

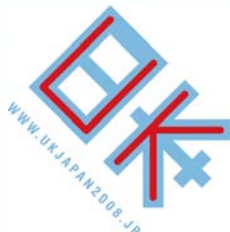


**February 2008**

British Embassy Tokyo  
Science & Innovation  
Section **Newsletter**

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# 1. Editorial

## Driving forward 'Green IT' initiatives

The topic of Green IT has reached governmental level in Japan. On February 1<sup>st</sup> under the auspices of the Ministry of Economy, Trade, and Industry (METI) industry declared to set up 'Green IT Promotion Council'. Main activities of this council include 1) promotional activity, 2) establishment of collaboration with other organisations abroad with the same vision, 3) proposing innovative technologies to be developed, and 4) statistical analysis of the impact of IT/electronics technologies on energy-saving. Also METI established a new R&D project focused on the following topics: server/storage energy saving technology, electric power saving technologies of network equipment, and display technology with organic EL. METI spends GBP 13.2 million for these projects.

Climate change appears as a critical issue and the increasing volume of information distributed over the Internet is feeding concerns about the associated increase in electricity consumption. The Green IT Council indicates that the amount of information handled in our society will grow to about 200 times as much in 2025. According to METI, 50 billion kilowatt-hours of electricity were used nationwide in 2006. IT-related energy consumption in Japan has been rapidly increasing.

On the other hand, electronics and IT play a significant role in promoting measures to tackle global warming. According to the study by the Ministry of Information and Communications (MIC), the ubiquitous network society will actually contribute to decrease the amount of CO<sub>2</sub> emission. It is estimated that reducing commuter traffic and traffic jams by teleworking and ITS, and introducing more effective production, distribution and consumption such as e-commerce and IC tag etc will reduce CO<sub>2</sub> emission up to 26.5 Mt.

Japan has been an expert in developing energy saving technologies and been conducting related R&D more than few decades since the Oil Shock. Japanese companies have successfully developed extensive markets for solar cells, liquid crystals, and lithium ion batteries.

Most of the 118 members of the Green IT Council are major electronic and IT companies. The council is chaired by Mr. Katsuhiko Machida, the chairman of the Japan Electronics and Information Technology Industries Association (JEITA) and the chairman of Sharp Corp.

The Japanese government has been supporting energy-saving policies for quite a long time. METI is now seeking to use this opportunity as a way to help Japan achieve its global warming target under the Kyoto Protocol. At the first meeting of the Green IT Initiative Conference in December 2007, METI proposed the framework that will serve to develop more energy-efficient electronic and information devices and use these technologies to achieve environmental conservation and economic growth. The Green IT initiative can be perceived as a new attempt led by private sector, which seeks to promote not only energy-saving products but also energy saving system led by information system integrators. Some Japanese electronics and IT companies have actively introduced more efficient supply chains by using IT technology as a result of concerns about environment friendly facilities. The Council will host an international symposium concerning green IT and prepare the 'environmental showcase', which introduces Japan's environmental technologies to summit participants. Then the significant thing is for the Council to raise international awareness of Japan's approach to environmental conservation.

Yumiko Myoken  
Science and Innovation Section  
The British Embassy Tokyo

## 2. Recent Reports from Tokyo S&I Section

Title	Category	Issued Date
Overview of ICT Strategy in Japan	ICT	31-Jan-08
Japan's Science and Technology Budget for FY2008	Policy	12-Feb-08
Systems Biology Research in Japan	Life Science	30-Nov-07
Biophotonics in Japan: Advanced Technologies for Molecular Imaging	ICT	30-Oct-07
Waste Reduction in Japan	Energy & Environment	30-Oct-07

## 3a. News Headlines: science and innovation policy

### **National project for carbon fibre materials for automotive sector**

The Ministry of Economy, Trade and Industry (METI) will launch a five-year project to develop high-strength carbon fibre materials for automobiles later this year. The project is aimed at making low-cost and high-processability materials using commodity resins such as polypropylene as a base material. METI expects such materials to be put into practical use in 8-10 years and lighten vehicles by 40%, resulting in 30% higher fuel efficiency. Japan manufacturers account for 70% of carbon fibre production in the world. (1 February 2008, Nikkei Shimbun)

### **Government to promote R&D services business by establishing a study group**

The Ministry of Economy, Trade and Industry (METI) attempts to give an impetus to economic growth and technology innovation by promoting the growth of the R&D service business. METI will set up a 'Study Group on the R&D Service Industry' in April and summarise strategies to boost the productivity of companies which conduct R&D and design. The group also works on the management of IP for products developed by this funded research. The establishment of an industrial association is now under consideration. (11 February, 2008, Nikkan Kogyo Shimbun)

### **Government to adopt strategies for Intellectual Property Rights in ICT**

The Ministry of Internal Affairs and Communications (MIC) will employ strategies for intellectual property rights by delegating authority from communication and broadcasting companies such as NTT and NHK to the communication and equipment manufacturers. MIC has selected ten topics that are of foremost importance for the future growth of ICT in Japan. Also, MIC will soon set up an 'ICT standardisation/IP centre' as a main supporting organisation. In each of the ten topics, MIC will establish a comprehensive system consisting of universities, industry, and government with the aim of supporting standardisation. (15 February, 2008, Nikkan Kogyo Shimbun)

### **METI changes stance on emissions trading**

The Ministry of Economy, Trade and Industry (METI) will study the introduction of cap and trade EU-style emissions trade scheme. With the aim of launching it after the expiration of the Kyoto Protocol in 2013, METI will co-ordinate with the industries that are taking a cautious approach to an obligatory emissions reduction target. There will be a growing move to introduce the emissions trading scheme in Japan as METI changes its policy. (20 February 2008, Nikkei Shimbun)

### **Number of doctoral students falls**

The number of students who applied for doctoral courses at universities stood at 20,800 in Japan in fiscal 2007, 21% less than the total capacity of 23,400, according to the Ministry of Education, Culture, Sports, Science and Technology. Students are shying away the most from engineering and sciences courses, as the number of applicants were merely 65% of the capacity (5,503) and 69% of the capacity (2,070) respectively. Behind the move is the difficulty of finding a job – only 58.8% of fresh Ph.D. holders found employment. Meanwhile, applicants for liberal arts, education and art slightly exceeded the capacities despite an even worse employment situation than engineering and science degree holders. (27 February 2008, Nikkei Shimbun)

## 3b. News Headlines: IT and communications

### **AIST and Rohm develop a new high sensitive image sensor**

AIST (Advanced Industrial Science and Technology) and Rohm have achieved a new imaging sensor that is six times more sensitive than a silicon sensor. This sensor is capable of detecting not only visible light but also infrared light. Thus it is suitable for night photography and can be used as a monitoring camera and in-car camera. AIST and Rohm seek to commercialise the technology within two to three years. (5 February, 2008, Nikkei Sangyo Shimbun)

### **NTT laboratories pursue new technologies for cryptographic process**

NTT Information Sharing Platform Laboratories have developed new software technologies to accelerate signalling speed of VPN (Virtual Private Network), which enciphers transmission data and connects with a dedicated line. The signalling speed is four times faster than before. This new technology does not need to encrypt data at an intermediary device as in the past, but effectively transmits users' data on a network. Within two years, NTT intends to put it to practical use. (6 February 2008, Nikkei Sangyo Shimbun)

### **NEC develops LSI for radio communication to save electronic power**

NEC has developed a high-energy saving LSI for radio communication, which they presented recently at the ISSCC (International Solid-State Circuits Conference), held in San Francisco. NEC's LSI for radio communication saves ten times as much power as before through the use of fast and energy-saving frequency bands for communication control and data transmission. NEC plans to put this to practical use within two to three years. (7 February 2008, Nikkei Sangyo Shimbun)

### **Toshiba withdraws from next generation DVD of HD-DVD standard**

Toshiba has reconsidered its business strategy by dropping out of the race with Sony group's 'Blue Disk (BD)' and withdrawing from the next generation DVD of HD-DVD standard. The main reason for Toshiba's withdrawal is that the major film companies and retail shops such as Warner Bros., Best Buy and Wal-Mart in the United States have agreed to support BD. Although Toshiba provided big discounts for its players early this year, it could not successfully gain sales profits. (17 February 2008, Nikkei Shimbun)

### **Mitsubishi Electric consolidates a new research facility base for future technology development**

Mitsubishi Electric's new facility combines two facilities focused on advanced technology and product development respectively. The investment for the new facility will cost about 5 billion yen (24 million GBP). The new facility will concentrate on photovoltaic generation and energy-saving power semiconductors, etc. to raise productivity and accelerate the speed of manufacturing. For further industry and academic collaboration, the facility will also set up a collaboration office. Mitsubishi plans to accept 20 researchers from outside of the company every year. (18 February 2008, Nikkei Sangyo Shimbun)

### **Mitsubishi Electric pursues new ultra high-definition with a high-resolution image**

Mitsubishi Electric has achieved an ultra high-definition technology through combining multiple images from high-definition cameras. The experiment was carried out by five high-vision cameras and PCs connected with a LAN. It was demonstrated that the new technology can combine high-definition cameras almost instantaneously. In the future, Mitsubishi will conduct research to develop the technology to respond to camera movement as well as zoom. (22 February 2008, Nikkei Sangyo)

### **Ricoh invests 24 billion yen (113 million GBP) for new research facility consolidation in Kanagawa**

Ricoh plans to consolidate its facilities focused on printers and copiers in Ebina City, Kanagawa by the end of August 2010. To compete with Canon and other competitors, Ricoh decided to establish a comprehensive system including toner and software in order to achieve a 30 percent reduction in time for product development. Ricoh will also introduce a new design technology to re-examine the development process and arrange a system to examine the performance of electrons. (25 February 2008, Nikkei Shimbun)

## 3c. News Headlines: life sciences

### **RIKEN finds nucleolus holds clues to embryonic development**

Researchers at RIKEN have found that the nucleolus is an essential component for early development of

embryos. In a fertilised embryo, ovum and sperms separately create pronuclear nucleoli, which are then fused to become a nucleus. In collaboration with research institutes in the Czech Republic and Italy, the team led by Sugako Ogushi at the RIKEN Centre for Developmental Biology has discovered that fertilisation between normal sperms and ova lacking a nucleolus failed to create nucleoli in both pronuclear nucleoli, and then cell differentiation stopped. That means the nucleolus has a maternal origin, and is crucial for further embryonic development. (1 February 2008, Nikkei Shimbun)

#### **RIKEN and Kyoto University produce retinal cells from ES cell more effectively**

RIKEN and Kyoto University have jointly developed a technique to produce retinal cells from embryonic stem cells more effectively than before. The team, led by Masayo Takahashi at the RIKEN Centre for Developmental Biology, has made a step closer to develop regenerative medicine to treat serious ophthalmic diseases. Using ES cells of monkeys, the team found four kinds of molecules that make ES cells turn into visual cells, and applied the finding to human ES cells. (4 February 2008, Nikkei Shimbun)

#### **Takeda acquires Amgen's Japan unit**

Takeda Pharmaceutical has agreed to purchase a Japanese subsidiary of Amgen for more than 90 billion yen (GBP428 million). Takeda will acquire the rights to develop and sell the US biotech company's 13 drug candidates, including treatment for rectal cancer, for the Japanese market. The deal represents Takeda's ambition to accelerate mergers and acquisitions to strengthen global businesses. (5 February 2008, Nikkei Shimbun)

#### **Tokyo and Keio Univs develop a safer device for anti-thrombotic treatment**

The University of Tokyo and Keio University are set to commercialise the medical use of diamond-like carbon (DLC), which is usually used to coat the surface of automobile parts and industrial tools. Tetsuya Suzuki, Professor of the Faculty of Science and Technology at Keio University developed a method to coat tiny guide wires, which are inserted into blood vessels to guide a catheter during antithrombotic treatment. Rough moves of the guide wire could tear the inner walls of vessels, but the DLC coating could make its move smoother, leading to enhancement of the safety of treatment. Koki Takahashi, professor of the Faculty of Medicine, the University of Tokyo will start evaluating the safety of the technology and studying possible side effects ahead of commercialisation. (6 February 2008, Nikkan Kogyo Shimbun)

#### **Osaka University Unveils Detailed Mechanisms of DNA Vaccines**

Immunologists at Osaka University have found a key molecule that elucidated detailed mechanisms of how DNA vaccines work in vivo. The team led by Professor Shizuo Akira and Associate Professor Ken Ishii found that an enzyme called TBK1 is essential to make immunological functions work properly in the body, overturning the conventional hypothesis that toll-like receptor 9 (TLR9) would be a key for DNA vaccines. The new finding will likely pave the way for developing more effective DNA vaccines and gene therapies. (7 February 2008, Nikkei Sangyo Shimbun)

#### **Kyoto and Osaka Univs develop cutting-edge laser knife**

Researchers at Kyoto University and Osaka University have jointly developed a laser knife which allows the user to pick up a single living cell from animal or plant tissues. Masaaki Sakakura, a materials engineering specialist at Kyoto University and Shinichiro Kajiyama, a cell engineer at the Graduate School of Engineering at Osaka University hope the new device will be useful to culture effectively induced pluripotent stem (iPS) cells for regenerative medicine in the future. The knife emits an ultra short-pulse laser at 100 femto per second towards a tissue and cuts a targeted cell out of it. This method doesn't hurt surrounding tissues, so the user can easily take out a targeted cell safely even in deep tissue places. (11 February 2008, Nikkei Shimbun)

#### **FUJIFILM purchases Toyama Chemical to beef up pharma business**

FUJIFILM Holdings reached an agreement to acquire Toyama Chemical for more than 100 billion yen (GBP434 million). While the imaging company is already establishing its footing in medical equipment business, it will take advantage of Toyama's expertise in drug development to strengthen its fledgling pharmaceutical business. FUJIFILM will also form an alliance with Toyama's leading shareholder, Taisho Pharmaceutical. Toyama has been developing new drugs such as therapeutic treatments for avian influenza, but due to swelling R&D costs it marked a loss for fiscal 2006. (13 February 2008, Nikkei Shimbun)

#### **Kyoto University creates iPS cells from mouse's liver, stomach cells**

Professor Shinya Yamanaka of Kyoto University has progressed his technique to tweak mice and adult human skin cells into a state resembling embryonic stem cells called induced pluripotent stem (iPS) cells. He is now capable of doing so with liver and stomach cells of mice by using the same gene-engineering,

retrovirus techniques. Both hepatocytes and gastric epithelial cells turned into iPS cells, which then developed into bowel, muscles and neurons. Those iPS cells were less likely to trigger cancer than iPS cells generated from skin cells. (15 February 2008, Nikkei Sangyo Shimbun)

### **Think tank unveils big plan to produce energies from seaweed**

The Mitsubishi Research Institute (MRI) has recently recommended Japan mass-culture seaweed to collect natural resources such as bio-ethanol and uranium. In the "Apollo and Poseidon Initiative 2025," MRI suggests that Japan cultures gulfweed, which can grow more than 2 metres high a year in the sea. The plants could also absorb carbon dioxide and purify the seawater, and can be used as non-food alternative energy sources for bio-ethanol. In April, MRI plans to inaugurate a consortium comprising public research institutes and manufacturers to move the plan forward. Using advanced molecular and gene-engineering technologies, MRI estimates that Japan would be capable of producing 65 million metric tons of gulfweed a year, and recovering 195 million tons of uranium – 40% of Japan's total consumption – that is absorbed in the seaweed. (19 February 2008, Nikkan Kogyo Shimbun)

### **Universities, companies develop rice for cholera vaccine**

Universities, public research institutes and private companies have jointly developed rice that contains a vaccine to prevent cholera. The team, including Hiroshi Kiyono of the Institute of Medical Science at the University of Tokyo, Rohto Pharmaceutical, Chiba University and the National Institute of Agrobiological Sciences modified rice genes and replaced some ingredients in rice paddies with proteins of cholera bacillus. Mice suffering from cholera gradually got better when they ate the rice three times fortnightly. In the future, the team hopes to develop similar types of rice for different applications such as a vaccine for influenza. (22 February 2008, Nikkei Sangyo Shimbun)

### **Hospitals to launch large-scale clinical research on Alzheimer's disease**

Thirty-four medical institutions will launch in March a large-scale project to develop a better diagnosis of Alzheimer's disease. In collaboration with 10 pharmaceutical companies and seven imaging equipment makers, they will collect brain images and blood samples from 600 healthy people and patients with Alzheimer's disease or light dementia. By following their records for three years, these institutions will investigate changes in the hippocampus, where memory is stored, as well as the degree of accumulation of chemical substances such as amyloid  $\beta$  protein, which is thought to be the cause of the disease. Led by Takeshi Iwatsubo, a neuroscientist at the University of Tokyo, the project participants aim to apply their findings for developing more effective methods to diagnose patients. (25 February 2008, Nikkei Shimbun)

### **Takeda remains top in domestic drug sales**

Takeda Pharmaceutical remained top in domestic sales of pharmaceutical drugs in 2007, taking in 648.3 billion yen (GBP3.08 billion), shows a survey by IMS Japan. Astellas Pharma came second, followed by Daiichi Sankyo, Pfizer, Chugai Pharmaceutical and Novartis. Cumulative sales of the top 20 companies stood at 5.17 trillion yen (GBP24.6 billion), or 64.2% of the total. Sanofi-Aventis, which was ranked the 16th, saw sales of antiplatelet drugs Plavix rose more than 100%. Astrazeneca, the 11th, enjoyed a double-digit sales rise for cancer treatments such as Casodex. Like last year, hyperlipemia treatments were the biggest seller in the market. (27 February 2008, Nikkan Kogyo Shimbun)

## **3d. News Headlines: energy and environment**

### **10-year-equivalent operation of dye-sensitised photovoltaic cells**

Fujikura has succeeded in a 1,000-hour consecutive operation of dye-sensitised photovoltaic cells under high temperature and high humidity. One of the issues to be address for the commercialisation of the cells is durability. The 1000-hour operation under a condition of 85°C and 85% humidity corresponds to 10-year use in normal condition. They have devised the sealing of electrolyte and dye. The company is accelerating developments to improve its photoelectric conversion and to cut costs towards the commercialisation. (4 February 2008, Nikkei Sangyo Shimbun)

### **Test-market of Bioethanol made from waste food**

Nippon Steel Engineering will test-market petrol blended with 3% of bioethanol (E3) made from waste food in Kitakyushu in the southern part of Japan. They will sell the fuel not to general drivers but only to around 50 vehicles owned by the company and the local government at two refuelling stations. The production will start at 200 litters per day out of a capacity of 1,800 litters. There are several demonstration projects across the

nation, for example, in Osaka and Okinawa. (5 February 2008, Nikkei Sangyo Shimbun)

### **Beer brewers' bioethanol production**

Japan's major beer brewers will start bioethanol production from cellulose contained in waste food or non-food plants. These companies plan to embark on full-scale business in the growing biofuel market, exploiting their expertise such as yeast. A waste food company in Shizuoka will start the operation of a plant that employs Sapporo's technology to make bioethanol from waste food. Suntory will launch a collaborative research to simplify production using special yeast with Kobe and Kyoto universities. Kirin plans to develop a technology to make bioethanol from beer production waste. (6 February 2008, Nikkei Shimbun)

### **Japan's co-operation to improve the energy efficiencies of Chinese and Indian steelworks**

Japanese steel companies, in conjunction with the Japanese Government, will support China and India to improve energy efficiency at their steelworks. After investigating several steelworks in these nations, such companies as Nippon Steel and JFE Steel will start the introduction of energy-saving facilities including heat recovery systems in the Fiscal Year 2008. This is aimed at obtaining emission rights under a Kyoto Protocol scheme, the Clean Development Mechanism. (8 February 2008, Nikkei Shimbun)

### **System to sell excess electricity generated by wind power**

Zephyr, a manufacture of small wind power generators, has developed a system to sell excess electricity generated by wind power to electricity companies. The system contains a capacitor for stable power transmission to the power grid as well as an AC/DC converter. The system has the potential to enhance the deployment of residential wind power generators. (13 February 2008, Nikkei Sangyo Shimbun)

### **Demonstration of superconducting cables at a substation**

Sumitomo Electric Industries and Tokyo Electric Power will test superconducting cables connecting to the power system at a substation for a year in autumn 2010. They will demonstrate high-temperature superconducting cables that are cooled by liquefied nitrogen at 196°C below zero. This technology costs less than low-temperature cables that need coolant of minus 269°C. It is expected that superconducting cables will be put into practical use around 2020 and cut power transmission costs by 40% in the future. (14 February 2008, Nikkan Kogyo Shimbun)

### **Demonstration of new type of fuel cells**

Osaka Gas will start to demonstrate 20 units of a residential co-generation system using solid oxide fuel cells (SOFC) in the fiscal 2008. The efficiency of power generation of SOFC is higher than other types of fuel cells because it works at higher temperature and its waste heat can be used to reform fuel. This high temperature enables the system to heat water efficiency as well. The company plan to extend its lifetime to over 10 years. (14 February 2008, Denki Shimbun)

### **Plan for Japan's largest 10,000kW solar power generation**

It was revealed that Sharp and Kansai Electric Power (KEPCO) requested the Osaka Prefecture Government to allow them to build a solar power generation station in a final disposal land for industrial waste. Its rated output is planned at Japan's largest 10,000kW. They like to start the construction as early as the fiscal 2009. The site is near the area where Sharp is building world-class plants for liquid crystal panels and photovoltaics. (15 February 2008, Nikkan Kogyo Shimbun)

### **Energy-efficient and environmentally friendly cement plant**

Kawasaki Plant Systems, an affiliated company to Kawasaki Heavy Industries, has developed an energy-efficient and environmentally-friendly cement plant. They employed a technology called a fluid bed that is used for boilers and waste incinerators. The plant is operated at a temperature of 1300°C, 500-700°C lower than conventional ones, and as a result emits 40% less nitrogen oxide. Moreover it consumes over 10% less fuel and emits nearly 10% less carbon dioxide. (19 February 2008, Nikkei Sangyo Shimbun)

### **Expanding soil remediation business**

Japan's major general contractors are expanding their soil remediation business. The needs of remediation are growing as land deals among companies are increasing and regulation became stricter. Takenaka, for example, is preparing for the launch of business to clean soil contaminated with PCB and dioxins in early 2009. Shimizu will introduce a new treatment machine that takes two weeks for assembling on a site, half of the existing ones, enabling to shorten required time and cut costs. (23 February 2008, Nikkei Shimbun)

### **Sharp and home builder to develop batteries for solar power**

Sharp will tie up with Daiwa House Industry and Dai Nippon Printing to develop lithium ion batteries for

houses to store power generated by photovoltaic systems. They plan to mass-produce the batteries as early as 2009. The co-operation between the top PV producer and the second ranked home builder is expected to contribute to promoting PV deployment and reducing carbon dioxide emissions. (26 February 2008, Nikkei Shimbun)

#### **Low-carbon house sale**

Sekisui House, Japan's largest home builder, will market low-carbon houses. The houses are 20% more airtight and are equipped with a fuel cell system to supply power and hot water, a photovoltaic system and energy-saving appliances such as LED lights and a dish washing and drying machine. In addition to costs for the instalment of these devices, 3 millions yen (GBP14,000), the fuel cell system costs 100,000yen (GBP480) annually as rental fee. However, fuel and light expenses are projected around 190,000 yen (GBP900) cheaper. (29 February 2008, Nikkei Shimbun)

### **3e. News Headlines: materials and chemicals**

#### **Carbon nanotube's superconducting phenomenon**

A research team led by Associate Professor Junji Haruyama of Aoyama Gakuin University has observed evidence that carbon nanotubes become superconductive. They found the Meissner effect, which is one of the unique physical phenomena in superconducting, in the material at 253°C below zero. The discovery is expected to expand the potential applications of carbon nanotubes. The group included researchers from the University of Tokyo and Nagoya University. (11 February 2008, Nikkei Shimbun)

#### **Major companies to develop materials at radiation facility**

A consortium of 16 companies and one university will develop advanced materials at the world's largest radiation facility Spring-8. These developments will include organic EL, materials for films for liquid crystal displays and small fuel cells. The group including Asahi Kasei, Toray and Canon will build a facility for the developments at Spring-8 by summer 2009. At present, there are a limited number of radiation facilities in Japan that allow companies to use them with flexibility. (15 February 2008, Nikkei Shimbun)

#### **To mass-produce carbon fibre components for automotive**

Japanese carbon fibre producers will start the mass-production of automotive components as early as 2010. Carbon fibre resin are ten-times stronger and four-times lighter (but more expensive) than steel products. These companies, including Toray Teijin and Mitsubishi Chemical, expect to make up the cost gap with mass-production and automotive companies' growing needs to response to tighter environmental regulations in industrialised nations. It is said that these advanced materials can make vehicles 10% lighter and as a result improve fuel efficiency by 4-5% when applied to major components. (29 February 2008, Nikkei Shimbun)

### **3f. News Headlines: automotive**

#### **New power charging system of hybrid bus developed by Hino and MLIT**

The new hybrid bus developed by Hino and The Ministry of Land, Infrastructure, Transport and Tourism (MLIT) can charge its battery without connecting to a power source. The hybrid bus battery receives its power from the roadway by means of an IH (Induction Heater) cooking device. Hino and MLIT have started a test installation as a connecting bus at the terminal in Haneda Airport to collect various data required for practical application. (18 February 2008, Nikkei Sangyo Shimbun,)

#### **Toyota fulfils safety technologies to prevent a collision**

Toyota's new luxury car, the 'Crown', mounts an advanced safety technology called a 'navi-brake assist', which supports brake operation when a vehicle approaches a stop sign. When the vehicle starts to slow down near a stop line, the driver will be instantly informed by the car's navigation system and it will apply the brakes. The Crown is also equipped with 'pre-crash safety system', which prevents collisions by detecting the driver's eye movements. (19 February 2008, Nikkan Kogyo Shimbun)

#### **Matsuda and Fuji Heavy Industry promote safety technologies**

Matsuda has developed a preventive safety technology, which informs the driver whenever radar detects a

vehicle behind his. Matsuda has decided to mount the technology to its flagship car models. In addition, Fuji Heavy Industry will mount a crash-avoidance system to their mini-vehicles in 2010. Instead of expensive radar, Fuji Heavy Industry uses a high-performance stereo camera which can detect pedestrians in front of the car. (26 February 2008, Nikkei Shimbun)

### 3g. News Headlines: Aerospace

#### JAXA withdraws development of its communication satellite

JAXA has decided to withdraw the development of its communication satellite. 'Kizuna', an ultra-fast Internet satellite, is the last technology demonstration satellite. JAXA's five-year plan from April onward does not include any projects related to communication satellites. 'Kizuna' has been faced with difficulties in exploring intended end-usage. With increasing concerns about climate change, JAXA will shift its priority to an Earth-observation satellite. (8 February 2008, Nikkei Shimbun)

#### Space Activities Commission launches EU-Japan Mercury exploration

The Space Activities Commission will carry out its EU-Japan Mercury exploration plan, called 'Bepi-Columbo', and take a step forward to the stage of collaborative development. In the plan, two spacecraft will observe magnetic fields and the surface of Mercury, with an aim toward clarifying the environment surrounding Earth and the formation mechanisms of the planet. The launch and one-year observation are planned in 2013 and 2019 respectively. (13 February, 2008, Nikkei Sangyo Shimbun)

### 4. Forthcoming Events

Event	Project	Date	Venue
<b>February 2008</b>			
Low Carbon Society Reception	Reception	13 Feb	British Embassy
SDI Ion Channel Seminar	Seminar	19 Feb	British Embassy
Lecture by Sir Paul Nurse	Seminar	27 Feb	British Embassy
Seminar on Sharing Best Practices in Technology Transfer between UK and Japan	Seminar	18-20 Feb	Kyoto & Osaka
Fuel Cell Seminar	Seminar	26 Feb	International House of Japan
<b>March 2008</b>			
Biophotonics Mission	Mission	3-7 March	
Japanese Business/Govt/Academic Mission to the UK on Intelligent Transport Systems		3-7 March	UK
Tribology Gold Medal Award Ceremony	Ceremony	11 March	British Embassy
Lecture by Professor Roger Cashmore	Seminar	27 March	British Embassy
<b>April 2008</b>			
Prof Ian Wilmut & Prof John Gurdon visit	Visit/Seminar	15 Apr	Kobe, Kyoto
<b>May 2008</b>			
G8 Head of Research Councils Meeting	Visit	17-19 May	Tokyo
Sir Martin Evans visit	Visit	11-12 May	Kyoto
<b>June 2008</b>			

Sir Tim Hunt lecture	Seminar	11 June	Keio University
Carnegie Group Meeting	Visit	13-14 June	Okinawa