new round of investment in science parks to increase the country's international competitiveness and innovative ability," said Xu at a national working conference on science parks.

A total of 53 state-level science parks have been set up in China, covering only 0.01 percent of China's territory and generating more than four percent of the national GDP, the minister said.

In the first half of the year, the output value of these science parks was 1.5 trillion yuan (about 186 billion US dollars), up 26.6 percent year on year.

By the end of 2010, the per capita budget for research fellows working for these science parks is expected to top 150,000 yuan (about 18,500 US dollars), compared with 120,000 yuan (about

14,800 US dollars) in 2004, while the number of these people will make up 20 percent of the total staff, Xu said.

According to another official from the ministry, Zhang Zhihong, 40 percent of the staff working for these science parks hold higher educational degrees, including 106,000 masters and 20,000 doctors.

In 2004, 16,000 students who had finished their overseas studies were recruited by Chinese science parks.

CAS sets up a bureau of planning and strategy

(CAS, 2005-08-29)



The launching ceremony for the CAS Bureau of Planning and Strategy was held on August 26 in Beijing. CAS President Lu Yongxiang and other CAS leaders attended the meeting.

Headed by Mr. Pan Jiaofeng, and based on the former CAS Bureau of S&T Policies, the new administrative organ will be in charge of the study, formulation and dynamic management of the Academy's development planning; the strategic and policy research into the Academy's development; providing advices on major issues in the reform and development; drawing up important documents for CAS leaders; making systematic analyses on national socio-economic development trends so as to pinpoint the strategic demands of the country; making systematic analyses on world science development trends as to keep track of the world S&T frontline development; the establishment of an S&T evaluation system and its management; management of the CAS system of science popularization, publication and library; and implementation of policies, codes and regulations at the Academy, etc.

4 China's International Science Cooperation

Sino-US Joint Secretariat for rural and social S&T cooperation held a working meeting (MOST, 2005-08-04)

On July 8, 2005, the Sino-US Joint Secretariat held the working meeting in Beijing to study the next-step cooperative plan and specific work arrangements. The meeting also made tentative personnel readjustment of the secretariat due to work change of some members. The meeting covered following areas: training program in the US, HACCP cooperation, the 2nd Sino-US International Workshop on Agricultural Science Park, the project of green agricultural product circulation system, the 2nd Conference on Sino-US Relations, and personnel change of the joint secretariat.

The two sides also exchanged opinions and reached partial consensus on issues concerning the promotion of Sino-US Agricultural Technology Commercialization (or technology transfer) Center and preparation for the establishment of the International Academy of Agricultural Sciences. It is mutually agreed that extensive discussion will be conducted on the above-mentioned cooperative plan in the next-step work and at the relevant meetings to be held in the second half of this year. It is also agreed that specific schemes will be put into effect gradually.

The Department of Rural and Social Development and Texas A&M University, Executive Secretary of the US side, jointly presided over the meeting. Present at the conference were China Rural Technology Development Center, enterprises representatives involved in the cooperative projects, and other US delegates.

Astronomy telescopes shared worldwide (Xinhua Net, 2005-08-05)

It is no longer a dream for a Chinese student to use an astronomy telescope in the United States to observe the galaxy at home.

Just by connecting to the Hands-On Universe (HOU) programme on the Internet, students can operate telescopes in the United States, but also in Japan, Australia, Germany, and Pakistan and can even use several telescopes at the same time.

It's all possible through the HOU programme. From Monday to yesterday, Chinese scientists, educators, students and others who love astronomy gathered in Beijing for HOU's annual conference.

HOU began in the United States as the computer and Internet became the method for many astronomers to acquire and analyze data. It provides a platform for people worldwide to share the telescopes of many countries connected to the Internet, as well as the latest data.

Carl Pennypacker, a professional astronomer from the University of California-Berkeley in the United States, established the programme. At first, it was only for professional observation and research.

"I have some friends of teachers. They suggested that we bring it to students, so we did," Pennypacker said. "Soon we had students discovering supernovae, asteroids, or perhaps most importantly, they discovered that they liked science and could actually do science."

Now more than 1,000 teachers from 15 nations are using HOU. China is a new member.

Guo Hongfeng, a senior engineer from the National Astronomical Observatories, got to know HOU from its conference last year in Russia. She found the programme could be valuable if it

spread to China.

"Any person who loves astronomy can benefit from the programme," Guo said.

**Workshop on CAS-Russian cooperation held in Beijing
(CAS, 2005-08-08)**



A CAS workshop on cooperation strategy with the Russian scientific community was held on August 2 in Beijing. The conference was presided over by Prof. Guo Huadong, CAS vice secretary-general and director of the CAS Bureau of International Cooperation, and attended by more than 50 administrators and scientists from 20 or so CAS institutes. CAS vice presidents Chen Zhu and Cao Jianlin spoke at the meeting.

Collaboration with Russia is a very important part of CAS international S&T cooperation, says Prof. Chen Zhu, as the country has a very long history, a people with strong will and a scientific community with profound foundations in basic research and high technology development.

On the basis of a review of the experience on cooperation with the Russian side, participants made discussions on comparative advantages of the two sides and possible approaches for future cooperations. According to Prof. Guo Huadong, the meeting is only one session of a workshop series on CAS international cooperation strategy. Other sessions have been planned for such issues as cooperation with Europe, US, Japan, bordering countries, and developing world.

**MOU for Long Term Cooperation between MOST and UNDP signed
(MOST, 2005-08-17)**

The Memorandum of Understanding for Long Term Cooperation was signed in Beijing on 16 August, 2005, by XU Guanhua, Minister of Science and Technology, and Mr. Khalid Malik, representative at the UNDP office in China. It signifies a new stage of closer and more steady cooperation between the two sides.

According to the implementation framework of the Memorandum of Understanding (MOU), the two sides will give emphasis to their cooperation in such areas as science and technology poverty relief, promoting rural development with science and technology, environment, energy and sustainable development. Efficient bilateral cooperation will be strengthened and promoted by various forms of means such as projects, symposiums, consultative conferences, meetings on special topics, etc. This will serve as a pivot for continuously raising the quality and level of cooperation, so that a cooperation partnership can eventually be set up for long term stable cooperation for mutual benefits and win-win results.

UNDP is the largest multi-lateral aid regime in UN development system. Four cooperation projects have been carried out by MOST and UNDP since 1997. They are "Capacity Building for

Spreading the Example of the Pattern of China's Science and Technology Poverty Relief", "Capacity Building for China's IT and Telecommunications Poverty Relief", "Capacity Building for Raising China's Farm Produce Processing Capacity under the WTO Framework", and "Poverty Relief Capacity Building for Farmers of China's Poverty-Stricken Areas to Participate in Dairy Production". In addition, they have also implemented actions such as fuel battery car and Clean Energy. UNDP has provided USD12.4 million in aid. By now the two sides have set up a preliminary cooperation partnership that is comparatively steady, and will go on to explore new areas of cooperation.

Chinese Humboldtians to convene in Beijing

(CAS, 2005-08-18)

The 2005 Conference for Chinese Association of Alexander von Humboldt Fellows will take place on October 14 to 15 at the Sino-German Science Center in Beijing.

Chaired by CAS President Lu Yongxiang, who is also president of the Association, the conference will bring together several hundred Chinese Humboldt fellows and their German colleagues. Dr. Georg Schutte, General Secretary of the Alexander von Humboldt Foundation of Germany, will also be present at the meeting.

The conference will be comprehensive and touch upon various subjects ranging from natural science, social science to humanities. Invited lectures will be held on issues of economic development and the environment.

The Alexander von Humboldt Foundation is a non-profit foundation for the promotion of international research cooperation. It enables highly qualified scholars not resident in Germany to spend extended periods of research in Germany and promotes the ensuing academic contacts. So far, the number of Chinese Humboldt fellowship awardees has reached about 1,500.

As a get-to-together for such a community of outstanding scholars, the conference has received support from such institutions and governmental departments as CAS, National Natural Science Foundation of China, Ministry of Education and Alexander von Humboldt Foundation of Germany.

MOST took part in OECD NESTI

(MOST, 2005-08-19)

Recently, the 2005 meeting of OECD Group of National Experts on Science and Technology Indicators (NESTI) was held in Iceland. Present at the meeting were delegates from OECD members, OECD observers, EU-rostat and UNESCO Institute for Statistics (UIS). As an observer of OECD Committee for Scientific and Technological Policy (CSTP), MOST was also present at the meeting. The meeting summarized the work of NESTI in the past year, reviewed and passed the third revised draft of Oslo Manual (also called Manual for the Measurement and Interpreting Technology Innovation Data). The meeting also reported on the content of the Biotechnology Statistics Framework 2005, and on the progress in such programmes as OECD Doctoral Degree Investigation, R&D of internationalization index, the establishment of enterprise R&D database, discipline classification, etc. The topics of the meeting covered technological innovation, S&T HR, biotechnology, R&D internationalization, R&D statistics and discipline classification.

Biotechnology Statistics Framework 2005, to be published by OECD, analyses the current biotechnology index of OECD members. Biotechnology Statistics Framework is the summary of

biotechnology statistics carried out by OECD members. It is also a guide for the future biotechnology statistics. It carries the concepts of biotechnology, the definition of statistics, policy requirements for biotechnology statistics, guide for data collection, biotechnology classification, and its connection to other manuals.

Entrusted by OECD, Holland led and organized the revision of discipline classification. The Dutch representatives explained the new classification and submitted it for discussion at the meeting. The delegates from various countries gave active responses, putting forward many questions and suggestions. The suggestions include the relationship between discipline classification and education classification; whether medicine or health science is better suited to be the first-class discipline; the issues cropping up after biotechnology and nanometer technology are classified as second-class disciplines; how to classify computer software technology after computer science is classified into the discipline of natural sciences and computer hardware technology into that of engineering technology. Due to big differences in opinions, it was decided at the meeting that countries submit their respective suggestions in writing, so that the final result should be released for implementation after proper revision, instead of passing it at the meeting.

Russian space chief calls for more space cooperation with China (People's Daily, 2005-08-20)

The Russian Federal Space Agency chief Anatoly Perminov said Friday that Russia hopes to conduct more space cooperation with China, including manned space flight.

At Moscow's seventh International Air Show exhibit, Perminov told Xinhua that Russia and China have made much progress in space cooperation, but it is far from enough.

Russia must conduct some "serious projects" with big nations such as China, he added.

As to China's second manned mission, Shenzhou VI, scheduled for early October this year, Perminov expressed his hope that it would be successful.

When asked whether Russia would cooperate with China in developing the Kliper shuttle, a reusable spacecraft that is being designed to replace the Soviet-designed single-use Soyuz, he said that if China asks to take part in the project, Russia will consider it.

Earlier Friday, during a meeting with China's first spaceman Yang Liwei, Perminov invited China's first spaceman, Yang Liwei, to make a space flight to the moon aboard the Kliper shuttle, the Itar-Tass news agency reported..

According to Perminov, the first flight of the manned Kliper shuttle is scheduled for 2012.

9th China-Russia S&T Cooperation Sub-committee Meeting convened in Moscow (MOST, 2005-08-21)

On 18-20 of August, the 9th S&T Cooperation Sub-committee Meeting of the Joint Commission for the Regular Meetings between Chinese Premier and Russian Prime Minister Convened in Moscow. Mr. MA Songde, China's Vice Minister of Science and Technology, and Mr. С.Н.М а з у р е н к о, Director-General of Federal Agency for Science and Innovation, led their respective delegations to the meeting.

At the meeting, the two sides looked back on what the S&T sub-committee had done in the previous year, analyzed the status quo of China-Russia S&T cooperation and frankly exchanged ideas on the problems existing in the bilateral cooperation. Suggestions were put forward for furthering cooperation to a higher level. The two sides talked about cooperation between China's

state key research institutes and Russia's national science center. They also held discussions on cooperation in such fields as innovation and the conversion of defense-related technologies to civilian use. A plan was approved for 2005-2006 China-Russia intergovernmental S&T cooperation projects.

The two sides unanimously agreed that China-Russia S&T cooperation is an important part of their relations of strategic partnership. In recent years, China-Russia S&T cooperation has achieved satisfactory results. However, considering their positions as two great powers in the world and their strategic partnership, there is still a great potential for better and higher level S&T cooperation. In order to promote China-Russia S&T cooperation the two sides have agreed to do the following:

1. Convene experts from various fields of both countries to study such questions as overcoming obstacles in cooperation, developing standards for the transfer of results, setting up a mechanism for safeguarding interests, and quantifying cooperation indexes to put forward suggestions for sustainable development of China-Russia S&T cooperation, and to start working out "Medium and Long-term Development Plan for China-Russia S&T cooperation."
2. The two sides select a number of the current cooperation projects as examples that have good industrialization prospects, to which priority will be given in terms of policies, environment, capital, etc.
3. In light of the agreement reached by the two governments, 2006 will be "Russia Year in China", and 2007 "China Year in Russia". On such occasions, both countries will jointly organize S&T activities. The proposals for activities on the occasions shall be submitted to the organizing committees of both countries.

During the meeting, the delegations visited Russia's Central Aerohydrodynamic Institute (ЦАГИ), Kurchatov Institute of Atomic Energy and Irkutsk Science Center of Siberian branch of Russian Academy of Sciences.

CAS/MPG partner group on plant molecular physiology passes performance appraisal (CAS, 2005-08-23)



At the final-term evaluation meeting held on August 8 in Shanghai, an international panel composed of Chinese, German and US experts spoke highly of the research advance and management at the CAS/Max Planck Society (MPG) Partner Group on Plant Molecular Physiology and Signal Transduction.

CAS/MPG Partner Groups are designed to promote network building between qualified Chinese scientists with German institutions by providing groups leaders and their teams, within a fixed period of up to five years, favorable conditions for them to continue and develop research with

their corresponding partners at Max Planck institutes.

The Partner Group on Plant Molecular Physiology and Signal Transduction was created on August 1, 2000 at the CAS Shanghai Institute of Plant Physiology and Ecology. Over the past five years and under the leadership of Prof. Xue Hongwei, who worked as a postdoc at the Max Planck Institute of Molecular Plant Physiology (MPI-MP) from 1996 to 1998, the group has scored encouraging progress in scientific research, talent training, and international cooperation.

The Group has established a well-equipped research platform for studies in genetics, molecular biology and biochemistry, and a research system for functional genomics, proteomics and metabonomics. It also developed a research team staffed a whole spectrum of professionals ranging from principal investigators, senior technicians, to postdocs and graduate students. The team has made major achievements in functional genomics of plant seed development, functional mechanisms of plant hormones and signal transduction. Many of their work were published in international major journals, such as *The Plant Cell*, *The Plant Journal*, *Plant Physiology*, and *Plant Molecular Biology*. The group has undertaken a number of research projects with the support from, for instance, the National Program on Key Basic Research Projects, National High-tech Development Program and CAS Projects in Major Research Directions.

Experts from the Max Planck Society expressed their desire at the meeting to continue the cooperative research with CAS Shanghai Institute of Plant Physiology and Ecology in the fields of metabonomics, and plant reproduction and development.

MOST Vice Minister met with EU Ambassador to China (MOST, 2005-08-25)

On 24 August, Mr. SHANG Yong, Vice Minister of Science and Technology, met with H. E. Mr. Serge ABOU, EU Ambassador to China, and his delegation. They had discussions on staging the Eighth China-EU Summit soon to be held in Beijing, and on promoting “China-EU Science and Technology Year” and China-EU cooperation in space technology.

In their talks, Vice Minister SHANG informed Ambassador Serge ABOU of what MOST had done for the Eighth China-EU Summit. He also gave an account of the orientation, the timing, the theme, the content of China-EU Science Year and other related issues. In addition, Mr. SHANG affirmed the on-going effective and fruitful China-EU cooperation in space science. He gave a briefing on China’s efforts in issuing the “Joint Statement on Space Exploration and Space Technology Development”.

In their talks, Vice Minister SHANG highly praised Ambassador Serge ABOU for his efforts in enhancing bilateral ties between China and the EU, in particular his contribution to advancing China-EU cooperation in science and technology.

5 Miscellaneous

Aiding Tibet with science and technology benefits the Tibetan people

(MOST, 2005-08-02)

The 2nd National Symposium on Aiding Tibet with Science and Technology held in Lhasa on July 25th. It is learned at the meeting that from 1996 to 2004, MOST, together with provinces and cities concerned, arranged 249 research projects and put into effect 110 million RMB Yuan, which contributed significantly to social and economic development, and improvement of Tibetan people's living standard.

In August, 1995, MOST issued the "Notice Pertinent to Aiding Tibet with Science and Technology", requiring the S&T department of every province and city to adopt specific measures in the light of the practical situation of Tibet and its S&T advantages to assist Tibet in the continuous S&T progress.

For the last decade, the work of aiding Tibet with science and technology has effectively advanced the development of the special and dominant industries of Tibet and attained a number of important S&T results. The leading industry of Tibet Autonomous Region is agropastoral industry, with farmers and herdsmen accounting for 80% of the whole population in the autonomous region. In order to speed up the development of local agropastoral industry and improve the life of local farmers and herdsmen, MOST input 1.5 million RMB Yuan fund in support of the project of "Breeding Cashmere Goat in Northwest Tibet". Superior variety of white cashmere goat was bred in Ritu County of Ali Prefecture and Nima County of Naqu Prefecture. Over 80% of the income of the farmers and herdsmen in the project area comes from white cashmere goats. The photovoltaic power generation product popularization program implemented by MOST, National Development and Reform Commission and Tibet Autonomous Region with a total investment of 60 million RMB Yuan provided over 60,000 Tibetans with electricity. In the field of Tibetan medicine modernization R&D, MOST input 2 million RMB Yuan to set up the Tibetan Medicine Modernization Research Center for reorganization of ancient Tibetan medical records and excavation of traditional secret recipes. The Center has carried out extensive research in the chemical composition of Tibetan medicinal materials and sustainable use of Tibetan medicine resources, Tibetan medicine production technology and product development, which effectively boosted the rapid development of the Tibetan medicine industry.

For the last decade, MOST and the local S&T departments attached great importance to aiding Tibet with S&T personnel and training. The S&T development capability of Tibet was thus effectively improved. By building up schools under "Spark Program" and training young Tibetan leaders for "Spark Program", MOST has cultivated a large number of S&T talents and cadres for Tibet. Up to the present, Tibet has a total of 34,000 specialized technical personnel of various kinds. Over 80% of the counties (cities) are provided with deputy county (city) magistrates in charge of science and technology.

It is reported that more than 50 aid projects were signed by MOST and related local governments, together with the Tibet Autonomous Region, at the 2nd National Symposium on Aiding Tibet with Science and Technology. The total fund exceeded 40 million RMB Yuan.

Nanjing introduces unmanned subway**(China News, 2005-08-02)**

In the past two months, Nanjing residents have a new fun during weekends -- to take a subway tour. Hundreds of thousands of people have already experienced the Nanjing subway in its trail run. Experts cannot help to marvel at the fact that the project's per-kilometer composite cost is the lowest in China's subway construction.

According to experts, the first phase project of Nanjing subway extends a length of 21.72 kilometers, with an investment of 8.5 billion Yuan (1.04 billion USD). The composite cost is 392 million Yuan per kilometer, much lower than that of other cities.

The ratio of homemade equipment in the subway construction determines its total cost to a great extent. The train used in Nanjing subway is the first unmanned train made in China. The whole line has 21 trains, 20 of which are made by Nanjing Puzhen Rolling Stock Works. The proportion of homemade trains reached 70%, while that of homemade signal system exceeded 60%. The high voltage switch cabinet system is provided by Shenyang High Voltage Switch Factory. Communication, escalator, automatic ticket-checking system, etc. are all homemade. The indigenization ratio averaged 79.2%, the highest in China's subway projects.

Beijing to have earthquake science museum**(Xinhua Net, 2005-08-03)**

To mark the 29th anniversary of the catastrophic Tangshan earthquake, the China Seismological Bureau has opened an earthquake educational center in Beijing, the national capital.

The playground of a local school has been turned into an emergency refuge which can accommodate more than 4,000 people. An earthquake science museum, tailored for kids, is expected to be completed by the end of August.

On July 28, 1976, a powerful earthquake devastated the city of Tangshan, in north China's Hebei Province, and neighboring areas, killing more than 240,000 people.

Successful development of the first 900T electric platform carrier in China**(MOST, 2005-08-05)**

Recently, "DCY 850 Tyred Carrier", a project of the 863 Program, successfully passed the acceptance check. This is the first electric platform carrier with independent intellectual property rights and of largest tonnage so far in China. Its successful development indicates that China's technology for large-tonnage electric platform carrier has already reached international advanced stage. It has filled up a blank in China and will play a significant role in developing national economy, especially in the major transport projects and power generation facilities. At present, only three companies, each from Italy, Germany and China are capable of producing this type of carrier.

China to spend one billion yuan annually on national scholarship**(Xinhua Net, 2005-08-06)**

China will spend one billion yuan (about 123.3 million US dollars) yearly on national scholarship to finance its poor college students.

Zhou Chunshu, an official with the Chinese Ministry of Education, said the national scholarship includes stipends and scholarships.

The stipend is granted to under-privileged college students. Each winner will receive 150 yuan (about 18.5 US dollars) per month for living expenses. Over 500,000 students will be awarded.

The scholarship is granted to under-privileged students excelling in their studies. Each winner will receive 4,000 yuan (about 493.22 US dollars) per year. About 50,000 students will benefit from the scholarship.

The national scholarship, the largest ever provided by the central government, will meet the national goal of allowing poor college students to complete their schooling.

According to Zhou, China allotted 200 million yuan (about 24.66 million US dollars) on national scholarship program before. Under previous mechanism, only a small number of students can become the recipient.

According to the latest figure available from the China Foundation for Poverty Alleviation, some 2.4 million students in Chinese universities and colleges are facing financial difficulties, accounting for 20 percent of the total.

Young inventors "brainstormed" in Beijing

(China News, 2005-08-08)

Today, the largest and highest-level Chinese young scientific inventors' competition opens in Beijing. 509 young "inventors", selected from 1,500 competitors from all over China, will team up with equally young people from the U.S., Germany, South Korea and Japan to enact a "brainstorming" scene.

Robots that can read, "blue tooth" security wristwatch that can automatically call the police, auto-management system for parking lots, computer data entry system controlled by the head and research into scientific topics for 2008 Olympic table tennis athletes...these are all wonderfully creative and inventive ideas by children in their teens, chosen from tens of thousands of submissions, that are on display at Beijing Haidian Exhibition Center that truly take one's breath away.

It was learned that this grand competition counts 34 teams from every province, autonomous region, centrally-governed city plus Hong Kong and Macau as well as delegations from countries and districts like the U.S., Germany, South Korea, Japan, Libya, Denmark and Ireland. These young "inventors" brought with them 336 superior technologically "new" products for display at the competition, with another 151 participatory activity for these young scientists, as well as 392 superior sci-fic paintings by teenagers for cross cultural exchanges.

It was also learned that during this year's grand competition, there will be activity under the banner of "designing gifts for the 2008 Olympics".

Joyful summer vacation with study and play

(MOST, 2005-08-08)



Children in Yangzhou are watching a wonderful show of a slope-ascending robot on August 5 at an ingenious robot demo contest held in the library of Yangzhou, Jiangsu Province. The event attracts lots of children, presenting spectacular robot performances like climbing a slope, making basketball shoots, extinguishing fire, etc.

National biology Olympic begins in E. China city

(Xinhua Net, 2005-08-09)

The 14th National Biology Olympic for middle school students was launched Monday in Zhangjiagang, a city of east China's Jiangsu province.

About 90 competitors in 30 delegations from 29 provinces and municipalities are attending the contest, which was sponsored by the national biology contest committee of middle school students and assisted by the Liangfeng Senior Middle School of the city.

The contest has set up the first, second and third prizes, with winners expected to account for 20, 30 and 50 percent of the number of competitors, the contest committee said.

The contest is divided into two parts of experiments and theory, which will be conducted Tuesday and Wednesday. And the results of the contest will come out Thursday.

Research on "Intelligence Road Milling Machine" passed acceptance check

(MOST, 2005-08-11)

Recently, the research topic of "Intelligence Road Milling Machine" under the 863 Program undertaken by Changsha Zoomlion Heavy Industry Science & Technology Development Co., Ltd. passed the acceptance check by experts. This project includes three special topics: "Intelligent Horizontal Directed Drilling and Pipelaying Equipment", "Intelligent Road Milling Machine" and "Product Development Platform".

The prototype of the "Intelligent Road Milling Machine" with independent intellectual property rights will realize automatic detection of metallic barricade device and adaptive control of delivery rate and stockpiling height.

The "Cooperative Product Development Platform" has successfully developed the application system of digital design and manufacture integration that is based on 3D design and PDM technology and supports the development and system design of engineering machinery virtual prototype, and carried out extensive application based on domestic 3D CAD and CAPP software.

Application of this research topic's results will remarkably improve the performance price ratio of enterprise products, effectively enhance the core competitiveness of enterprises and gain greater economic benefits.

2005 China Robot Contest staged in Changzhou**(MOST, 2005-08-17)**

“Shinco Navigation Cup” 2005 China Robot Contest, i.e. the Sixth National Middle School Students Computer Skills Activities, was staged in Changzhou of Jiangsu province. The contest was jointly organized by the Robot Contest Organizing Committee of the China Automation Association and MOST’s High-tech Research and Development Centre. Present at the opening ceremony were LI Meng, Vice Chairman of the Chinese People’s Political Consultative Conference (CPPCC), Academicians CAI Hegao and WU Hongxin, well-known experts in the field of robot. CHEN Zhimin, Deputy Director-General of MOST’s High-tech Centre, and professor SUN Zengyin, Head of the Robot Contest Working Committee, presented at the opening ceremony on behalf of the sponsors. The contest was declared open by LI Meng, Vice Chairman of CPPCC.

Robot contests are a kind of high-tech competitive activities that are quickly growing up in the world in recent years, which involve cutting-edge research and technology integration such as human intelligence, robots, communications, sensing and bodies. High-tech and recreation are combined into one. Great attention and interest have been aroused in the society. Currently, such matches have been organized in the world as robot soccer, robot dancing, and robot shooting.

China’s robot contests are open to institutions of high learning and research institutes. These contests are organized once a year and their scale and level are increasing each year. This year’s contest includes 13 items of three types: Robotcup soccer matches, FIRA robot soccer matches and robot dancing. 600 people of 90 teams from 59 universities and research institutes such as Tsinghua University, Peking University and University of Science and Technology of China. So far this is the largest of its kind in China.

Scientists reveal new look of Milky Way**(Xinhua Net, 2005-08-18)**

Much different from the ordinary spiral galaxy, astronomers said Tuesday that our Milky Way has a long central bar of stars, according to a professor of space science.

With the help of US space agency NASA’s Spitzer Space Telescope, astronomers have conducted the most comprehensive structural analysis of our galaxy, he said.

The survey using the orbiting infrared telescope provides the fine details of a long central bar feature that distinguishes the Milky Way from more pedestrian spiral galaxies.

The bar, embedded in the center of the galaxy’s spiral arms, cuts across the heart of it, where a supermassive black hole resides, said Ed Churchwell, professor at the University of Wisconsin-Madison who led this study.

The survey also found that the bar is longer than previously thought and sits at a sharp angle to the galaxy’s main plane.

"This is the best evidence ever for this long central bar in our galaxy," Churchwell said.

Using Spitzer, the group of astronomers surveyed some 30 million stars in the plane of the galaxy in an effort to build a detailed portrait of the inner regions of the Milky Way, he noted.

The task is like trying to describe the boundaries of a forest from a vantage point deep within the woods. "This is hard to do from within the galaxy," Churchwell said.

However, Spitzer’s capabilities helped the astronomers cut through obscuring clouds of interstellar

dust to gather infrared starlight from tens of millions of stars at the center of the galaxy. The new survey gives the most detailed picture to date of the inner regions of the Milky Way, he added.

"We're observing at wavelengths where the galaxy is more transparent, and we're bringing tens of millions of objects into the equation," said Robert Benjamin, the lead author of another study.

The possibility that the Milky Way Galaxy has a long stellar bar through its center has long been considered by astronomers, and such phenomena are not unheard of in galactic taxonomy. They are clearly evident in other galaxies, and it is a structural characteristic that adds definition beyond the swirling arms of typical spiral galaxies, he said.

The new study provides the best estimates for the size and orientation of the bar, which are far different from previous estimates.

It shows a bar, consisting of relatively old and red stars, spanning the center of the galaxy roughly 27,000 light years in length, 7,000 light years longer than previously believed.

It also shows that the bar is oriented at about a 45-degree angle relative to a line joining the sun and the center of the galaxy.

Astronomers have been debated whether a presumed central feature of the galaxy would be a bar structure, or a central ellipse, or both. But the new study clearly shows a bar-like structure, the researchers said.

"To date, this is the best evidence for a long bar in our galaxy," Benjamin noted. "It's hard to argue with this data."

International optics congress opens in China

(CAS, 2005-08-23)



The 20th Congress of the International Commission for Optics (ICO20) opened on August 22 in Changchun, capital of northeast China's Jilin Province. The opening was chaired by CAS Vice President Cao Jianlin, and CAS President Lu Yongxiang sent his congratulatory message to the congress.

The conference is hosted by the Chinese Optical Society and organized by the CAS Changchun Institute of Optics, Fine Mechanics and Physics (CIOMP), the largest optical institute of China. The five-day event has brought together about 1,000 scientists from 38 countries and regions to present their research and share their views on the development of optics technology.

With the theme of Challenging Optics in Science and Technology, the meeting will address issues in all the fields of optics. Prestigious scholars, including laureate of the 1964 Nobel Prize in Physics Charles H. Townes, will deliver lectures.

The International Commission for Optics was founded in 1947. Its congress is held every three years. China, which joined the commission in 1987, is the first developing country to host the

conference.

**International Symposium on Materials Science and Engineering held
(MOST, 2005-08-30)**

Recently the International Symposium on Materials Science and Engineering was held in Xinzhou of Shanxi Province. The theme of the symposium was “Processing Technology for Advanced Materials and Modern Materials”. There were 12 sub-themes, including nanometer materials and the harmonization of their functions, new photo-electric materials, high-strength light alloyed materials, etc. The symposium reports, special reports and academic exchanges explored the new advancement and new content in the materials science and engineering technology in the world in the new era. More than 100 experts and scholars took part in the symposium. They were from the U.S.A., Germany, Japan, Singapore, Hong Kong and over 30 organizations in mainland China. The co-undertakers of the symposium were the Heat Treatment Sub-society of China Mechanical Engineering Society and Taiyuan University of Technology.

The symposium will play a very positive role in promoting the development of materials science and technology of Shanxi Province.

6 Information for upcoming Workshops in October

The FIFTH International Conference on Metallothionein

Date: October 08 – October 12

City: Beijing

Contact: rulab@pku.edu.cn

<http://www.MTconference2005.org>

The Sixth International Conference on Web-Age Information Management

Date: October 11 – October 13

City: Hangzhou, Zhejiang Province

<http://grid.zju.edu.cn/waim2005/index.html>

International Symposium on Communications and Information Technologies 2005

Date: October 12 – October 14

City: Beijing

<http://iscit05.bupt.edu.cn>

The Ninth International Symposium on Remote-Sensing Physical Measurement and Signals

Date: October 17

City: Beijing

Contact: Liurg@lreis.ac.cn

2005 International Conference on Advanced Fibers and Polymer Materials

Date: October 19 – October 21

City: Shanghai

<http://www.dhu.edu.cn/icafpm2005/index.htm>

The 2005 Annual Meeting of the International Society for Interferon and Cytokine Research (ISICR)

Date: October 20 – October 24

City: Shanghai

Contact: jdu@sibs.ac.cn

International Conference on Mechanical Engineering and Mechanics

Date: October 26 – October 28

City: Nanjing, Jiangsu Province

<http://www.icmem.org>

Abbreviations

- CAS** - Chinese Academy of Sciences
- MOST** - Ministry of Science and Technology
- CRI** - China Radio International
- CCTV** - China Central Television