

N0.512

CHINA SCIENCE AND TECHNOLOGY

# NEWSLETTER

The Ministry of Science and Technology  
People's Republic of China

N0.512

May 30,2008

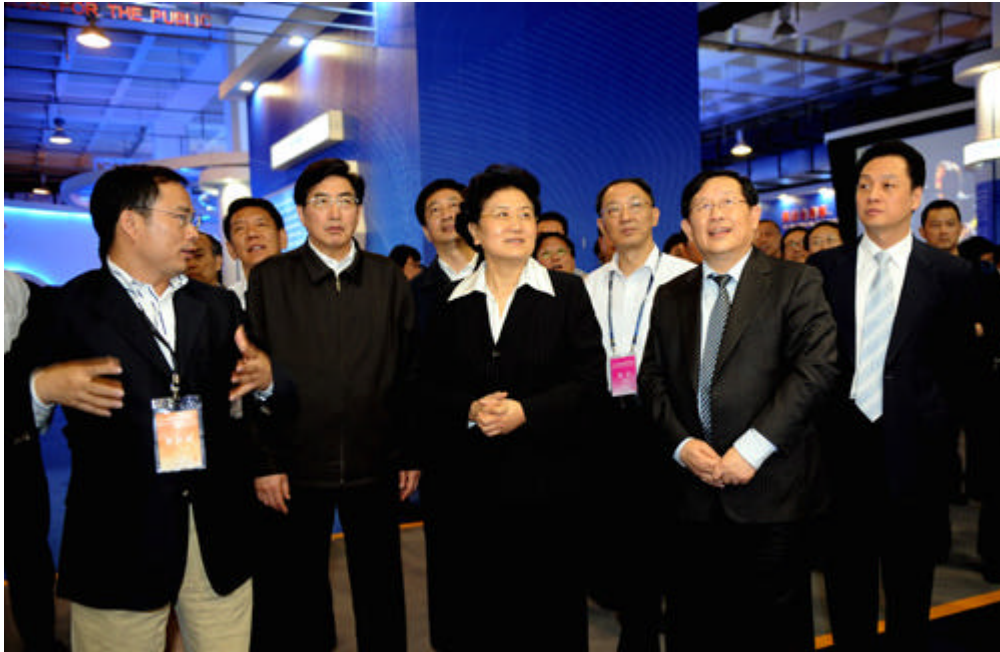
## IN THIS ISSUE

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- \* China International S&T Fair in Beijing
  - \* Common Standards for both China and Germany
  - \* International Cooperation for Environment Monitoring
  - \* China-Spain Solar Energy Contract
  - \* TD and CDMA2000 Connects
  - \* China's New Generation Polar Orbiting Weather Satellite Launched
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SPECIAL ISSUE

China International S&T Fair in Beijing



LIU Yandong, Chinese State Councilor (3<sup>rd</sup> left in the front row), WAN Gang, Chinese Minister of Science and Technology (4<sup>th</sup> left in the front), and GUO Jinlong, Mayor of Beijing (2<sup>nd</sup> left in the front) visited the Fair.



The 11<sup>th</sup> China International S&T Fair opened on May 20, 2008 in Beijing under a theme of S&T Olympic Game and S&T Innovations. WAN Gang, Chinese Minister of Science and Technology said that China has invested at least one billion RMB in staging an S&T Olympic Game. The Beijing Olympic Game that will soon be opened in Beijing will demonstrate as a role model for responding to climate change. China will see a zero emission in the central

area of Olympics Games, using the vehicles consuming new energy, with a reduced emission in the adjacent areas and along the traffic lines dedicated to the Games. A range of green energies, including solar energy, wind energy, and geothermal energy, will take up 26% of the energy consumed for heating and cooling in the Games. Semiconductor illumination and ground (water) source heat pumps will be extensively used in the sports venues and facilities, allowing an energy efficiency of 60%-70%. The sports venues will have an averaged rainwater utilization rate exceeding 80%, with a 100% recycle rate for the water consumed at the venues. 80% of the roads will be covered by traffic guidance, with an averaged speed not slower than 60km per hour for the traffic routes dedicated to the Games.

## INTERNATIONAL COOPERATION

### Common Standards for both China and Germany

Chinese Ministry of Environmental Protection Environment and Development Center, CEC, German Federal Environmental Agency, and German Quality Assurance and Labeling Association jointly signed on May 26, 2008 an agreement to make China Environment Labeling and German Blue Angle Labeling a common standard for recyclable ink cartridge.

To promote common standards accepted by both nations, China and Germany started to work on mutual accreditation in January 2006, under the framework of China-Germany Environment Forum. Both China Environment Labeling and German Blue Angle Labeling signed on April 2007 an accord to recognize the environment labeling of the other side. Thanks to more than one year efforts, both sides have reached an agreement on the management and implementation of the first common standard on recyclable ink cartridge. The development marks an important progress achieved in the mutual recognition of environment labeling. According to a briefing, both sides will work on a common standard for wooden toys as the next step.

### International Cooperation for Environment Monitoring

A high tech forum, jointly sponsored by the Ministry of Science and Technology and Chongqing Municipal Government, opened on April 18, 2008 in Chongqing to discuss collaborations between China, Germany, and Italy in developing micro-systems for environment monitoring. In recent years, Chongqing University Micro-system Center has forged a fine collaborative tie with IZM, ZFM, and CRIM, which creates the ground for having such a forum. 16 MEMS and environment monitoring experts from China, Germany, and Italy spoke at the Forum, on the status quo of China's MEMS for environment

monitoring, mini robot and MEMS, latest findings and technologies in the area, new MEMS applications in environment monitoring, latest findings on intelligent MEMS, and new challenges and research orientations for the future. Experts from China, Germany, and Italy agreed to establish an official cooperation among three countries to develop compact MEMS, allowing a real-time, online, and multiple-parameter environment monitoring.

## China-Spain Solar Energy Contract

Not long ago, the Institute of Electric Engineering, part of the Chinese Academy of Sciences, and Spanish Inceisa S. A. jointly undersigned a PMC contract, assigning the Institute of Electric Engineering to construct a 1MW tower solar thermal power plant in Spain using Chinese proprietary technologies. On the same day, a joint R&D center was also created by the Institute of Electric Engineering and Inceisa S. A., to win the international market with joint efforts. The Institute plans to establish a solar power research branch in Spain. In addition, China-Spain Joint Center for Solar Thermal Power Generation will recruit experienced Spanish experts to work for the Institute.

## TD and CDMA2000 Connects

The visiting Korean President Lee Myung-bak visited on May 28, 2008 a China-Korea TD-SCDMA project at China Datang Corporation. He dialed the first video call via an international line connecting both CDMA 1X EVDO and TD-SCDMA, making TD-SCDMA connect with other 3G systems.

According to a briefing, Datang will strengthen its TD-SCDMA operation with SK, with a further expanded TD-SCDM built by the latter. Chinese State Development and Reform Commission signed on August 2006 with SK an accord to jointly develop the TD system. SK built China's first overseas TD-SCDMA experimental network in Seoul in April 2007. In addition, both sides have decided to launch a range of value added TD-SCDMA operations during the period of the Beijing Olympic Game.

RESEARCH AND DEVELOPMENT

## Bioc China's New Generation Polar Orbiting Weather Satellite Launched



At 1102, May 27, 2008 Beijing time, China successfully blasted off its first new generation polar orbiting weather satellite FY-III aboard a CZIVC launch vehicle, from the Taiyuan Satellite Launch Center. 19 minutes after lifting off, the Xi'an ground control center received the data showing that the satellite has reached the solar synchronous orbit with an altitude of 807 km, and an inclination angle of 98.8 degrees.

Having a weight of 2,295 kg, the FY-III satellite is equipped with a dozen of payloads, including VIRR (Visible-Infrared Radiometer), IRAS(Infrared Atmospheric Sounder), MWTS (Microwave Temperature Sounder), and MWRI(Microwave Radiation Imager), with a noticeably enhanced probe functionality, compared with the first generation polar orbiting meteorological satellite FY-I. The new satellite is able to collect 3-D quantitative data on surface, sea, and space elements in an all-weather and multi-spectrum manner, providing more applications for intermediate range numerical weather prediction. The satellite will play a role in monitoring natural disasters and ecological environment, studying global environmental and climate change, and disaster prevention and preparedness. Meanwhile, it has a function to provide global meteorological information for aviation and ocean going industries.

**B3G Telecommunication: A Key Player**



Installing the system

BSG mobile telecommunication, a key project supported by the National 863 Program, has recently put its new product, a broadband wireless multimedia system, into operation for emergency telecommunication and field dispatch at quake relief scenes. It has played a key role in saving the life of a woman who was buried in the rubble for seven days, and in providing reliable on-the-scene information for public security, fire fighting, rescuers, seismological authorities, hospitals, and mass media.

Made up of 4 radio base stations, and some 20 mobile terminals, the UHV system is able to quickly establish a network covering extensive mountainous areas or an environment with sophisticated terrains. It is designed to maintain a point-to-multiple-point mobile telecommunication, even when the existing mobile and ground telecommunication systems collapsed. Applied with an array of novel technologies, including multi-antenna and multi-carrier, the new system has a much faster transmission rate, compared with the existing mobile telecommunication system, enjoying a total input and output rate as fast as 100 megabits per second. Allowing a high speed mobile transmission of video signals, the system has become a desirable tool for the quake relief command center mobilizing and dispatching human and material resources, and for the field rescue activities as well.

### Novel Solutions for Coal Mine Safety

YUAN Liang, Engineer-in-Chief of Huainan Mining Group, recently revealed that a number of institutions, including National Coal Gas Control Center, Huainan Mining Group, China University of Mining and Technology, and Anhui University of Architecture, have jointly

developed a technology to harvest both coal and gas at the mining site with low gas penetration potentials. As a major technological progress for efficient and safe mining activities, the technology is designed to mine the key distress layers, before kicking off a full-fledged coal pillar free distress mining, in an attempt to increase gas penetration potentials, and reduce possible gas explosions. It allows a safe and efficient mining under the condition of high gas, stress, and low gas penetration potential, harvesting both coal and gas with a greatly reduced mining cost. The technology also raises coal recovery rate, and finds a fundamental solution to safe mining. Statistics show that the novel technology has made Huainan Mining Group create a world record of recovering 360,000 tons of coal a month, with a gas recovery rate as high as 70%, a reduced mortality from 4.01 per million tons of coal to 0.15, and a raised mechanization from 28% to 91%. The proprietary technology has applied for 7 patents.

### New Plant Polysaccharide for Bread

Based on many-year study, researchers of CAS Changchun Institute of Applied Chemistry have worked out a new plant polysaccharide, a perfect substitute for potassium bromate, making bread more edible. The new plant polysaccharide has a special microstructure in tube form, able to form a thin coating. When mixed with dough, it wraps up the dough, trapping air in the bread when baking, which makes bread soft with evenly distributed pores. The novel plant polysaccharide makes an important substitute for potassium bromate, as it produces neither toxicant nor side effects. The technology can also be applied to produce other convenient food, replacing traditional chemicals and additives, with a quality up to food safety standards.

NEWS BRIEFS

### MOST Bacteria Test Efforts for Quake Areas



MOST dispatched on May 27, 2008 an expert team to test possible toxicants, including bio-polyamines, pathogenic bacteria, and fecal bacteria in the quake stricken areas. Experts are also equipped to test other possible hazards. In addition, they will train local people to do the test themselves, with a donation of equipment to the locality.

### 3-D Information Management System for Quake Relief

CAS Institute of Mechanics has recently made the debut of a 3-D dynamic information management and demonstration system for quake relief. The system is designed with a range of functions, including instantly updating 3-D geographic information for newly emerged disaster areas, instantly updating information on quake relief, and real time distant statistics and search. Desirable for quake relief activities, research, decision making, live broadcasting, and disaster relief analysis/evaluation, the new system is able to mix inflow data from CAS Terrestrial Observing and Digital Earth Center with a digital elevation model, preparing a 3-D geographic information system for the disaster areas. Meanwhile, the system can compare air-born images and pictures shot at different time, and produce information on damaged roads, bridges, structures, induced disasters, death toll and injury, personnel settlement, and resources distribution. The updated information will be stored in a comprehensive database for quake relief.

### Five Technical Booklets for Quake Relief

The Ministry of Science and Technology has recently published five technical booklets to diffuse practical knowledge, technologies, and products for quake relief, based on the

findings derived from the National S&T Infrastructure Program, and the National 863 Program.

*Sanitation and Mental Health* elaborates diverse issues on infectious diseases prevention, disinfection, pests killing, victim corpse and dead animal handling, sanitation requirements for temporary shelters and washing rooms, garbage and wastes treatment, after-quake mental health, psychological crisis and intervention, and self-adaptation.

*Safe drinking water and water supply* introduces common knowledge in the area, including water source selection and protection, distributive and integrated water supply, water purification drugs and hardware, water supply facilities, and water supply facilities restoration and stable running.

*Food nutrition and safety* discusses many issues relating to food safety in the quake stricken areas, including diagnosis and treatment of food poisoning, food safety testing techniques, and food nutrition.

*Practical technologies for quake induced disasters* talks about emergency handling of endangered dams and quake lakes, geological disasters prevention, production safety, and damage/loss evaluation.

*Structures safety diagnosis and reconstruction* introduces the knowledge in five areas, including diagnosing the safety of houses, roads, bridges, tunnels, structures, water reservoirs, dams, underground pipelines, and underground structures.

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Comments or inquiries on editorial matters or Newsletter content should be directed to:

**Mr. XU Chaoqian, Department of International Cooperation, MOST 15B, Fuxing Road , Beijing 100862, PR China Tel: (8610)58881360 Fax: (8610) 58881364**

<http://www.most.gov.cn>