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INTERNATIONAL COOPERATION

China-US First Clean Energy Meeting



China-US Clean Energy Steering Committee convened its first meeting on November 16, 2009 in Beijing. WAN Gang, Chinese Minister of Science and Technology, and Steven Chu, Energy Secretary of the United States co-chaired the meeting. Both sides discussed and reached consensus on a range of issues concerning the management of China-US Clean Energy Joint Research Center, and priority collaboration fields. Both sides agreed to establish a steering committee to provide guidance to, monitor, and evaluate the research

activities at the Center. The steering committee will meet once a year in either country on a rotational basis. Additionally, both sides agreed to establish a high level advisory board membered with the experts selected from universities, industry, and research institutes of both countries. Both sides agreed that in the coming 5 years, both China and the United States will provide a USD 150 million worth support to the joint research activities in the areas of clean coal, clean energy automobiles, and energy efficient homebuilding. Representatives from both sides made a detailed discussion of collaborations in the areas of clean coal, clean energy automobiles, and energy efficient homebuilding.

WAN Met German Delegation



On November 16, 2009, WAN Gang, Chinese Minister of Science and Technology, met with Jürgen Anton Rüttgers, PM of North-Rhine Westphalia, and Cornelia Pieper, Minister of State at the Foreign Office. Both sides exchanged views on spurring up S&T collaborations between China and Germany. WAN told his German counterparts that China pays great attention to developing a strategic partnership with Germany, hoping the two countries work together to address a range of global issues, including financial crisis and climate change, allowing science and technology to play a due role in dealing with the challenges. He said both sides may define the directions for the future collaborations, enhancing the cooperation between Chinese and German businesses, universities, and research institutes in the areas of new energy, electric automobiles, medicine, environmental protection, and nanomaterials, and promoting the cooperation between North-Rhine Westphalia and Chinese localities. After meeting, a ceremony was held to witness the signing of an R&D accord between Baoding Tianwei Photovoltaic and Jülich.

WAN Met Swiss Guests



WAN Gang, Chinese Minister of Science and Technology, met with Mauro Dell' Ambrogio, Swiss State Secretary for Education and Research, and his party on November 18, 2009. Both sides exchanged candid views on stimulating S&T cooperation between China and Switzerland. WAN said that the Chinese Ministry of Science and Technology (MOST) attaches great importance to the collaborations between China and Switzerland in the area of science and technology, expecting a deepened collaboration built on the combined strength of industry, universities and research institutes, in addition to the current universities and research institutes cooperation. WAN said China will focus its S&T development on the areas of new and renewable energy, bioengineering, auto making, medicine, farming, and animal raising in the future, and he welcomes the foreign businesses with solid R&D and innovation strength, such as Ammann, to invest in China, or to work together with Chinese businesses.

Chinese and Israeli S&T Ministers Met

WAN Gang, Chinese Minister of Science and Technology, met on November 18, 2009 with Daniel Hershkovitz, Israeli Minister of Science and Technology. Both parties exchanged candid views on stimulating the S&T cooperation between China and Israel, and on providing powerful S&T support to the national economic and social development. WAN

said he was happy to see the satisfactory results derived from the S&T cooperation between the two countries, with increasingly expanded fields and scales. The Chinese government attaches great importance to the development of science and technology, with an increasingly enhanced input in S&T and R&D activities. S&T cooperation between the two countries agrees with the shared interests, allowing huge space and potentials for the future development. Both sides also discussed the issues concerning stimulating the S&T cooperation between the two countries, and reached consensus on a range of related issues.

China-Africa S&T Partnership



A ceremony, sponsored by the Chinese Ministry of Science and Technology under a China-Africa S&T Partnership Program, was held on November 24, 2009 in Beijing to donate scientific instruments to African scientists. Some 80 participants, including senior officials and representatives from the Ministry of Science and Technology, Ministry of Foreign Affairs, Ministry of Finance, and Chinese Academy of Sciences, diplomats from 33 African embassies in Beijing, including 23 ambassadors or charge d'affaires, and researchers from China and African countries, were present at the event. WAN Gang, Chinese Minister of Science and Technology, thought highly of the ties between China and African countries, especially the progresses and accomplishments achieved in the area of science and technology cooperation. While expecting a better future for S&T cooperation between China and African countries, WAN officially announced the start of China-Africa S&T Partnership Program, in a move to establish a new S&T partnership with African

countries, assisting them to enhance their S&T capacity, and realize a self-sustained S&T development. Under the framework of the Program, China and African countries will work together to address scientific issues that are closely associated with people's life and the national economic development, through technology demonstration and diffusion, joint research, training, policy study, and scientific instruments donation.

Scientific instruments donation is a major activity defined under the partnership, allowing African researchers who have worked in China for a long period of time to continue their research activities after returning to their motherland. The effort will enhance the S&T capacity building of African countries, creating conditions for future collaborations. Before closing, the representatives from Ministry of Science and Technology, Ministry of Foreign Affairs, Ministry of Finance, and Chinese Academy of Sciences, donated scientific instruments to five African researchers.

International Technology Transfer Forum

An international forum, co-sponsored by the Torch Center under the Ministry of Science and Technology, Shanghai Municipal S&T Committee, and French Embassy in Beijing, was held November 17-18, 2009 to discuss technology transfer between China and France and associated online coordination. Some 200 participants from China and France attended the forum, shared experience and practice in innovation, technology transfer, joint R&D, and intellectual property protection. The forum created a platform for the exchanges and interactions between Chinese and French technology transfer organizations. Representatives from GENEPOLE, French Atomic Energy Commission Technology Transfer Office, Tsinghua University International Technology Transfer Center, North China Technology Exchange, and Shanghai Co-Way International Technology Transfer Center made an in-depth discussion of the possible approaches to stimulate the collaborations between China and France in the area of innovations through technology transfer. Additionally, Shanghai International Technology Transfer Online and Marie Curie Network jointly inked an accord to stage a full-fledged cooperation.

RESEARCH AND DEVELOPMENT

First GM Cow Carrying Human Defensin



Researchers measuring the length of GM cow.

The world's first GM cow carrying human defensin was C-birthed on November 25, 2009 at the Yangling Keyuan Cow Farm in Shaan'xi, thanks to the decade long effort made by Prof. ZHANG Yong and coworkers at Northwest Agriculture and Forestry University. Having a birth weight of 40.1 kg, the GM cow is healthy with shiny fur. ZHANG and coworkers obtained highly expressed carriers of human defensin by combining human defensin genes with cow β -casein. They injected the carriers into high yield cows' skin fiber forming cells, and obtained the world's first GM cow carrying human defensin through somatic cell cloning. In 2009, researchers have conceived 200 cows, with 42 becoming pregnant, for a 20% success rate. It is reported that 18 more GM cows carrying human defensin will be born at the end of the year.

Satellites Exchanged Positions

FY-IIE, a Chinese made weather satellite, has successfully sat in the position that used to be occupied by FY-IIC. Officials at the National Satellite Meteorological Center told reporters on November 27, 2009 that the Chinese made geostationary weather satellites have for the first time successfully exchanged their positions and operations. Up to date, China has three operational weather satellites in orbit. FY-IIC has worked in orbit for some 5 years, exceeded its 3-year design life. FY-IIE started to drift to the position of FY-IIC from October 22, 2009, and reached a position near 103.8 degree E from 123.5 degree E after a 30-day journey, working together with FY-IID. FY-IIC started to move away from its position on November 25, 2009, and will reach the position where FY-IIE used to sit in two months. It will make observations and work on some special experiments using the surplus fuel. FY-IIE will be put into official operation on December 23, 2009, after one-month test run.

Advanced Shield Tunneling System

A proprietary muddy water shield tunneling system, developed by Chinese scientists for large and complex tunneling structures, has recently passed an approval review. The new shield tunneling system, developed by Shanghai Tunnel Engineering, has been applied in building a tunnel for the Shanghai Expo to be held in 2010. Named Jinyuehao, the system is able to work on the shield tunneling structure as large as 11.22m across, enjoying numerous merits, including fast speed, enhanced automation, precise muddy water control, and reduced fluctuations. It has exhibited a fine performance in the construction of the Dapulu Tunnel, and realized a 380m-radius turning at the floor of Huangpu River, the smallest radius turning recorded by the home made shield tunneling systems. Shanghai Tunnel Engineering also rolled out a flexible shield tunneling mechanism, and an innovative cutter head applicable to both rocks and earth. An exchangeable cutter head drive, also developed by the same company, shows enhanced application values.

NEWS BRIEFS

Dawning 6000 Debuts in 2010

NIE Hua, Vice President of Dawning, recently told reporters that Dawning 6000, a Chinese made petaflop supercomputer, will make its debut in 2010. The new supercomputer supports different processors, thanks to a novel architecture applied. Dawning 6000 will run on both home made Godson CPUs and regular CPUs.

Built on a brand new internal structure, Dawning 6000 supports heterogeneous clusters, allowing both regular x86 processors and Godson processors. The MIPS architecture embedded in the Godson chip has a command set that is different from x86, though most application programs in current use are x86 command set based. To address the compatibility, Dawning 6000 makes the x86 processors the operating system, allowing it to redistribute the tasks to the Godson processors, without changing users' habit of using x86 operating system.

China Sets up Receiving Station in South Pole

JIANG Xingwei, Director of National Satellite Ocean Application Service and National Marine Environmental Forecasting Center, recently disclosed that China will set up a remote sensing satellite receiving station in the South Pole, in an attempt to improve satellite applications in the marine area, and strengthen the real time watch of global marine environment, providing the needed data for global climate change studies. JIANG said that

the satellite station, based on the existing Zhongshan Station and Great Wall Station in the South Pole, will be mainly used to collect marine data, including sea water color, marine dynamic environment, and dynamic variations of polar environment. China has so far established four marine satellite receiving stations in Beijing, Sanya, Mudanjiang, and Hangzhou. Comparing with the domestic satellite receiving stations, the same receiving station positioned in the South Pole is able to greatly raise the efficiency of polar orbiting satellites, creating a platform for obtaining faster and wider synchronous global data.

Novel Rare-Earth Permanent Magnetic Motor

Shenzhen Antuoshan Special Motors has recently landed a breakthrough in developing a rare-earth permanent magnetic motor without iron core. Researchers changed the traditional silicon and stator winding structures, using the rare-earth permanent magnetic generator without iron core, brush, and magnetic resistance, and developed intelligent frequency converters, which raised motor efficiency by 95% or more. The company has invested several hundred million RMB to build three automated iron core free motor production lines, with a plan to increase the number to 40 lines in the future 3-5 years, for a daily capacity of 400,000 motors with different power output.

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