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# NEWSLETTER

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SPECIAL ISSUE

## China's First IP Exchange Inaugurated

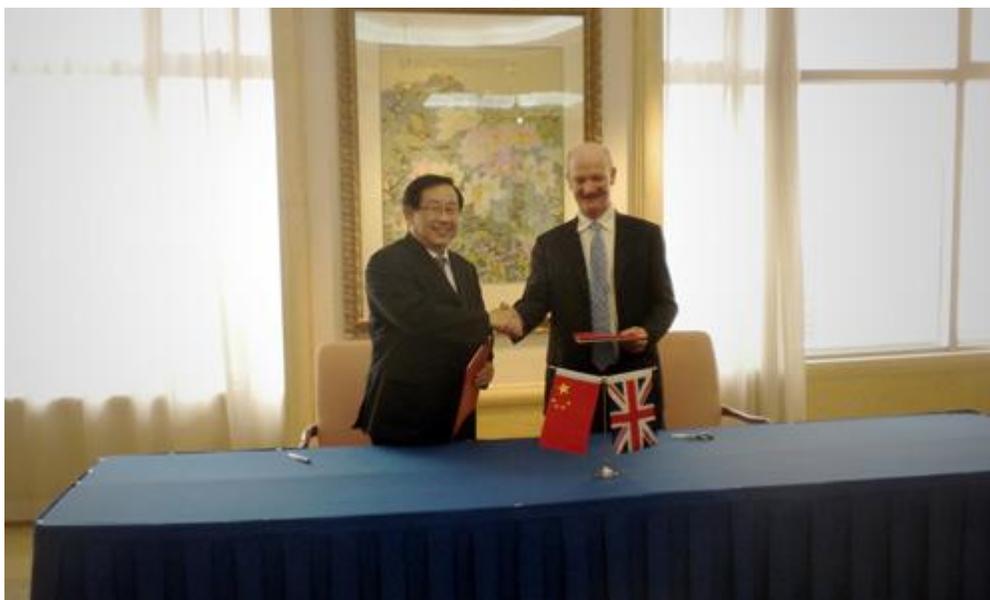
Tianjin Binhai International Intellectual Property Exchange, China's first intellectual property exchange, was inaugurated on June 11, 2011 at an International fund raising

event held to help Chinese businesses to get money. Sponsors of the Exchange, including Tianjin municipal government, State Intellectual Property Office, Ministry of Science and Technology Torch Center, Steering Panel for Intellectual Property Rights (Tianjin), and experts, scholars, and businessmen from both home and abroad witnessed the inauguration ceremony. At the ceremony, 7 major banks, including China CITIC Bank, China Merchants Bank and China Bank, and an array of investment banks and businesses signed a strategic cooperation agreement with the Exchange.

The Exchange was established to marry S&T innovation resources and financial resources, with intellectual property rights as a major player and market needs the guidance. It will work to enrich the varieties of intellectual property transaction products and transaction modes, making itself a platform to connect inventors' technologies to venture capital, facilitating the spin-off and secondary development of proprietary technologies. It will attract overseas capital and government steering funds, facilitating the re-development of intellectual property and commercial applications of proven technologies, securing funding sources for turning R&D findings into productivity, and making the Exchange a national role model for S&T fund raising.

## INTERNATIONAL COOPERATION

### China-UK Joint S&T Committee Meeting



The sixth China-UK joint committee meeting on scientific and technological cooperation was held on June 7, 2011 in Beijing. WAN Gang, Chinese Minister of Science and Technology and David Willetts, British Minister of State for Universities and Science, co-chaired the meeting.



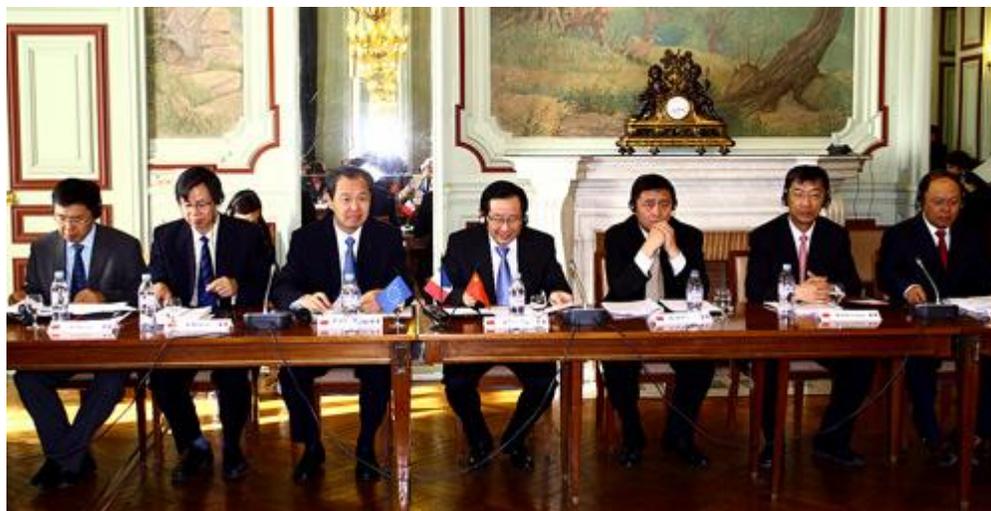
At the meeting, both sides spoke highly of China-UK S&T cooperation and innovation and its important position in the strategic partnerships between the two countries, and expressed the wishes to strengthen the partnership in scientific and technological innovations. Both sides briefed each other of the latest developments of science and

innovation policies, including China's S&T Development Plan for the 12th five-year period and the UK's growth program, and reviewed the high-level bilateral visits, cooperation projects, and cooperation mechanism staged since April 2008, where the fifth meeting was held. The two parties also discussed the perspectives and measures for an enhanced science and innovation cooperation.

At the meeting, some realignments and additions were made to the priority areas defined at the last joint meeting. The following priority areas were defined as the focus of the collaborations in the next two years: cutting-edge sciences, energy and renewable energy, environment, population and health, food security, application science, space science, innovation, and policy exchange. Both parties agreed to foster a closer tie at the government level, exploring to establish specific cooperation and supporting mechanisms.

After the meeting, WAN and Willetts jointly undersigned the summary report of the joint committee meeting, where priority areas and cooperation mechanisms were defined for the future S&T and innovation collaborations.

## China-France Joint S&T Committee Meeting



The thirteenth China-France joint committee meeting on scientific and technological cooperation was held on May 30, 2011 in Paris. WAN Gang, Chinese Minister of Science and Technology, and Valéochrie Péochresse, French Minister for Higher Education and Research, attended the meeting. The two sides spoke highly of the important role played by China-France S&T cooperation in the strategic partnership, and expressed the wishes to have an enhanced win-win S&T cooperation under the new situation, on the basis of

equality and mutual benefit.

At the meeting, the Chinese delegation briefed the other side of China's science and technology development planning for the 12th five-year period, while the French delegation of the latest S&T policies defined by France and associated developments. The two parties reviewed the major developments taken place since 1978, where a China-France intergovernmental S&T cooperation accord was signed, especially since 2007, where the last joint committee meeting was held. The two sides discussed the future prospects and new initiatives for cooperation, putting an emphasis on the collaborations between industry, universities and research institutes, along with the following six priority areas for the next two years: sustainable development, biodiversity and water resources management, green chemistry and associated technology, life science, information science and associated technology, smart city, and advanced materials. The two sides also defined the mechanisms for future collaborations.



After the meeting, WAN and Péocheresse signed the summary report of the joint committee meeting, where priority areas and cooperation mechanisms were defined for the future S&T cooperation. Both parties agreed to stage seminars for the priority areas defined by the summary report, promoting a deepened and pragmatic S&T cooperation between the two countries through concrete plans and actions.

During the stay in France, WAN and his party visited the National Scientific Research Center, Gene Valley, Michelin Group, Valeo, Dassault Systems, and EADS, and witnessed the signing of a joint declaration of cooperation between Chinese Ministry of Science and

Technology and EADS French Branch.

## China and France Jointly Train Application Engineers

A China-France engineer education seminar was held on June 14, 2011 in Paris. Representative from 38 Chinese universities and some 10 French universities attended the event. At the meeting, China Scholarship Council and Paris High-Tech Group signed a memorandum of understanding to support Chinese doctoral students pursuing their Ph.Ds or engaging in postdoctoral research at engineer schools in France.

China-France Engineer Education Program has been working smoothly. In addition to the routine academic exchange and students swap, the program has fostered education ties between the Beijing University of Aeronautics and Astronautics and GROUPE DES ECOLES CENTRALES School of Engineers, and between Tongji University and Paris Tech Group China-France Engineering and Management School, in an attempt to bring out more high-level application engineers.

RESEARCH AND DEVELOPMENT

## World Record for Molecular Simulation

Researchers at CAS Institute of Process Engineering have recently set a world record for molecular simulation when working on molecular dynamics modeling at Tianhe-1 supercomputer, the fastest computing system in the world.

With the help of 7,168 NVIDIA GPUs in the system, researchers launched a gigantic molecular dynamics modeling project, in an attempt to understand the micro-behavior of crystalline silicon, a material commonly used in the solar cell and semiconductor industry. For the modeling, researchers have written some 10,000 lines of instructions. The core calculation was performed by some 2,000 lines of CUDA code, which made 1.87 petaflop single-precision floating point operation per second possible. It took 3 hours to reach the required time scale for an in-depth statistical analysis. Repeated verification has confirmed the agreement between the simulated and observed results. Researchers are currently working on results analysis and simulation improvement, so as to further raise the

performance of the supercomputing system.

The modeling has enjoyed a raised computing performance by five times, and a raised scale by more than 2 times. The simulation has unveiled the micro-behaviors of some 110 billion atoms. The prior simulation record was 49 billion atoms at a speed of 369 trillion floating point operations per second.

## Brain Cells Can Regrow

Fudan University released on June 13, 2011 a finding saying its scientists have found that there are nerve stem cells and newborn neurons in adult monkeys' and human brain, which hints the possible repairing of damaged brain cells. A study team, led by Prof. YANG Zhengang at the University's Brain School, has confirmed the existence of newborn neurons derived from the stem cells in adult macaque's brain, based on three-year study. They also tracked down and investigated the long-distance migration of newborn neurons uniquely found in the brain. In addition, researchers spotted nerve stem cells in the brain tissues provided by an adult human brain bank based in Wuhan. They said these neural stem cells were active in presence, and contributed to the continuous growth of new neurons.

## Fiber-Laser Coherent Synthesis at Kilowatt Level

National University of Defense Technology announced on June 14, 2011 that it has rolled out a prototype fiber-laser coherent synthetic system at the kilowatt level, the first of its kind in the country, with an output reaching 1.5 kW. Prof. LIU Zejin and coworkers developed two fiber-laser coherent synthesis phase control techniques based on stochastic parallel gradient descent and single-frequency jittering. Thanks to multiple-year efforts, they have established a generic model and equation able to describe the transmission of coherently synthesized laser arrays, defined a quality evaluation standard for the system, and developed the needed proprietary key technologies. Last May, researchers realized a 9-way fiber-laser coherent synthesis with an output power up to 1.5 kW, and a light-to-optical conversion efficiency of 75%, having all the technical indicators reached the highest international level.

## Vanadium Battery's 10,000 Cycling Operations

Not long ago, ZHANG Huamin and coworkers at CAS Dalian Institute of Chemical Physics have developed a 2-kilowatt vanadium energy storage system able to perform 10,000 charge/discharge operations, without significant energy efficiency decay. The development makes the Chinese made system the second of its kind able to hit the 10,000 charge/discharge operations in the world, after the one produced by Japan's Sumitomo Corporation.

The system started to work from July 6, 2007, performing seven charge/discharge operations a day. As of June 4, 2011, the system has been running smoothly for 1,429 days, or 34,000 hours on a combined basis, hitting 10,000 charge/discharge operations, without significant energy efficiency decay. The system is remaining under a durability evaluation.

## Home Made Mobile Browser Kernel

UC, a mobile internet technology and application service provider, recently released a proprietary mobile browser kernel called U3. It took three years for UC to develop a mobile browser kernel enabled with full-page browsing function under a high-speed mobile network. It is a browser designed for the mobile phones featured with cloud functions, enjoying fast, economic, and scalable capabilities.

The U3 kernel is suitable for mobile browsing under a uniquely compressed image format that can compress more than 60% of the page. The kernel is also designed taking into account the speed, security, intelligence, and scalability needs of mobile users. The U3 kernel based browser supports diverse plug-in expansion, which makes HTML5 and safe payment functions on a smart mobile phone possible, allowing more browser-based applications and games.

U3 kernel based browser products will be sold in the markets in the second half of the year, covering a range of smart phone operating systems, including Android, iPhone, Symbian, and Windows Phone.

NEWS BRIEFS

## SSRF Findings Sharing

Since its opening to the public two years ago, Shanghai Synchrotron Radiation Facility, the largest science project ever launched in China, has benefited more than a thousand users. The phase II project has become part of the major national S&T infrastructure projects for the 12th Five-year period (2011-2015), striving to be a world class R&D center.

As of the end of May this year, the first seven beamline stations at the Facility has secured 52,720 hours of operations for users, including 1,474 projects that have passed experts' review, covering the areas of life science, materials, condensed matter physics, chemistry, environmental and earth sciences , polymer, medicine, geology, archeology, information science among others.

SSRF users have published 172 papers, including 7 papers published in *Nature*, *Science*, and *Cell*, enjoying an international impact. Meanwhile, numerous enterprises have employed SSRF for pharmaceutical, chemical, and technical appraisals.

## Largest Silicon Solar Cell Project in China

A silicon thin film solar cell project, the largest of its kind in the country invested and built by Han Energy, was put into operation on June 15, 2011 at the Chengdu Economic Development Zone in Shuangliu. The thin film solar cell is produced with the help of second-generation solar cell technology, enjoying numerous merits, including pollution free, low cost, enhanced average power generation, and low-light response, compared with the first generation crystalline silicon solar cell technology. It can be widely employed at large photovoltaic power generation plants, and is also desirable for residence roof power generation and integrated photovoltaic buildings. Thanks to the R&D strength possessed, Han Energy has digested, absorbed, and re-innovated the imported technology, and developed an annual capacity of 300 MW thin silicon film solar modules.

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