CHINA SCIENCE AND TECHNOLOGY NEWSLETTER

Department of International Cooperation
Ministry of Science and Technology(MOST), P.R.China

No.5
March 10 2013

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Headline News

Premier WEN Visits MOST for Reform on S&T System

Chinese Premier WEN Jiabao, during his visit to MOST on February 21, emphasized that greater efforts are needed to push forward the reform on the sci-tech system in a bid to better integrate scientific advancement and economic progress.

The Premier said that the 21 century is incubating scientific and technological reform in various areas including information, energy, new materials, biology, environment protection and high-end manufacturing, etc. Each nation is taking every possible opportunity to make breakthroughs and grasp a vantage point in this trend, so as to tackle the challenges brought by global financial crisis from the root. He pointed out that all S&T personnel should fully understand the current situation,

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and be motivated and innovative when accelerating sci-tech system reform as well as the integration of scientific and economic development, and try the best in making breakthroughs more inventions and further progress in key areas, core technologies and new products R&D. The leaders, managers and S&T personnel should feel the urgency since opportunity knocks but once.

In addition, WEN also emphasized the importance of education, which determines the literacy of a nation and the future of a country. While education sets the foundation for socioeconomic development, science and technology is the driving force and source for economic growth. More should be done to deepen the reform on education and sci-tech system to nurture top-notch talents, and create an ecosystem conducive to independent thinking,bold innovation, and free and relaxed environment especially for the young people..

(Source: Science & Technology Daily, February 22,2013)

S&T Management Information

2013 No. 1 Document Issued on Agricultural Management

On January 31, the Xinhua News Agency was authorized to publish the *Opinions of the Central Committee of CPC and the State Council on Speeding up Modern Agriculture Development and Further Boosting Rural Development.* The document sets clear to ensure supply of major agricultural products so as to provide the material base for modern agriculture; to better support and protect agricultural activities and enhance policy measures to strenthen agriculture development and bring more benefits to the farmers; to explore new pathways for agricultural production and management and better organize farming activities; to establish mechanism to include diversified social entities to provide services for agriculture development; to reform the current collective property system in the rural areas and better protect farmer's property rights; to improve public services in the rural area and achieve balanced sharing of public resources between rural and urban area; to improve the management of villages and counties and push forward grassroots organization building with CPC at the core.

(Source: Science & Technology Daily, February 1,2013)

State Council Issues 12th FYP on Energy Development

The12th Five Year Plan on Energy Development, issued by the State Council lately, states clear that during 2011-2015, China will follow a new concept of energy security featuring mutually beneficial cooperation, diversified development and common energy security through coordination, participate in overseas energy exploitation and development, extend trade and technology cooperation on energy, upgrade transport and financial capabilities, build a new pattern for international cooperation and maintain global energy security in a joint manner.

1. Implement "going global" strategy

Carry out substantive collaboration with energy-rich countries in a bid to make full use of China's market and technologies while increasing global oil and gas supply. We should drive cooperation on refining, storage and transport of energy resources, encourage competitive energy companies to engage in overseas coal development and power generation cooperation, thus push forward domestic energy equipment and engineering services to "go global" through such cooperation projects.

2. "Bring in" better technologies

We should attract foreign investment and talents for domestic energy industry, optimize foreign investment mix, guide foreign capital to strategic emerging energy industries and bring along advanced technologies, management expertise and high calibre talents to China. Efforts are needed to encourage foreign investment in exploration of complex inland oil and gas fields and deep sea fields, and build demonstration cooperation projects in shale gas rich areas. We should also encourage Chinese companies to work with oil-rich countries to build refinery, storage and transport facilities in those countries, and support collaboration on safe, efficient and green exploration of coal. We need to learn advanced energy management experience, and enhance communication with major countries and international organizations on strategic planning, energy policies, standards and measures for conservation and efficiency.

3. Expand international trade

Optimize energy trade mix. Based on the principle of crude oil at the core and refined oil as supplement, we strengthen channels for oil import, expand oil trade and increase the proportion of pipeline oil and gas. We need to steadily develop coal import focusing on rare types of coal and high quality steam coal, carry out cross border power trade in a moderate manner, optimize variety of energy import and export and facilitate diversified energy trade.

4. Improve supporting services for international cooperation

We should encourage domestic insurance agencies to develop insurance products for oil, individual safety and properties. Participation in international energy futures is encouraged to avoid market risks. We need to make advantage of bilateral and multilateral energy collaboration mechanisms to enhance dialogs on energy security, energy conservation and emissions reduction, climate change, clean energy, etc., and push forward the building of a fair and equitable global energy order to ensure energy security through coordination.

(Source: MOST, January 28, 2013)

The Two Won 2012 China's Top Science Awards.

Explosions expert Zheng Zhemin (left) chats with radar engineer Wang Xiaomo ahead of an award ceremony on Friday,Jan 18,2013. The two won China's top science awards.

Opinions on Strengthening IP Protection for Agriculture Issued

To follow up with *Opinions on Promoting Innovation in Agricultural Science and Technology to Guarantee Supply of Agricultural Products and Opinions on Deepening Reform of Scientific and Technological System and Speeding up Building of National Innovation System,* the Ministry of Science and Technology, the Ministry of Agriculture and the State Intellectual Property Office jointly issued *Opinions on Strengthening Intellectual Property Protection for Agriculture (Opinions)*.

In order to promote creation, utilization, protection and management of IP, the Opinions aims to improve management, facilitate creation and utilization of agricultural IP, and enable innovation in agricultural science and technology. The central task is to issue an IP strategy, some regulations and a management system in line with the status quo of agricultural development in China.

The *Opinions* includes policies on eight aspects, such as improving the working system of agricultural IP, strengthening IP management, developing IP service for the agriculture sector, cracking down on IP infringement, promoting the synergy of enterprises, universities, research institutes and users, facilitating the utilization of agricultural IP, improving the quality of agricultural IP, and strengthening international cooperation and exchanges.

(Source: Ministry of Science and Technology, January 31, 2013)

Progress Made in 863 Project on Development and Utilization of Special Biological Resources

Important progress has been made in the implementation of a project on development and utilization of special biological resources in the field of biological resources and security under the 863 Program since it was launched one year ago.

With regard to data banks for functional strains, genes and molecular enzymes, an agrobacterium-mediated transformation system of Lingzhi mushroom was established, increasing the concentration of ganoderic acid by twice compared to wild strains. The whole genome sequencing and transcriptome sequencing were completed for hirsutella sinensis of cordyceps sinensis, identifying the anabolism of mannitol, cordycepin, purine nucleosides, pyrimidine nucleoside, unsaturated fatty acid and 72 functional genes.

As for new techniques of developing and utilizing biological resources, separation and purification of ganoderic acid was developed, increasing the concentration of ganoderic acid T in liquid extract by four times and efficiency of separation by seven times. Techniques for exaction and purification of cordycepin were improved. Fast detection of microbial oil, platforms for full-component analysis of microbial oil and analysis of small molecular substances of oil-producing microbes were developed.

In terms of industrialization and demonstration, a production lines of cordyceps powder and a production line of Herba Cistanches seedlings were set up. A bench-scale recycling system of microalgae cultivation with organic wastewater and byproduct of fermentation (CO2) was built, and a pilot project of energy microalgae cultivation based on biogas from pig farms was completed.

(Source: Ministry of Science and Technology, January 31, 2013)

China's First High-end Titanium Alloy Industrial Park Hosted in Harbin

The Aerospace High-tech Industrial Park with the focus on high-end titanium alloy will establish its presence in Harbin Science and Innovation City, according to the agreement recently concluded by the Administrative Committee of Harbin High-tech Industrial Development Zone and Institute No.3 of China Aerospace Science and Industry Group. This is the very first of its kind in China.

With a total investment of ￥1.675 billion, the park will cover an area of 340,000 m^2. It will consist of

five centers, namely new materials and techniques R&D center, casting center, precision plastic moulding, parts manufacturing center, and surface and heat treatment center, which combine to cover not less than 250,000 m^2. This park is designed to be China's top processing and manufacturing base of titanium alloy products, combining research, development and production. It is expected to generate an annual output value of ￥2 billion at the beginning of the construction, and more than ￥10 billion when in full operation. This park will make Harbin an important base for R&D and production of domestic aviation and space materials, and will drive the take-off of new materials industry in Heilongjiang Province.

(Source: Science and Technology Daily, January 1, 2013)

Compound Machine Tool for Heavy CNC Crankshaft Miller Successfully Developed

Recently, all-purpose, high-precision compound machine tool for heavy CNC crankshaft miller has been successfully developed by China itself. This so-called "one drives two" machine tool consists of two sets of lathe carriage and one set of tornado slide. It measures 57.6 meters in length, 10.5 meters in width, 7 meters in height, and weighs 580 tons. The error of machining precision exceeds no more than 0.02 mm, or just 1/4 as fine as hair. With a single fitting, it can complete the semi-finish and fine finish of main journal, flange and toggle neck of crankshafts for large marine low-speed diesel engine. This is developed by Qiqihar Heavy CNC Equipment Co., Ltd under the Major National R&D Project on High-grade CNC Machine Tool and Basic Equipment.

The project mainly cracked the split-open CNC cyclone cutting carriage, a key technology for crankshaft. It also solved technical difficulties such as the machining of U-axis precision rotary motion, radial and vertical bracing, super-large and -thin precision split-type cyclone cutter, and new techniques and materials. With the development of this machine tool, China has mastered,with it's own IP right the manufacturing technology for heavy marine crankshaft miller machine tool, and therefore weaned itself off heavy import of large marine crankshafts. Meanwhile, it meets the need of fine finish equipment for the crankshaft, core part of large marine diesel engine and one of China's current focuses, and therefore drives the sustainable development of shipbuilding industry, harbour transport, and iron and steel industries. It marks China's status as the third country, after Germany and Japan, to be able to independently design and manufacture crankshaft machining equipment.

(Source: Ministry of Science and Technology, February 8, 2013)

TV Channel Located within 20 Micro-second

The research team, led by associate professor Tang Changwen of Fudan University, recently developed a new frequency synthesizer, which can raise the recorded ratio of the highest and lowest produced values from 2 in 2009 to 2.4 today, facilitating quick switch between different frequencies in broader ranges. This device can precisely pinpoint the frequency within just 20 micro seconds, going far beyond traditional technology.

The device's another improvement lies in its electronic noise control. Traditionally, noise reduction was achieved by taking crystal oscillation as the frame of reference to calibrate the frequency of the frequency synthesizer. The new device, in contrast, achieves zero electronic noise by fixing the frequency of crystal oscillator, or the frame of reference, thus ensuring the stability of the output signal.

In addition, the device is also characterized by small size and integration. All the above-mentioned functions can be realized by a mere fingernail-sized chip. Compared with traditional fist-sized electronic devices, the new one can be widely used in wireless communication terminals like mobile phones. It therefore attracts attention of multiple multinational companies, some of which has even started research on how to utilize the technology in future products.

(Source: Science and Technology Daily, January 4, 2013)

International Scientific and Technological Cooperation

Chinese Scientists Decode Diamondback Moth's Genome

Fujian Agriculture and Forestry University announced today that the results of the research on the hybrid genome of the diamondback moth led by Professor You Minsheng, Vice President of the university and leader in entomology, will be published online in Nature Genectis. The research, which reveals the phytophagy and detoxification capacity of the diamondback moth, unveils the world's first original genome of the lepidopteran insect, a worldwide pest. This establishes China at a leading position in the study of the diamondback moth's genome in the world.

The diamondback moth, also known as Plutella xylostella, which mainly feeds on brassicaceous vegetables such as cabbage and rapeseed, is believed to be the most widespread pest causing worldwide damage. It wreaks great havoc in China's Yangtze River Delta area and coastal areas in the south, and costs the world $ 4 to 5 billion every year in damage and control.

This research is led by Fujian Agriculture and Forestry University, and has attracted the participation of Shenzhen Huada Research Insitute and Cambridge University. The paper published is the very first one in Nature Genetics by Fujian's scientist as the first author. Professor You Minsheng's previous research on brassicaceous vegetables' pest infestation mechanism and key technologies for its sustainable control won the Second Prize of 2011 National Science and Technology Progress Award. The technologies developed by him was spread to 947,800 hectares, thus saving a total of ￥2.37 billion.

(Source: Science and Technology Daily, January 12, 2013)

Cooperation Projects and Channels

Ten 12th China Int'l Exhibition For Large Scale Display System Integration Equipment

◎ Organizers: Chinese Soci. Of Electronics,CAST

◎ Date: Apr.6, 2013

◎ Place: Beijing

◎ Contents: Large screen display system

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2013 China Int'l Weighing Instru. Exhibition

◎ Organizers: Chinese Soci. Of Electronics, CAST

◎ Date: Apr.20, 2013

◎ Place: Shanghai

◎ Contents: Electronic Balance Weighing System Weighing Instru.

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(Source: www.most.gov.cn)

(Editor's Note: All news in the issue are translated from Chinese texts for your reference. They are subject to checks and changes against official release of original Chinese or English texts.)