



SCIENCE & TECHNOLOGY NEWS FROM THE REPUBLIC OF KOREA, JUNE 2009

Please note that the previous newsletters from January 2009, can be downloaded from the website of the embassy of Switzerland: <http://www.eda.admin.ch/seoul>

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1. Science and Technology in South Korea

Korea-UK patent prosecution highway opens

(Korea Net of 17 06 2009)

The Korean Intellectual Property Office (KIPO), under Commissioner Koh Jung-sik, and the UK Intellectual Property Office (UK-IPO), under Commissioner Ian Fletcher, agreed to launch the ROK-UK Patent Prosecution Highway (PPH) at the 2nd ROK-UK Commissioners' Meeting, held at the Westin Chosun Seoul on June 5. The PPH is a set of initiatives that allow patent applicants who have received an examination report from either country to request accelerated examination of a corresponding patent application filed in the other. In Korea, just such a pilot system with Japan began in April 2009, with the United States in January 2009, and with Denmark on March 1, 2009. Currently, neither the number of Korean patent applicants to the UK-IPO, nor vice versa, is high. However, the UK-IPO is well known for advanced patent content and examination quality.

Korea, U.S. consolidate green energy alliance

(Korea net of 25 06 2009)

Minister of Knowledge Economy Lee Youn-ho met with his U.S. counterpart, Energy Secretary Steven Chu, on the sidelines of President Lee Myung-bak's visit to Washington, D.C. As a result of the meeting, the two countries uncovered a number of opportunities to expand energy cooperation—most notably in the area of smart grids. Smart grids are intelligent electrical power systems that incorporate information technology to help consumers use electricity more efficiently and reduce their environmental impact. The two leaders affirmed that a partnership which takes advantage of the respective strengths of both countries in smart grid technology will open up a vast array of opportunities. Other topics at the meeting included the need for stronger cooperation on clean energy, eco-friendly vehicles, new energy technologies such as gas hydrates, and other climate change countermeasures. Korea and the United States signed a statement of intent following the meeting that will enable the two countries to put their cooperation plans into action. Minister Lee also offered to host the next Energy Ministers' Meeting involving Korea, the United States, Japan, China and India—the five countries responsible for nearly 50 percent of global energy consumption.

Korea gains access to pan-European industrial network

(Korea net of 26 06 2009)

Korea has become the first non-European country to gain Associate Country status in Eureka, a pan-European network for market-oriented, industrial R&D. Accession to Eureka is a significant step for Korea, one that will create more opportunities for domestic companies to pursue joint research with European partners. Vice Minister Rim Chemin and Portuguese Minister for Science, Technology and Higher Education José Mariano Gago signed a Partnership Agreement between Korea and Eureka on the sidelines of the 24th Eureka Ministerial Conference in Lisbon.

At the meeting, Vice Minister Rim stressed the strengths and industrial know-how that Korea's presence would bring to the European network. Korea's "aggressive technological innovation" and "a speedy, practical application from R&D to market" were the driving forces behind Korea's rapid growth, the Vice Minister said. As an Associate Country, Korea will participate in five to 10 R&D projects every year over the next three years, and will have a greater say in the process of deciding major policies. To encourage domestic businesses to make the most of the new partnership, the Korean government will invest 33 million euros by 2012. That represents nearly 40 percent of the amount invested by Eureka Member Countries with gross domestic products of over \$1 trillion.

2. Life Science / Biotechnology / Health Care

South Koreans' medical expenditure growing fastest among OECD countries (Korea net of 03 07 2009)

South Koreans' medical expenditure has grown at the fastest pace among major economies over the past decade as public spending in the sector rises amid a fast-greying population, a report showed on July 3rd, 2009. According to the report by the Organization for Economic Cooperation and Development (OECD), medical spending in South Korea jumped by an annual average of 9.2 percent between 2000 and 2007. The report was cited by Seoul's finance ministry.

3. Information & Communications Technology

S. Korea ranks 9th in ICT market size among OECD nations

(Yonhap News agency of 23 06 2009)

South Korea's information and communications technology (ICT) market posted US\$73.1 billion last year, becoming the ninth-largest among the 30 OECD member nations, a report said on June 23rd. The figure was a 6.7 percent increase from \$68.5 billion dollars the previous year, according to the report by the Organization for Economic Cooperation and Development. The global ICT market, which consists of hardware, software, computer and telecom services, recorded \$3.78 trillion last year, including \$2.25 trillion in telecom services, the report said.

4. Energy / Environment

Gov't Announces New Energy-Saving Measures

(Chosun Daily of 05 06 2009)

The Ministry of Knowledge Economy on June 4th, announced measures to address energy consumption at an emergency meeting presided over by President Lee Myung-bak to discuss the energy crisis. Korea's fuel efficiency standard for cars will increase from the current 11.2 km per liter to over 16.6 km per liter in 2015 to be in line with the standard of advanced nations. Fines and penalties will be levied on car manufacturers violating this standard. Clean diesel cars will be exempted from environmental taxes as they are more fuel efficient and emit less greenhouse gases. The government will also impose consumption taxes on energy-guzzling household appliances, driving them out of the market, while providing incentives to manufacturers of top-rated energy products. In addition, electricity and gas fares, which currently stand at lower than cost price, will increase during the second half of this year. The government said it will adopt a sliding scale price system in which if crude oil prices raise 10 percent, then electricity and gas fares would increase 5 and 9 percent.

Gov't announces plans for low carbon, energy saving cities

(Korea net of 09 06 2009)

The Ministry of Land, Transport and Maritime Affairs announced on June 4 that it will create "Low Carbon and Energy Saving New Cities", which use new and renewable energies and adopt a decentralized rainwater management system, etc. in response to climate change. The Ministry will hold a briefing session for research outsourcing and revise "Standards for Planning Sustainable New Cities" and "Rules on Decision, Structure and Installation of Facilities for Urban Planning", based on the research outcome, which will later be applied to the construction of New Cities. It is mainly aimed at holding a dominant position in the fierce "Green Race" in which all nations in the world are en-

gaged to tackle climate change.

S. Korean power firm to buy stake in French uranium plant

(Yonhap News Agency of 15 06 2009)

Korea Hydro & Nuclear Power Co. (KHNP), a South Korean state-run power company, said on June 15th that it will buy a 2.5-percent stake in a French uranium enrichment plant to secure a stable supply of uranium. Under a deal with the French company Areva SA, a state-run builder of nuclear reactors, KHNP will purchase the stake in the Georges Besse II enrichment plant, which is being built on the Tricastin nuclear site in the southern part of France, the Korean company said in a statement. South Korea imports an annual 400 tons of enriched uranium from the United States, France, Russia and Britain to operate its nuclear power stations. South Korea cannot enrich uranium itself due to an existing Seoul-Washington nuclear power agreement and the Korean Peninsula denuclearization declaration set up by South and North Korea in 1992.

JP Morgan to form \$1b 'green fund' for Korea

(Korea Herald of 17 06 2009)

JP Morgan, one of the world's leading asset management companies, will launch a \$1 billion fund to invest in green and eco-friendly industries in South Korea, Seoul officials said on June 17th, according to Yonhap News. The agreement was signed between South Korea's government and JP Morgan on the sidelines of summit talks between President Lee Myung-bak and U.S. President Barack Obama in Washington, according to the Ministry of Knowledge Economy. Under the letter of intent, JP Morgan plans to form the so-called "green fund" to invest in South Korea's eco-friendly industries such as light-emitting diodes, solar power, wind power and other bio energy sources, the ministry said. It added that JP Morgan will finance 30-40 percent of the fund from overseas investors and the remainder from those in South Korea, with a plan to launch the fund during the second half of this year.

Samsung finds new material to turn waste heat into power

(Korea Herald of 18 06 2009)

Samsung Electronics Co., the South Korean electronics giant, said on June 18th, it has developed a new material that can transform waste heat into useful electricity, according to Yonhap News. The metallic compound in its crystal-line form generates a thermoelectric phenomenon, in which a temperature difference creates electricity, the company said. It added the material is easy to produce and improves thermoelectromotive force by 80 percent. The discovery, published in the latest issue of Nature magazine, will point to a new direction in the search for high-performance thermoelectric materials, Samsung said.

If applied correctly, the material could utilize heat generated from mobile devices, automobile engines and factories, Samsung said. "It is generally thought that by 2014 thermoelectricity will start to be commercialized in the automobile sector," said Lee Sang-mock, an R&D staff member at Samsung.

Eco-friendly LED headlights in Korean cars

(Korea net of 25 06 2009)

New technologies such as LED headlights and ISG devices will be introduced to promote the production of environmentally friendly and high efficient cars. The Ministry of Land, Transport and Maritime Affairs announced that partially revised Regulations of Vehicle Safety Standard will be promulgated and enforced from June 18. Under the revised regulations, LED headlights and the ISG device will be allowed to be installed in Korean cars and vehicle safety standards of door lock & door retention component, two-wheeled cars' rear reflex reflector, etc. have been coordinated with the Global Technical Regulation. This will eliminate inconvenience caused to car production and import because of the difference between the domestic safety standards and the international ones. Furthermore, the requirements for self-certification have been improved since they have posed a disadvantage to Korean car companies. Also, car manufacturers are allowed to undergo safety inspection on their own if they are equipped with required safety inspection equipments. In addition to the revision of the Regulations of Vehicle Safety Standard, the Ministry will continue to step up its efforts to expand the production of environmentally friendly and high efficient cars and to strengthen the export competitiveness of the vehicle industry. LED headlights are effective in improving fuel economy, and excellent in outdoor lightening at night, durability and design. ISG (Idle Stop & Go) stops car from idling when cars come to a halt and wait for the light and start cars automatically, therefore, reduce fuel consumption.

Advancement Achieved in Next-Generation Solar Cell

(Korea Times of 29 06 2009)

A team of South Korean researchers suggested a new approach that enables dramatic improvement in the low-cost, thin-film solar cells now being developed in laboratories around the world. The new technique could improve the power conversion rates of dye-sensitized solar cells by more than 50 percent of the current level once commercialization is made. Dye-sensitized solar cells, a relatively new class of thin-film solar cell, are considered extremely promising as they are easier to manufacture and use cheaper materials than conventional solar technologies. They can also be engineered into flexible sheets, and are mechanically robust, requiring no protection from minor events

like hail or tree strikes. However, improving efficiency has been a major issue. Current lab prototypes of dye-sensitized solar cells convert about one tenth of the incoming sun's energy into electricity, which is about half as efficient as the commercial, silicon-based cells used in electronics devices and rooftop panels. Thus, extending the range of light absorption has been a key issue, and scientists have been coming up with a variety of surfaces and structures to generate a bigger jolt. Park Nam-gyu, a researcher from the Korea Institute of Science and Technology (KIST), said his team has discovered a breakthrough method, which enables a sequential bonding of dyes in the thin, titanium dioxide (TiO₂) layers used in dye-sensitized solar cells.

5. Space

S. Korea opens 'space era' with Naro center's completion

(Yonhap News Agency of 10 06 2009)

With the completion of its new space center, South Korea hopes to lead advances not only in exploration but also in defense and commercial technologies, experts here said on June 10th. The Naro Space Center is at the heart of an ambitious program that aims to send an unmanned probe to the moon in the next 20 years and make South Korea the 13th country in the world to send a satellite into space from its own territory. Seoul has poured roughly US\$248 million into the project since 2003. The facility, which officially opens on Thursday, occupies 5.07 million square meters of land on the southern coast.

Gov't to conduct space rocket launch safety check

(Yonhap News Agency of 15 06 2009)

The government said that it will conduct a full-fledged safety check to determine the readiness of controllers and agencies that are preparing to launch the country's first space rocket next month. The three-day-long exercise will begin June 16th and simulate the actual launch of the Korea Space Launch Vehicle-1 (KSLV-1) that will blast off from the Naro Space Center in Goheung, 485 km south of Seoul, the Ministry of Education, Science and Technology said.