CHINA SCIENCE AND TECHNOLOGY

NEWSLETTER

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IN THIS ISSUE

INTERNATIONAL COOPERATION

China-Italy Energy Cooperation

A steering committee meeting for China-Italy cooperation on energy and environment was held April 12, 2007 in Beijing. SHANG Yong, Chinese Vice Minister of Science and Technology and Dr. Corrado Clini, Director General of the Department for Environmental Research and Development of Italian Ministry for the Environment and Territory (IMET) co-chaired the meeting. Italian Ambassador Riccardo Sessa was also present at the event. Both sides

discussed collaborations in the area of renewable energy and CO^2 emission reduction. Both sides agreed to strengthen collaborations in more substantive areas.

China-Italy cooperation in the area of energy and environment makes a cornerstone in the collaborations between the two countries, with laudable accomplishments. Projects under the SIF framework, initiated jointly by the Chinese Ministry of Science and Technology and Italian Ministry for the Environment and Territory, have proceeded smoothly, with a number of accomplishments, including a Tsinghua energy efficiency building, a solar energy village in Inner Mongolia, and the hydrogen energy project in Shanghai. Both sides have agreed to make renewable energy a next priority for cooperation.

SHANG Yong, Chinese Vice Minister of Science and Technology, inked a work plan in March 2006 with the Italian Ministry for the Environment and Territory for cooperation in the area of clean development mechanism (CDM), under the framework of the Kyoto Protocol. This committee meeting heralds an enhanced and effective cooperation between the two countries.

China-Russia Laser Cooperation

A laser technology tour, co-sponsored by MOST Department of International Cooperation, Hubei Provincial S&T Bureau, Wuhan Donghu New Technology Development Park, and Hubei Laser Society, was organized to visit an international photon show opened in Moscow, in a move to promote the collaboration between China and Russia in the area of laser technology, by taking advantage of the year of China in Russia. A business talk, jointly initiated by the Russian Laser Society and China-Russia Friendship S&T Park, was also held on the occasion. More than 130 laser vendors and research institutes from China, Russia, France, Germany, and the United States made their presence at the show. 14 Chinese laser vendors from Wuhan, China's photon valley, attended the

show.

Some 60 Chinese and Russian experts and entrepreneurs had a bilateral business talk on March 15. Participants discussed the issues concerning policy environment for laser industry, and future laser cooperation between the two nations. Participants also displayed new technologies and products at the event.

During their stay in Russia, Chinese entrepreneurs met with more than 20 Russian laser vendors and research institutes. Some of them have inked contracts or letter of intention for cooperation in a number of areas, including equipment export, developing new products, technology transfer, and establishing a joint processing center. Hubei Provincial S&T Bureau and Hubei Laser Society signed with a laser system company in St. Petersburg a summary report on an all-round technological cooperation.

China-Germany Work on Climate Disasters

A China-Germany joint project on climate change and associated drought/food disasters has recently passed the approval review of both Chinese and German experts. The 3-year project, jointly initiated by CAS Nanjing Institute of Geography and Limnology, and the International Development and Environment Center of University of Giessen, has secured an array of co-sponsors, including China Meteorological Administration, National Climate Center, Water Resources Bureau under the Yangtze River Water Resources Commission, and Nanjing Agriculture University, and is financed with an amount of 285,000 Euro by China-Germany Exchange Center for Scientific Research Foundations, jointly established by China National Natural Science Foundation and Deutschen Forschungsgemeinschaft (DFG) .

During the period of 2007—2009, researchers from both nations will work on six major topics, including climate variations, IPCC climate change scenarios, extremes analysis, basin hydrological and statistic

models, cohesive sediment dynamics and water quality, and disasters induced economic losses and adaptability, through bilateral visits, academic exchanges, and forums. Researchers will also study hydrological disasters caused by climate, focusing on the genesis and process of drought and flood disasters, and associated impacts and adaptability, drought and flood modeling for the Yangtze River basin, and drought and flood disasters predictions under different climate change scenarios. Two nation's scientists will jointly apply for international cooperation projects at the European Union, DFG, and China National Natural Science Foundation, through publishing their joint research findings, and establishing a high level research platform for climate change and associated drought/flood predictions. The project encourages the participation of young scientists from both nations, in an attempt to build up a competent contingent for future researches.

RESEARCH AND DEVELOPMENT

American CRP Unfits Chinese Population

A recent study by Chinese scientists shows that Chinese population's C-reactive protein (CRP) is only half of its western counterparts, and nearly half of Chinese patients 'CRP sits within the low-risk category according to American standard. The finding, implying that Chinese population's risk of cardiocerebrovascular diseases might be underestimated, was recently published in the online issue of *American Heart Journal*. Experts believe that the finding is of an importance to the earlier diagnosis, prevention and control of cardiovascular diseases and type II diabetes in the country.

According to the standard (mg/l) recommended by American College of Cardiology and CDC, CRP level at 3 mg/l or above is rated as high risk, 2 mg/l or above

median risk, and 1 mg/l or above low risk. American population's CRP usually sits between 1.25 and 1.5 mg/l for an average level. A study team, led by LIN Xu, a research fellow with the Institute for Nutritional Sciences, CAS Shanghai Institutes for Biological Sciences, found that the median CRP level was 0.68 mg/l among the middle-aged and older Chinese population under study. Nearly half of the study population, who had cardiocerebrovascular diseases or diabetes, came out with a CRP level even lower than 1 mg/l, or low risk in American standard. This implies that Chinese population cannot share a CRP standard with their western counterparts. Researchers also found that there is a noticeable difference between the north and the south, and between urban and rural areas, in terms of CRP levels, or higher in north and in urban areas, and lower in south and in rural areas. Researchers said that it would take some time to develop a CRP criterion that works for Chinese population.

World First OTB Display

China has recently made the debut of the world first full color LED OTB display. The proprietary technology, suitable for a bulk production with OTB features, has been granted with 12 patents, of which 9 are national invention patents.

The new display, having luminance and color compensation functions, is substantively enhanced with a thorough solution to the uniformity of the display, which leads to a range of improvements, including adjustable base color luminance, color difference free, and fine uniformity for color and luminance. The application of high accuracy gray scale control technology has resulted in some 4 trillion colors, with 16 million colors being repeated in a non-linear manner, allowing finer, softer, and more vivid images. Together with an advanced control system in the industry, the display guarantees best quality images.

The new display enjoys numerous merits, including lower raw material costs, simplified manufacturing techniques, and a production cost that is 20% lower than that of a regular LED display.

Marine Satellite Sends Images

After 9-day testing, Marine-I ocean color satellite, the second of its kind made by China, started from April 20 to feed remote sensing pictures to the ground receiving station on a regular basis. Beijing Ground Receiving Station, part of National Satellite Marine Application Center, has received clear and well-defined remote sensing pictures collected by the onboard ocean color scanner and costal zone imager in the first satellite orbit. The orbit has covered the Sea of Japan, Yellow Sea, East China Sea, Taiwan Straits, and South China Sea. The images were received when the satellite passed overhead Beijing and Sanya.

Marine-I satellite was blasted off on April 11, 2007 from the Taiyuan Satellite Launch Center. It underwent an in-orbit test and trial operation from April 14 to 19, in an effort to validate its functionalities and technical performance. Preliminary analysis shows that the satellite poses in a right attitude, with smooth operation of both onboard equipment and satellite itself. The ground control and receiving system have worked seamlessly with the satellite.

Proprietary Storage Equipment

A proprietary storage device for network application, developed by Huagong S&T Group, made its official debut on April 26, 2007. The disk array is designed with a mass memory of 15 TB, or equivalent to 3,000 90-minute films in DVD format. In contrast, most personal computers have a disk memory only up to 80 GB.

Huagong Group established, in collaboration with the Huazhong S&T University, a Hai heng Corp. in July 2006, with the support of an array of national labs for

photoelectricity, external storage, and information storage under the Ministry of Education. In an attempt to foster a national brand for information storage equipment, Hai heng has rolled out its first generation product, with the second generation under development. The company positions its products mainly for mid-and-high-end disk arrays, and backup/recovery software.

New Hybrid Vehicle

Shanghai Ruihua Group and State Grid have recently rolled out an environment friendly ultracapacitor/battery hybrid vehicle, featured with zero emission, zero pollution, noise free, electricity for gas, and energy efficiency. Made up of 6 key systems, including intelligent master control system, module based driving system, auxiliary control system, and intelligent charging system, the new hybrid vehicle has used 27 patented technologies.

Tests show that the fully charged hybrid vehicle can run 300 km in a row, or an increased mileage with larger volume batteries. Meanwhile, the vehicle does not call for maintenance, which cuts down the operational costs. It enjoys numerous merits, including reduced gas-free energy consumption, no pollution, and no tail emission. The vehicle makes a good choice, even in terms of its investment returns.

NEWS BRIEFS

Government Supports Software Innovation

China will enhance government support for software innovations, with concerted efforts on developing China's proprietary generic, core and supportive software, said WANG Bingke, Deputy Director of Economic System Reform and Performance Department, part of the Ministry of Information Industry (MII), at a software outsourcing forum held on April 25, 2007. MII will provide more guidance for

software innovations, and facilitate technology cooperation and innovation alliances in different forms, along with the implementation of key software projects, in an attempt to establish a proprietary technological innovation system headed by industry. Meanwhile, it will initiate a range of information security software related innovations and R&D.

According to predictions, China's domestic software and information service marketplace will expect a sale volume exceeding RMB 1 trillion in 2010. Chinese made software and information service will take up a domestic share of 65% or above. Home made key generic software products and core technologies will see major breakthroughs, with a raised industrial value and scale.

3rd Generation Nuclear Power Technology

A forum on 3rd generation nuclear power technology was held on April 23, 2007 in Shanghai. According to SUN Qin, Director of China National Atomic Energy Agency, who attended the forum, China has decided to import advanced 3rd generation nuclear power technology to build the nuclear power plants in Sanmen of Zhejiang, and Haiyang in Shandong, while developing an array of 2nd generation nuclear power generators using the advanced technologies it has mastered.

SUN added that along with proprietary development and importing 3rd generation technologies, China will work on re-innovation of the imported technologies, through digestion, absorption, and R&D efforts, based on the existing technical, industrial, and R&D infrastructures. It will strive to foster China's own proprietary brands for new generation nuclear power technology, in an attempt to accommodate the long term needs for the sustainable development of China's nuclear power industry.

Deep-Water Driller

Not long ago, the Deep-Sea Engineering Technology Center, part of the Harbin Engineering University, singed a contract with Bohai Shipbuilding Co. Ltd. for designing a concept deep-water driller (1500m) for the latter. According to a briefing, the deep-water driller, the first high value added oil-gas acquisition equipment for deep-water application in the country, is of a sophisticated design. The 1500m concept deep-water driller will be built on the world most advanced 5th generation model, combining both cutting-edge deep-sea engineering technologies and ship design techniques. It will take some 3 years for the University to complete the design of the concept driller.

China has so far gathered strong expertise and an experienced technician and management team for nuclear power related R&D, engineering design, equipment manufacturing, construction, and operation management. In 2006, China's nuclear power plants in service have registered a safe and stable operation, with an output of 54.8 billion kilowatt hours of electricity, and an annual average load factor of 88%. By 2020, China will have an installed capacity of 40 million kilowatts in running for nuclear power generation, and a capacity of 18 million kilowatts under construction.

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