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Special Issue: New Progress in China's International Science and Technology Cooperation

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Collaborative research

Genetic Mutation in Brain Tumor Found by Chinese and American Scientists

For the very first time in the world, Professor Zhang Liwei from Capital Medical University-affiliated Beijing Tiantan Hospital and Professor Yan Hai from Duke University of the U.S. together found the genetic mutation specific in the brain stem glioma. The research result was published in *Nat Genetonline* on June 1, 2014.

Professor Zhang holds that the mutation in PPM1D gene can promote the growth of the cancer cell and stop its death. Therefore, it is likely to discourage the growth of cancer cells by blocking the mutation. This sheds light on the development of new target drugs for the brain-stem glioma.

The research result will likely shift the brain stem gliomatyping approach from CT-based typing to genotyping, and make comprehensive treatment possible by adopting molecular pathology approach.

(Source: Science and Technology Daily, June 5, 2014)

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HIV-AIDS Control and Prevention Promoted by both China and Canada

According to China Center for Disease Control and Prevention, China Center for AIDS/STD Control and Prevention, an affiliated institution to China CDC, and Canada's BC Center for Excellence in HIV/AIDS have worked together to adopt the strategy of expanding the testing and treatment of HIV/AIDS in China since January 2014. The strategy has proven effective in lowering new infections and mortality in many countries.

BC Center for Excellence in HIV/AIDS has been dedicated to studying and promoting the adoption of this strategy. Its pioneer Dr. Julio Montaner has been practicing the strategy in BC Columbia since 1996. For a long time, he has been concerned about HIV/AIDS control and prevention in China and has visited China many times to offer his advice.

With an MOU signed, the two sides will improve the level in HIV/AIDS research, control and prevention by working more closely, and jointly solve the most difficult issues concerned. Since 2013, China has been piloting the strategy in eight cities including Beijing and Shanghai.

(Source: Science and Technology Daily, January 16, 2014)

A New Technique for Treating Industrial Pollutant Developed by Chinese and Australian Scientists

The solar energy team led by academician Li Can of Dalian Institute of Chemical Physics, Chinese Academy of Sciences (the Institute of CAS), and the team led by Max Lu and Wang Lianzhou of the Nano-materials Center of Australia's Queensland University made important progress in the decomposition of hydrogen sulfide.

As a toxic chemical, hydrogen sulfide exists extensively in the nature (such as in natural gas). It can also result from the hydro-refining of petroleum. The Institute of CAS developed a special photocatalyst in 2009, which can efficiently generate hydrogen based on hydrogen sulfide in visible light. The Institute later developed a new technique by working together with Nano-materials Center of Queensland University. It adopts opto-eletronic catalysis-chemical coupling approach to decompose hydrogen sulfide to obtain hydrogen and sulfur at the same time. The test shows that the technique can achieve the conversion in an efficient and sustained manner.

(Source: Science and Technology Daily, April 22, 2014)

Breakthrough in Graphene Studies Made by Chinese and UK Scientists

According to China University of Science and Technology, Professor Wu Heng'an and Dr. Wang Fengchao of the Department of Modern Mechanics of the School of Engineering Science, and the team led by Professor Andre Heim of Manchester University of the UK, Nobel Prize winner, found that oxidized grapheme film can screen ions in a precise and fast way, representing a breakthrough in the research of grapheme, a functional material. The research result was published in *Science* in March.

The research shows that after interaction with water, the oxidizedgraphene film forms 0.9-or-so-nm-wide passage which allows less-than-0.9nm-in-diameter ions or molecules to pass through while blocking those bigger than 1.9nm in diameter. This approach is not only precise in terms of ion size, but 1,000 times faster than the traditional dispersion method.

According to *Science*, the discovery indicates that oxidized graphene film is very promising in many fields, such as seawater desalination and purification, sensing technology and energy conversion.

(Source: Science and Technology Daily, March 14, 2014)

Joint organizations/institutes

UNESCO's International Knowledge Center for Engineering Technology Launched in Beijing

The launch ceremony of UNESCO's International Knowledge Center for Engineering Science and Technology was held in Beijing recently. Mr. Zhou Ji, President of Chinese Academy of Engineering (CAE), and Ms. Irina Bokova, Director General of UNESCO, signed an agreement at the ceremony. Ms. Irina Bokova, Mr. Song Jian and Mr. Xu Kuangdi, honorary presidents of CAE, and President Zhou Ji jointly unveiled the Center.

As its name suggests, the Center is specialized in engineering science and applied technologies. It aims to work with engineering organizations worldwide to build a public data service platform and ecosystem based upon various digital S&T resources, in an effort to deliver consulting services and knowledge about research and education to countries in the world, particularly developing ones.

(Source: Science and Technology Daily, June 3, 2014)

China-Croatia Research Center on Eco-protection Launched

On May 24, 2014, the launch ceremony of China-Croatia Research Center on Eco-protection was held in Plitvice Lakes National Park, Croatia. The visiting Chinese Vice-premier Liu Yandong attended and addressed the ceremony. Wang Weizhong, Vice Minister of Science and Technology of China and ZeljkoJovanovic, Minister of Science, Education and Sports of Croatia, unveiled the Center.

The Center was jointly launched by Chengdu Institute of Biology of CAS, Jiuzhaigou Nature Reserve, University of Zagreb, and Plitvice Lakes National Park under the framework of China-Croatia intergovernmental S&T cooperation. With it as a platform, the two sides will collaborate on eco-protection in the Jiuzhaigou Nature Reserve and Plitvice Lakes National Park- the two sister world natural heritages, ranging from travertine landscape, water resources, tourism sustainability, to biodiversity protection.

(Source: MOST, May 30, 2014)

China-Canada Business Innovation Center Launched

On April 15, 2014, the unveiling ceremony of China-Canada Corporate Innovation Center was held at China Cross-border Technology Transfer Conference 2014 in Canada. Guests at the ceremony included CaiJianing, counsellor from the Department of International Cooperation of MOST, Zhu Shilong, Deputy Director General of Beijing Science and Technology Commission, Yang Shaojun, counsellor from Chinese Consulate General in Toronto, Canada, Sandy He-Easton, representative of Ontario Ministry of Research and Innovation, and representatives from the business communities of the two countries.

The agreement on the Center's launch was signed by Beijing HanhaiZhiye Investment Management Group and Ontario Centers of Excellence at Ontario-China Technology Transfer and Research Cooperation Forum held in Toronto on October 9, 2013. Fang Li, Chinese Consul-General to Toronto, and Renza Moridi, Minister of Research and Innovation of Ontario, witnessed its signing.

Based on resource-sharing, mutual benefit and win-win scenario, the Center will offer matchmaking services ranging from talent, technology to capital and project, facilitate collaboration between enterprises of the two countries, so as to help them grow into global brands.

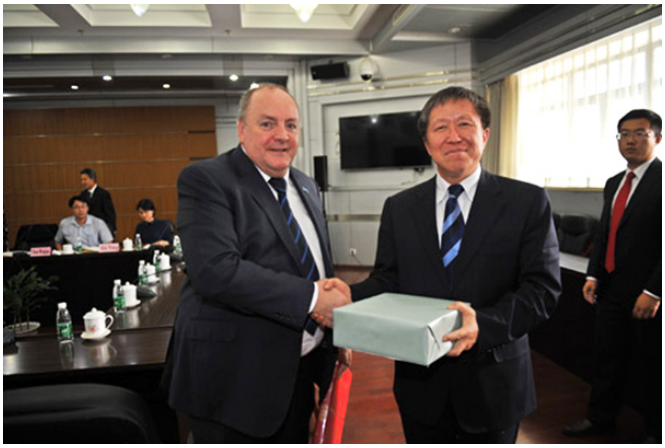
(Source: MOST, April 29, 2014)

Vice Minister Cao Meets with Head of SKAO

On May 21, Mr. Cao Jianlin, Vice Minister of Science and Technology met with Mr. Philio Diamond, Director General of SKAO. They exchanged ideas on topics of They.

Mr. Cao affirmed SKAO's efforts and the progress in SKA and hoped SKAO continued to maintains close contact with its members, understand and coordinate all members' positions, and bring them together to facilitate work of SKA. Mr. Diamond appreciated the important role of China in SKA over the past year. He said SKA members spoke highly of China's industrial technology and engineering capacity. Officials from the Department of International Cooperation of MOST and the National Remote Sensing Center of China attended the meeting.

During his visit to China, Mr. Diamond held informal discussions with the Chinese representatives on China's participation in SKA-1, which means the beginning of negotiations between SKAO and participating countries. He also met with Chinese SKA experts to discuss scientific research, technological development, and SKA engineering construction. He visited ITER China as well to exchange ideas on management over international mega-science projects.



(Source: MOST, June 16, 2014)

Vice Minister Cao Meets with Head of ITER Organization

On March 5th 2014, Chinese Vice Minister of Science and Technology Cao Jianlin met with Mr. Osamu Motojima, Director-General of the ITER Organization and his delegation in Beijing. They exchanged views about the progress of ITER program and other related issues.

Mr. Osamu Motojima firstly briefed the vice minister and other attendees on the outcome of special meeting of ITER Council in February, then ITER's work in carrying out the meeting's requirements and proposals. Cao appreciated the ITER team for their efforts and expressed China's views and suggestions on ITER'S engineering construction, organizational management and the collaboration of the seven parties.

During his visit to China, Mr. Osamu Motojima met with the staff of ITER Centre in Beijing and briefed them on work in progress. He also exchanged views with the head of the Centre about ITER's organizational management and the manufacturing progress of China's procurement package. During his visit to China National

Nuclear Corporation, Mr. Motojima listened to the Corporation's introduction about its nuclear development strategy and their participation in the ITER program.

Later, Mr. Motojima visited Xi'an and Nantong. He inspected respectively Western Superconducting Technologies Co Ltd that is producing superconducting magnet strands of wire for ITER and Nantong Shenhai Science and Industrial Technology Co Ltd. where the ITER superconducting wire products are electroplated. Mr. Motojima learnt about the processes and techniques in detail there, and expressed satisfaction with the two companies' work and product quality management in carrying out tasks of the ITER program.

(Source: MOST, March 21, 2014)

Exchange Activities

2014 China-Russia Young Scientist Forum Held in Qingdao

During June 3rd to 5th, the 2014 China-Russia Young Scientist Forum was successfully held in Qingdao. The Forum was co-organized by the Ministry of Science and Technology (MOST), the Qingdao Municipal Government and the Association of Sino-Russian Technical Universities (ASRTU). Representatives from the two sides including MOST, the Qingdao Municipal Government, the Ministry of Education and Science of the Russian Federation, academic institutions and international cooperation agencies, and Russian Embassy in Beijing attended the event.

"The China-Russia Youth Year" is an important exchange activity initiated by President Xi and President Putin during Xi's visit to Russia in March 2013. It greatly promotes the mutual understanding and friendship of both countries' young generations and consolidates the China-Russia Comprehensive Strategic Coordination Partnership. The two countries will take turns to host this activity in 2014 and 2015.

This year's activity attracted 29 colleges and universities on the two sides, altogether over 150 experts and scholars: 11 Chinese colleges and universities submitted 75 abstracts of thesis which 18 Russian colleges and universities 66 abstracts. The participants had an extensive, in-depth discussion on the development of new materials and new processing technologies.

(Source: MOST, June 16, 2014)

3rd Canada-China Technology Transfer and R&D Collaboration Forum Held in Toronto

On June 3rd, the 3rd Canada (Ontario)-China Technology Transfer and R&D Collaboration Forum, co-organized by the Chinese Consulate-General in Toronto and the Ontario Ministry of Research and Innovation, was opened in Toronto. The Forum brought together around 300 representatives from both countries, including representatives from government, science community, business community and investment entities.

In her speech at the Forum, Wu Dongmei, Chinese Acting Consul-General to Toronto pointed out that Ontario enjoys technological advantages in areas such as biomedicine, medical devices, clean energy, energy saving and emission reduction, information and communications technology and multimedia, while China performs well in hi-tech commercialization, investment environment and market development. Therefore, the two sides are highly complementary in technology transfer and R&D collaboration. According to Wu, more and more research institutes and companies from both sides would gain benefits through the Forum.

Representatives from the Torch Centre of the Chinese Ministry of Science and Technology, the Ontario Ministry of Research and Innovation, China's local governments and the University of Western Ontario also gave speeches at the Forum. They aired views on how to promote bilateral technology transfer and R&D collaboration. The representatives also discussed related topics on technology transfer and venture capital at the roundtable.

(Source: MOST, June 3, 2014)

Bilateral Cooperation

China and Israel Deepen Cooperation in Science and Technology

In mid-May, Jin Xiaoming, Director-General of the Development of International Cooperation, the Ministry of Science and Technology (MOST), talked about China-Israel Cooperation in Science and Technology in an interview by *Science and Technology Daily*.

In February 1993, the two countries signed *the People's Republic of China and the State of Israel's Agreement on Science and Technology Cooperation*, initiating collaboration in the field. In May 2010, the two governments signed *the Agreement on Technological Innovation Cooperation to Promote Industrial R&D*. In May 2013, MOST and the Israeli Ministry of Agriculture and Rural Development signed *the Agreement on Innovation Cooperation in Agricultural R&D*, putting the focus on agricultural technologies. These three agreements are the basic framework of China-Israel cooperation in science, technology and innovation.

DG Jin pointed out that in the past 22 years, this partnership has developed smoothly. Its scale expanded even more quickly after 2010, mainly in four areas, i.e. scientific research, industrial technology cooperation, agricultural cooperation and regional cooperation.

In 1995, MOST and the Israeli Ministry of Science, Technology and Space set up "the China-Israel Scientific and Strategic R&D Foundation" to fund joint research projects. Up to now, the Foundation has supported 29

joint research projects in total. They cover areas such as new materials, agricultural biotechnologies, biomedical engineering, water treatment and nano materials.

In 2012, MOST and the Israeli Ministry of Economy launched a joint- funded R&D initiative for industrial technologies. Both have promoted China-Israel Industrial Innovation Park. Companies gained support through the activities of technology transfer, high-tech incubators and financial services.

Based on the Agreement signed in May 2013, the two sides will conduct cooperation in fields such as sustainable development of agriculture, development of new crop varieties through both traditional means and biotechnologies, adaptation of crops to climate change and dairy farming and technologies.

In recent years, many provinces and municipalities like Jiangsu, Shanghai, Guangdong, Zhejiang, Shandong and Shenzhen have formed partnerships with Israel's counterparts to promote industrial collaboration. For example, in 2008, Jiangsu Province and the Israeli Ministry of Economy set up a special fund, and have co-funded nearly 40 projects. Tianjin and Sichuan have set up China-Israel joint start-up incubators and venture capital funds.

DG Jin said that in the future the two governments will strengthen coordination and collaboration to lift the research and innovation cooperation to a new level.

(Source: Science and Technology Daily, May 16, 2014)

MOU on Space Technology Application Signed between NRSCC and Nottingham University

On April 23, 2014, the National Remote Sensing Centre of China (NRSCC) and the Nottingham University of the U.K. signed *the Collaborative Memorandum of Understanding between the National Remote Sensing Centre of China and the Nottingham University of U.K.*, in order to promote research and technology applications collaboration in fields such as global navigation satellite system, earth observations, geographic information system and so on. The signing was facilitated by the Department of International Cooperation of MOST, the British Ministry of Universities and Science and the British Embassy in China under China-U.K. intergovernmental research and innovation collaboration framework. The signing ceremony was organized by the British Embassy in China, and was witnessed by David Willetts, Minister of State for Universities and Science, and Sebastian Wood, British Ambassador to China. They also discussed related issues on collaboration with two representatives of NRSCC.

According to the MOU, the two sides will further coordinate related agencies to leverage their own research results to conduct more wide-ranging and in-depth cooperation. The two sides will implement demonstration projects in fields such as navigation and positioning services, the deformation monitoring of large infrastructure projects and precision agriculture. They will also enhance personnel exchanges and collaboration.

(Source: MOST, Aril 29, 2014)

Agreement on China-Germany Innovation Centre for Clean Water Signed

During President Xi's visit to Germany in March 2014, Minister of Science and Technology Wan Gang and the representative of Germany's Federal Ministry of Education and Research signed *the Joint Statement of Intent on China-Germany Innovation Centre for Clean Water*, in the presence of Chinese President Xi and German Prime Minister Merkel. The two sides decided to locate the China-Germany Innovation Centre on Clean Water in Zhangjiang Hi-Tech Park in Shanghai, and would later build it into a platform open to industrial and research cooperation for promoting technology R&D and the commercialization of scientific achievements in the field of clean water. MOST and German Federal Ministry of Education will promote bilateral science and technology cooperation by supporting joint research.

(Source: MOST, April 23, 2014)

China and U.K. Deepen Energy Cooperation

In March 2014, the National Natural Science Foundation of China (NSFC) and the Engineering and Physical Sciences Research Council of the U.K. (EPSRC) signed a new memorandum of understanding in London. Over the next 3 years, the two sides will respectively invest £10 million in total or about £6.6 million per year to finance the development of new low-carbon manufacturing processes and technologies, low-carbon cities and offshore renewables to benefit both countries.

This was applauded by Greg Barker, UK Minister of State for Energy and Climate. He said that investing in innovation and science is essential for both the U.K. and China to ensure energy supply and meet emissions targets, as well as drive long-term economic growth. The U.K. has ring-fenced a science budget worth £4.6 billion per year and invested £29 million in joint projects with China.

(Source: Science and Technology Daily, March 20, 2014)