CHINA SCIENCE AND TECHNOLOGY NEWSLETTER

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

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Headline news

China & Israel Strengthen Agricultural Research Ties

On May 8, 2013, Minister WAN Gang attended the official talks between Chinese Premier LI Keqiang and Israeli Prime Minister Netanyahu, then signed a new cooperation agreement between the two countries on behalf of the Chinese government.

During the event, Premier LI noted that China and Israel need to deepen collaboration on science and technology through the building of industrial parks and technology-transfer centers, so as to complement each other with respective technology and market strength. The two countries should also broaden agricultural cooperation, so that China can learn from Israel advanced technologies and management expertise on crop breeding and animal husbandry, and the two sides could work together on water saving and development of drought-resistant crops as well.

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Netanyahu expressed that Israel is ready to do something involving China's 12th Five-Year Plan and push forward bilateral collaboration on innovation, water conservation, agriculture, animal husbandry and renewable energy in a bid to promote common development and improve public wellbeing for the two sides.

After the meeting, Minister WAN and Israeli Ambassador to China Matan Vilnai signed the agreement on agricultural research, development and innovation between MOST and the Israeli Ministry of Agriculture and Rural Development.

(Source: MOST, May 16, 2013)

2013 National S&T Week Launched in Beijing

The 2013 National Science & Technology (S&T) Week was kicked off on May 19. Vice Premier LIU Yandong, Party Secretary of Beijing GUO Jinlong, Minister WAN Gang and Vice Minister WANG Zhigang participated in the event.

During this year's science and technology week, a variety of events, such as S&T roadshows, on-line science activities, mobile science museums, school open days and lectures, introduction of popular science publications, etc. will be organized nationwide in a theme "science , technology and innovation, for our better lives".

A major science fair was organized in Beijing during May 19 to 25. The event, covering a floor area of 13,000 m^2, was divided into 8 sections and consisted of 450 exhibitions, 26 activities, more than 40 popular science films and over 500 kinds of books and AV products. The fair is committed to promoting scientific knowledge through interactive and fun activities, such as real object exhibits, simulation model, videos and pictures as well as hands-on activities.

The National S&T Week, being organized every year since 2001, has become a large scale science-popularization event widely welcomed by the public, in which so far over 700 million people have participated.

Leaders from the State Council, Beijing Municipality and MOST visited 2013 National Science and Technology Week on May 19. ----by Wang Ye, Xinhua News Agency

VM WANG Weizhong Attends 2013 MIECF

Vice Minister WANG Weizhong attended the 2013 Macao International Environmental Cooperation Forum & Exhibition on March 21, 2013 and gave a keynote speech there.

In his speech, the vice minister briefed the audience the recent achievements of the government efforts in science,

technology and innovation for energy conservation and emission reduction, green manufacturing, waste utilization and green buildings, etc. He also analyzed the challenges that China is facing for green development, and put forward valuable suggestions to boost scientific and technological innovation.

Wang noted that a variety of cooperation activities have been carried out within the framework of Mainland-Macao Science & Technology Cooperation Committee, which was set up in 2005. In particular, the collaboration on environment protection between the two sides has been further institutionalized since the signing of a Letter of Intent for Mainland-Macao Joint Research in Energy Conservation and Environment Protection in 2010. He hoped that the joint efforts on environment protection could be deepened and broadened to promote green development and build a beautiful China in future.

Themed as "Sustainable Cities-the Way towards a Green Future", the exhibition attracted over 400 exhibitors participated from more than 20 countries and regions. Chief Executive of Macao Chui Sai On chaired the lighting ceremony of the event.

(Source: MOST, May 8, 2013)

S&T Management Information

Technology Trade Market Booms in China

Technology market in China has been initially developed since mid-1980s. The volume of technology trade has increased from then 700 million yuan to 643.7 billion yuan in 2012. At present, there are about 20,000 technology trade entities in China, among which over 200 institutions are for technology transfer and about 40 institutions are for technology property rights exchanges.

In 2007, the Ministry of Science and Technology (MOST), Ministry of Education (MOE, China) and Chinese Academy of Sciences(CAS)jointly organized and implemented the National Technology-Transfer Promotion Action, then launched in 2008 the National Technology-Transfer Pilot Project. Currently, there are 276 national technology transfer demonstration agencies that have been officially recognized. In 2011, these demonstration agencies have facilitated the completion of 47,000 technology-transfer projects, with a total transaction value of 128 billion yuan.

In this process, a number of international innovation service platforms have been developed and providing services for inter-enterprise technology trade and cooperation between universities and enterprises. For example, China Innovation Relay Network was established in 2010, and by 2012 it has developed 83 contact points nationwide and formed a service system covering 26 provinces, municipalities and autonomous regions with Beijing, Tianjin and Shanghai as pillars. These contact points have connections with over 800 partners. Over the two years, about 8,800 pieces of information on innovation resources have been collected and shared. During the time, each contact point paid visits to enterprise 200 times on average, did survey 150 times concerning the demands of enterprise, conducted coordination for cooperation 24 times, and completed 27 service projects.

(Source: MOST, May 20, 2013)

China's Hybrid Rice Project Achieves Remarkable Progress

The annual meeting for the project "Development and Application of Hybrid Rice with Strong Heterosis" was held in Lingshui, Hainan province recently. Over 100 participants from six research institutes and 20 companies, including Hunan Hybrid Rice Research Center, attended the meeting.

During the event, the research team updated the audience on the latest progress of the project, had a discussion and exchanged ideas with the participating experts on germplasm development, breeding technology, cooperative communication and project management. Academicians YUAN Longping, ZHU Yingguo and XIE Huaan gave presentations respectively at the meeting.

The project is a major one under the 863 Program during the 12th Five-Year-Plan period. After two years' efforts, the researchers have identified six rice genes linked to heterosis by using fine-resolution mapping technology and bred 5 new cultivars with strong heterosis, among which one named "Y Liangyou 8188" generated an average yield of 13.7t/ha in a pilot field in Hunan Province. These new breeds have already been planted in over 330,000 hectares of farmland in China.

During the research process of this project, scientific achievements that were made includes 11 academic papers issued in international journals, a monograph published, 14 new plant cultivars applied for variety protection rights and 5 technical patents licensed in China.

(Source: MOST, May 8, 2013)

Chinese Scientists Capture Living Cells by "Optical Tweezers"

Professor LI Yinmei's group from the Department of Optics and Optical Engineering, University of Science and Technology of China, together with professor WEI Xunbin from Shanghai Jiao Tong University, developed a 3D optical trapping technology for animal cells. The research outcome was published in the scientific journal *Nature•Communications* recently, and was also reported in the week's press release for the journal titled *Medical research: Clearing blocked capillaries with light*.

Professor LI's group, by using optical tweezers technology, realized optical trapping of cells in a living animal for the first time. The researchers use optical tweezers to penetrate the dermis of the mouse's ear and fix the tweezers in the capillary. The flow of blood is slowed down through the light trap until one cell is captured by the optical tweezers. The research has demonstrated that the scientists can trap the cells in living animals non-invasively with optical tweezers and realize three-dimension manipulation of the captured cells.

(Source: Science & Technology Daily, May 9, 2013)

Batch Production of CNT Touchscreen Realized in Tianjin

By working with researchers from university, Tianjin Funa Yuanchuang Science & Technology Co. Ltd. developed and manufactured the world's first carbon-nanotube (CNT) touchscreen product. Back in 2000, its parent company Foxconn teamed up with professor FAN Shoushan's group from Tsinghua University to set up a nano-technology research center, which has gained a number of breakthroughs in basic research and equipment development for CNT and 107 of their patent applications have been licensed.

The company used conductive films of CNTs for scaled production of 1.52-inch to 10-inch touchscreens. They have already made 7 million pieces of such products with a monthly output of 1.5 million pieces. Compared to ITO products, the new product enjoys four advantages: first, the raw material replaces indium with carbon to lower the cost; second, the product is flexible, bendable and resistant to tapping and scratching; third, it is conductive aeolotropic and can be used for touchscreen based on new rules, thus avoiding patent disputes; fourth, it is environmental friendly with simple manufacturing technique, low energy consumption and low pollution.

(Source: Science & Technology Daily, May 20, 2013)

The First 50-ton Ship Crane Developed in China

China's first 50-ton variable frequency ship crane, developed by Fudao Jiangnan Marine Equipment Co. Ltd. in Wuxi, Jiangsu Province, passed the test of Bureau Veritas and factory verification recently, signifying the new research outcome with indigenous intellectual property rights (IPRs) IP enters commercialization stage.

The capacity of the ship crane is 50 tons, with 36m working range, maximal lifting speed of 40m/minute and maximal rotating velocity of 0.82r/m. The machine is controlled through programmable logic controller (PLC) and equipped with human-machine interaction system. Without the use of hydraulic fluid, the crane can achieve lifting, rotating and frequency converting at full-load and speed simultaneously, which is 1.5 times more efficient than those with hydraulic fluid, but use 20 percent less of energy and is free from the danger of leaking and cracking.

The company is specialized in deck machinery for river and ocean ships as well as offshore platforms. With a subsidiary in Singapore, it attaches great attention to R&D of new products, and is exporting hydraulic cranes, hydraulic windlasses, electric ship cranes and other deck machinery to world market, including Greece, Norway and Japan.

(Source: Science & Technology Daily, May 13, 2013)

New Wastewater Treatment Technique Developed in Hubei

A new kind of technique and experimental facility, developed by Hubei Forbon Technology Co., Ltd., has been put into operation to treat phosphorus waste water and generate slow-release micronutrient fertilizers. The technique passed expert review on May 8.

According to WANG Renzong, Chairman of Forbon, the technique is the result of a research project initiated in 2008. Through a series of steps, including

pre-processing, chemi-crystallization and membrane processing, the facility can treat waste water with high concentration of phosphorous and heavy metal, or waste water from animal farms and residential area and ensure the treated water to reach the national discharge standards.

WANG also explained that the local enterprises have to pay 60 yuan/ton for the treatment of phosphorous waste water, and if consider the sales from production of the fertilizer in the treating process, his company can earn a total of 80 yuan from one -ton waste water treatment. If the local industry discharges 300 tons of waste water per day, then the company can make production value of 24,000 yuan by using the facility.

(Source: Science & Technology Daily, May 12, 2013)

International Scientific and Technological Cooperation

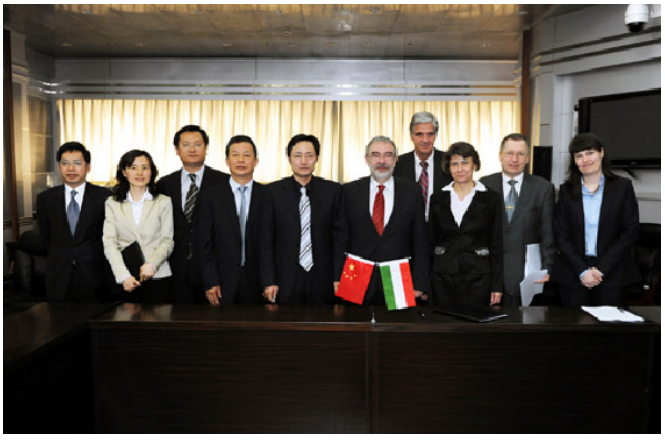
China and Hungary Strengthen S&T Cooperation

The 6th Session of China-Hungary S&T Cooperation Committee was held in Beijing on April 23th, 2013. Mr. Li Meng, Secretary-General of the Ministry of Science and Technology(MOST) and chairman of committee of the Chinese side and Mr. László Korányi, acting president of National Innovation Office of Hungary(NIO, Hungary) and chairman of the committee of the Hungarian side jointly hosted the session.

During the meeting, the two sides briefed their respective S&T policies, S&T development and international cooperation, and confirmed the new bilateral inter-governmental S&T cooperation plans. The two sides also exchanged their views on further promoting the industrialization of research findings in priority areas such as IT, health and medical science, biology, nanotechnology, energy, environmental protection and agriculture, etc.

After the meeting, the two sides signed the protocol of the session. According to the protocol, 36 projects concerning agriculture, biology, material, physics, environment and machinery are included in the inter-governmental S&T cooperation plan of this session.

The participants of the session also include Mr. Ma Linying, Deputy Director-General of the Department of International Cooperation, MOST, Mr. Sándor Kusai, Hungarian ambassador to China, Ms. KOVáCS Ildikó, Director-General of the Department of International Affairs, NIO, Hungary, Mr. MáNYI István, high commissioner of the Department of Cultural and Science Diplomacy, Ministry of Foreign Affairs of Hungary etc.



Representatives at the 6th Session of China-Hungary S&T Cooperation Commission

(From Ministry of Science and Technology, May 7, 2013)

International Science and Technology Cooperation Base (13): Suzhou International Nanotechnology Innovation Park

Suzhou International Nanotechnology Innovation Park was jointly established in 2007 by the Ministry of Science and Technology, Ministry of Commerce and Jiangsu provincial government, and was built by Suzhou Industrial Park. With the focus on developing nanotechnology-related industries, the Innovation Park is a base featuring international cooperation and the integration of R&D and industrialization. Until now, there are about 130 nanotechnology-related enterprises, and over 2,000 talents in nanotechnology innovation and services. The enterprises with annual output value of 10 million yuan reached 17 and the enterprises with registered capital of more than 10 million yuan reached 16. The total registered capital of enterprises in the Park reached over 950 million yuan and the total output in 2010 stood at 3.8 billion yuan. The high-end nanotechnology professionals serve as the essential force of the industry. In the Park, there are 3 academicians as leading scientists, 15 talents invited by One-thousand Talents Program, 18 talents invited by the One-hundred Talents Program of CAS, 17 talents work in the Jiangsu Double Innovation Initiative, 21 talents invited by the Gusu Leading Personnel Scheme, 87 leading personnel in the Park and many other leading experts in the 973 Program, 863 Program, National Natural Science Fund for Distinguished Young Scholars and Chang Jiang Scholars Program.

In the future, the Innovation Park will focus on five major fields of new nano-materials, nano-photoelectron technology, nano-biomedicine, micro-nano manufacturing and nano energy conservation and environmental protection, striving to facilitate the innovation and industrialization in the area of nano-technology. In the next five years, the Park will invest 20 billion yuan for boosting its nano-technology industry.

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International Training Workshop on ASEAN Science and Technology Park (Development Zone)

September, 2013

Beijing, China

Working Language: English

Objectives:

The aim is to share the development experience of Chinese Science and Technology Park with ASEAN countries; to promote the cooperation and exchanges between China and ASEAN in the context of science and technology park.

Organizer:

Beijing Greatwall Enterprise Institute (GEI)

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International Training Workshop on Technical Task Force Entrepreneurship in Rural Area

September, 2013

Beijing, China

Working Language: English

Objectives:

The aim is to introduce China's technical task force (TTF) system design and rural S&T entrepreneurship policy system and national agriculture S&T demonstration park operation management mechanism; to help other developing countries understand the significant function of TTF rural S&T entrepreneurship in promoting scientific and technological achievements transformation to rural areas; to promote the TTF mechanism and other successful experiences to help other developing countries development and achieve the global goal of reducing poverty.

Organizer:

China Rural Technology Development Center

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(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.)