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# NEWSLETTER

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## SPECIAL ISSUES

### S&T Accomplishments Show in Beijing

A large show, co-sponsored by the Ministry of Science and Technology, the CPC Central Committee Organization Department, the National Development and Reform Commission, and the Ministry of Finance, was staged on March 8, 2011 at the National Convention Center in Beijing, to display the accomplishments and findings derived from major national S&T programs during the 11th Five-year Plan period (2006-2010). WAN Gang, CPPCC Vice Chairman and Science and Technology Minister, attended the opening ceremony and

visited the show.



The Show is teemed with the accomplishments and findings derived from some 600 projects, 650 display boards, some 1,000 exhibits, more than 150 models, and 150 multimedia players. In addition, some 70 interactive items, including test drive in an electric car and making a video call to the South Pole also caught visitors' attention.

In a section showing the accomplishments stemmed from major S&T programs, visitors can see a range of high tech models, including Shenzhou VII return capsule, "Tiangong-I" target aircraft for China's first space lab, Chang'e-I satellite, prototype lunar lander and rover for the third phase lunar probe, Tianhe-I supercomputer enjoying the highest operation speed in the world, internationally advanced 12-inch etching and injection machine, TD-LTE wireless mobile communication system, prototype large passenger aircraft C919 in life size, 3,000m semi-submersible drilling platform, advanced large pressurized water reactor and HTR nuclear power plant, and water pollution control in the Taihu Lake Basin among many others.

The high-tech section displayed the ten key technologies mastered by Chinese scientists in developing high-speed trains, with sample passenger cars aligned for visit and experiencing. The section also displayed a range of eye catching accomplishments, including a campaign to introduce a thousand electric automobiles in ten major cities, a semiconductor illumination project to introduce energy saving illumination systems in ten major cities, "Golden Sun" demonstration project, new generation air based remote sensing system, 5MW direct drive wind turbine among others. National high-tech parks, industrialization centers, productivity promotion centers, and campus S&T parks also displayed their major accomplishments.

In a section showing the accomplishments made in the area of agriculture and improving people's life, scientists displayed the new findings and novel technologies, including super corn species screening/breeding, rice functional genome, transgenic fish, food yield boosting project, three-dimensional agriculture, water-saving agriculture, new products, food security, novel earthquake resistant residential structures, grassroots information service platform for the rural areas, key technologies developed for the water diversion project, blue algae early warning and treatment, green energy-saving buildings, scientific drilling in a seismological belt in Wenchuan, and other accomplishments achieved by the "High-tech Olympics" and "Technology Expo".

The basic research and cutting-edge technology section exhibited the models of a range of internationally advanced facilities or projects, including green printing plates made of nanomaterials, iPS stem cell pluripotency, massive information storage device, 10,000m deep well drilling equipment, manned deep-sea submersible named "Dragon", Beijing Electron-Positron Collider, Guo Shoujing Telescope (LAMOST), EAST superconducting Tokamak fusion device, Shanghai Synchrotron Radiation Facility, International Thermonuclear Experimental Reactor (ITER) among others. Protein structures and internet based image synthesis were displayed through multimedia player. In addition, visitors were allowed to make an online video call to the Chinese research station in the South Pole.

The national innovation section displayed a range of initiatives and projects staged for the

purpose, including "Thousand Talents Program", Cheung Kong Scholars Program, "Hundred Talent program", National Outstanding Youth Fund, talents recruitment, knowledge innovation project, technology innovation project, research institution reform; innovation demonstration park, innovation city, technology market, Science and Technology Week, National Popular Science Day, and the Outline of China's Medium and Long Term S&T Development Planning among others. Physical exhibits were also staged to illustrate the digital science and technology museum, rural youth S&T innovation room, village S&T video service system, and nationwide vocational skill competition.

During the show, announcement or launching events were also staged to brief the visitors of the findings and results made in the areas of energy efficiency and emission reduction, agricultural science and technology, and biopharmaceuticals during the 11th Five-year Plan period. In addition, news conferences were held to announce the latest major S&T accomplishments achieved during the same period.

### MOST Publicized Major S&T Findings

Chinese Ministry of Science and Technology publicized on March 9, 2011 hundreds of new findings derived from major national S&T programs for 11th Five-year Plan period, including the National 863 Program, National 973 Program, National S&T Support Program, major S&T earmark projects, covering a range of strategic and emerging industries in the area of biopharmaceutical, energy efficiency and emission reduction, agricultural technology, new energy and new materials. WAN Gang, CPPCC Vice Chairman and Science and Technology Minister made speech at the event.

China has been working to improve its S&T findings spin-off mechanism since the 11th Five-year period. The implementation of major S&T earmark projects allows a range of new products enjoying bright market perspectives to make their timely debut in the marketplace, benefiting the development of strategic and emerging industries. The implementation of national technology innovation projects has forged a closer collaboration between the government, industry, universities, and research institutes.

China has also worked to combine the scientific and technological resources at both central and local levels, encouraging S&T findings spin-off mechanisms in diverse forms, and implementing an array of demonstration projects, including a campaign to introduce a thousand electric automobiles in ten major cities, "Golden Sun" project, a semiconductor illumination project to introduce energy saving illumination systems in ten major cities, and the next generation radio and television network among many others.

Meanwhile, China has enhanced government appropriations for S&T findings spin-off,

through innovative approaches. S&T activities have been married with the banking industry. A diversified, multi-channel, and multi-level S&T investment and financing system is taking shape. Industrial R&D and innovation activities have been favored with expanded fund raising channels.

China has paid great attention to building an agreeable climate for S&T findings spin-off, steadily improving the policy and legislation system for the spin-off. China has promulgated the revised edition of Law of S&T Advancement, enhancing the legal foundation for proprietary innovations. The "Outline of National Intellectual Property Strategy" has secured key links of intellectual property, from creation to application, and to protection, and further to management. National high tech parks have become an important base for commercial applications of S&T findings. In 2010, 56 national high-tech parks generated a revenue worth 10.6 trillion. S&T intermediary firms also saw a rapid growth with increasingly enlarged scale and new organizational forms.

During the 12th Five-year Plan period (2011-2015), China will build up its proprietary innovation capability and turn itself into an innovation-oriented country. Senior MOST official told reporters that China will take more effective measures to promote the spin-off and industrialization of S&T findings through the following efforts: 1) initiate earmark projects to address major S&T issues and associated market demand, making them an industrial and innovative chain; 2) promote the reform of S&T system management, enhancing the guiding role of government-led investment; 3) implement technological innovation projects in a deep manner, allowing industry to be a major player in commercial application of S&T findings; 4) encourage national high tech parks to enhance their gathering, radiation, and mobilization role, enhancing the capacity building of public service platform, technology swamp market, and technology transfer agencies; 5) promote the marriage between S&T activities and banking, addressing fund raising issues in industry; and 6) further work on and update the policies and regulations desirable for commercial applications of S&T findings, improving the organization and evaluation part of innovation and industrialization projects.

## INTERNATIONAL COOPERATION

### China-US Joint Working Group Meeting

The 8<sup>th</sup> joint working group meeting between the Chinese Ministry of Science and Technology and the U.S. Department of Agriculture on agricultural science and technology cooperation was held on February 23, 2011 at International Exhibition Center Hotel in Yangling Demonstration Zone, Shaanxi Province. ZHANG Laiwu, Chinese Vice-Minister of Science and Technology, and Catherine Wotek, the U.S. Deputy Secretary of Agriculture, YAO Yinliang, Deputy Governor of Shaanxi Province, and some 60 experts in the seven

priority cooperation areas attended the meeting. Both sides reviewed the progresses achieved since the 7<sup>th</sup> Joint Working Group meeting held in 2009, during which some 20 academic meetings were held, with 200 scientists exchanged, and 50 young and middle aged researchers trained. Collaborations between the two countries have witnessed substantial progresses. Up to date, some 30 collaborative research projects have been completed or being implemented. JIN Xiaoming, Director of MOST Dept. of International Cooperation briefed the participants of the overall S&T cooperation between China and the United States, and the China-US seminar on agriculture adaptation to climate change co-sponsored by the Chinese Ministry of Science and Technology and the U.S. Department of Agriculture.



During the meeting, a ceremony was held to inaugurate the establishment of MOST-USDA joint research centers. ZHANG Laiwu, Chinese Vice-Minister of Science and Technology, and Catherine Wotek, the U.S. Deputy Secretary of Agriculture, unveiled the name plates of 9 joint research centers respectively. Both sides inked cooperation agreements for two new areas: agricultural water-saving technology, and dairy production and processing. Both sides agreed that the 9<sup>th</sup> Joint Working Group meeting be held in October 2011 in New Mexico. On the basis of seven priority cooperation areas, both sides agreed to further strengthen the collaboration in the areas of arid agriculture, agroecology and sustainable development, rural information technology, and agricultural internet of things, and explore new S&T service modes for the rural areas.

### China-Singapore Digital Media Cooperation

Chinese Ministry of Science and Technology and the Media Development Authority of

Singapore have recently agreed to initiate a joint R&D project for interactive digital media. The development marks a substantive collaboration between the two countries. Financed by both Chinese and Singapore governments, the new project is staged to encourage, promote and support the collaborations between the Chinese and Singapore universities, research institutions, potential producers, and companies in the area of interactive digital media and associated industrialization. The joint initiative plans to solicit projects from potential bidders once every year, with up to 5 projects to be staged for a round of solicitation. Each project will be implemented in a period up to 3 years. The first round of projects solicitation will be kicked off in the near future. Applicants may obtain solicitation guides and application forms at the websites of Chinese Ministry of Science and Technology and China International S&T Cooperation.

## RESEARCH AND DEVELOPMENT

### Ginseng Genome Mapped

YU Jun, Deputy Director of Chinese Academy of Sciences Institute of Genome, announced on March 4, 2011 in Beijing that the Institute has completed ginseng genome mapping at the end of February, 2011. Scientists sequenced the genome of a ginseng species that is growing most extensively in China, using the combined first and second generation sequencing technology. Guided by the new research strategy, researchers obtained a high quality ginseng genome map based on a 100-times coverage sequence. The basic biological information derived from the ginseng genome will provide useful data for studying genome diversity, origin, and evolution. Meanwhile, genome analysis and functional study will facilitate the study of the genetic and agronomic traits of ginseng, and associated metabolism, medicinal, chemical, and processing properties, providing technical support for ginseng breeding, processing, and product development.

### Parkinson's Treatment Device

A medical instrument developed by SUN Zuodong and coworkers at Harbin Aobo Medical Instruments to treat Parkinson's disease recently passed the experts' approval check. Based on his theoretical study and clinical practice for many years, SUN proposed a new thinking line for treating Parkinson's disease, believing that the activation of dopaminergic neurons makes the key to treating the disease. It took five years for Sun and coworkers to have rolled out a medical instrument to treat the disease using the endogenous neurotransmitter control technology. The therapeutic instrument was granted with a registration as a medical instrument on January 31, 2011. Clinical trials show that the instrument is desirable for treating the mild-moderate symptoms of Parkinson's disease, noticeably easing some symptoms such as tremor, rigidity, bradykinesia among others. The therapeutic instrument has been put into mass production.

## Chinese Made Terminal Operating System

China Unicom said at a press conference held on February 28, 2011 in Beijing that it will officially launch its first smart phone Wal-Phone and a patented terminal operating system. Built on the Linux kernel, Wal-Phone is designed with a multi-tier architecture to house a range of utilities, including an interactive graphics system supporting the intelligent terminal, core function database, application framework, security suite, business model components, and basic application software. The system supports WCDMA, CDMA, TD-SCDMA and LTE, with desirable applications for banking, securities, health care, transportation among many others. It is also designed to meet the needs of a range of mobile terminals, including flat-panel computer and television.

According to ZHANG Zhijiang, head of China Unicom Dept. of Technology and Research Institute, 7 Wal-Phone models have completed the development. 2 of them have been granted with the network entry permit issued by the Ministry of Industry and Information Technology, and entered mass production. They are expected to be on the market in March, 2011.

### NEWS BRIEF

## China's Vaccine Regulatory System Passed WHO Assessment

World Health Organization (WHO) vaccine regulatory system assessment team leader announced on March 1, 2011 in Beijing that China's vaccine regulatory system has passed the WHO's assessment, and became the 36th vaccine producer under a qualified regulatory system in the world.

According to a briefing, the WHO team assessed China's vaccine regulatory system in line with the criteria defined by WHO for 7 areas, including national regulatory system, market entry authorization, post-marketing monitoring (adverse reaction), endorsement and grant, lab management, production site and distribution channel supervision, and clinical trial authorization. WHO experts also inspected the vaccine supervision units in Beijing, Shanghai, Hebei, and Jiangsu.

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