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Science, Technology and Education News from Taiwan Number 17 — November 2009

Taiwan is the second-most innovative economy in Asia, next to Singapore, and ranked 13th among 131 countries globally, a report by the World Economic Forum. "In less than half a century Taiwan has transformed itself from a simple agricultural society in the earliest stage of development into a global technology powerhouse, a world leader in the production of ICT equipment with a supporting infrastructure of science parks and public-private research institutions and think tanks that have played a critical role in turning Taiwan into one of the most prolific innovators in the world," the report said. WEF attributed Taiwan's success to two factors: doing many of the good things that have also been critical to high growth elsewhere in the world — including taking full advantage of the benefits of international trade and investment and acquiring new technologies — and avoiding the errors that have been such a drag on development in many other countries. Taiwan's challenge in the coming years will be to find creative ways to cooperate with China — an emerging technology power in her own right, with a much lower cost structure — and to move closer to the best performers in the innovative capacity index.

Highlights of major news from the scientific world in Taiwan in November 2009:

Taiwan's creativity has won global acclaim after a project, Shadow Guide, by the Industrial Technology Research Institute (ITRI) South finished second in the 2009 European Satellite Navigation Competition (ESNC). - Taiwan has emerged as the top winner at the 2009 Nuremberg Invention Exhibition, capturing 26 gold medals, 26 silvers and 15 bronzes. - Taiwan visual designer Lin Horng-jer has won a "best of the best" prize in the communication design category of the 2009 red dot design awards -- the world's largest and most prestigious design competition. - NCTU developed a new lead-free piezoelectric material, called BiFeO₃, that will be able to produce clean energy very efficiently. - The government plans to develop Chung Hsing New Village in Nantou County into a research base for the knowledge economy and industrial upgrading, with particular emphasis on green-energy efforts such as research on hydrogen energy and the application of information technology in energy management. - A Taiwanese research team has developed a special microchip that can be implanted in the human body to control or relieve low back pain.

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1. Heart disease R&D center set up at hospital

(China Post 03 11 2009)

The Taipei Veteran General Hospital (Taipei VGH) signed an agreement with Sanofi-aventis to jointly set up a clinical research and development center that will explore new drugs for treating heart disease.

Full article:

<http://www.chinapost.com.tw/taiwan/national/national-news/2009/11/03/231174/Heart-disease.htm>

2. Taiwan wins berth in European satellite-navigation race

(Central News Agency 04 11 2009)

Taiwan's creativity has won global acclaim after a project by the Industrial Technology Research Institute (ITRI) South finished second in the 2009 European Satellite Navigation Competition (ESNC) with Shadow Guide - a guiding solution to help people enjoy their trip. It was one of 289 entries from 18 regions across the globe. Taiwan alone had 48 entries, or 16.6 % of the total, the highest participation rate of any country in the competition. Taiwan last year became the first country from Asia to compete in the event. "Shadow Guide" is a navigational device which can be encased into a package the size of a wrist watch and its monitoring capability can extend up to several kilometers, ITRI said in a statement. In addition to a single direction display function, it enables multiple users in a group to communicate with one another.

Full article:

http://www.etaiwannews.com/etn/news_content.php?id=1098572&lang=eng_news&cate_img=49.jpg&cate_rss=news_Society_TAIWAN

3. MOEA, Microsoft ink pact to develop cloud computing-based strategy

(Central News Agency 04 11 2009)

The Ministry of Economic Affairs (MOEA) and Microsoft signed a memorandum of understanding (MOU), with both agreeing to set up a "Software and Services Excellence Center" in Taipei by the end of this year to enhance business opportunities arising from a "three screens and a cloud" strategy. Cloud computing is a Web-enabled software solution based on the use of computer technology. It allows clients who have no knowledge of or expertise in the technology infrastructure to complete common business applications online that are accessed from a Web browser.

Full article:

<http://english.cna.com.tw/ReadNews/Detail.aspx?pSearchDate=&pNewsID=200911040031&pType1=ED&pType0=xEMST&pTypeSel=0>

4. Taiwanese scholars elected to International Academy of Astronautics

(Central News Agency 04 11 2009)

Two Taiwanese scholars have been elected as members of the non-government International Academy of Astronautics (IAA). Professor Miao Jiun-jih of NCKU is an expert in aerospace engineering, the science of turbulence, fluid mechanics, aerospace education and energy technology, and he also serves as director of the state-run National Space Organization, while Liu Yuei-an serves as chief of the National Central University Center for Space and Remote Sensing Research.

Full article:

<http://english.cna.com.tw/ReadNews/Detail.aspx?pSearchDate=&pNewsID=200911040020&pType1=JD&pType0=xJDLNHH&pTypeSel=0>

5. Assisted reproductive technology could be cash cow: doctor

(Central News Agency 09 11 2009)

The number of foreign couples traveling from abroad to seek medical help in Taiwan to enable them to conceive has been growing steadily, thanks to the country's advanced development of assisted reproductive technology (ART),



Lee Mao-sheng, a Taichung-based gynecologist and obstetrician said. Lee himself has accepted couples from 19 countries around the world -- including Japan, the United States, Singapore, Canada, Germany, Switzerland and Australia -- seeking ART treatment. Noting that each couple seeking ART must stay in Taiwan for about two months for successful fertility treatment, Lee said each such stay generates between NT\$300,000 and NT\$400,000 in business, including the costs of the treatment itself, as well as daily spending.

Full article:

http://www.taiwannews.com.tw/etn/news_content.php?id=1103301&lang=eng_news&cate_img=49.jpg&cate_rss=news_Society_TAIWAN

6. Taiwan, Canada to collaborate on pneumonia vaccine

(Central News Agency 10 11 2009)

Taiwan will collaborate with Canada to develop a vaccine that will be able to protect people from the pneumococcus bacteria that causes pneumonia.

Full article:

http://www.taiwannews.com.tw/etn/news_content.php?id=1103666&lang=eng_news&cate_img=49.jpg&cate_rss=news_Society_TAIWAN

7. Taiwan designer wins 'best of the best' in red dot awards

(Central News Agency 10 11 2009)

Taiwan visual designer Lin Horng-jeer has won a "best of the best" prize in the communication design category of the 2009 red dot design awards -- the world's largest and most prestigious design competition. Lin, the first Taiwanese to have won the title in the competition, was recognized for his project "Save Me, " which advocates nature conservation. The piece is made up of three different images: a man embracing the Earth, a polar bear with melting icebergs in the background, and three Formosan landlocked salmon, an endangered species and national treasure of Taiwan.

Full article:

http://www.taiwannews.com.tw/etn/news_content.php?id=1104115&lang=eng_news&cate_img=49.jpg&cate_rss=news_Society_TAIWAN

<http://english.cna.com.tw/ReadNews/Detail.aspx?pSearchDate=&pNewsID=200911090005&pType1=ED&pType0=xEMST&pTypeSel=0>

8. Taiwan excels at world's oldest Nuremberg invention show

(China Post 10 11 2009)

Taiwan has emerged as the top winner at the 2009 Nuremberg Invention Exhibition, capturing 26 gold medals, 26 silvers and 15 bronzes, plus the coveted team championship, at the conclusion of the fair. National Yunlin University of Science and Technology in southern Taiwan won three gold with a high-performance accelerometer, uricase enzyme biosensors, and methods for fabricating a chlorine ion sensing membrane. The Technology and Science Institute of Northern Taiwan, Far East University and National Chin-Yi University of Technology each won two gold. - Meanwhile, National Pingtung University of Science and Technology earned a special award for an innovative power generation and storage system that uses both solar and wind power. - An invention by National United University students that can help reduce automobile exhaust emissions attracted the interest of a German company. - Many researchers from the Instrument Technology Research Center under the National applied Research Laboratories, as well as several private inventors, also won gold medals and other accolades for their innovative instruments and devices in memory chip examination and multimedia transmission systems. - The Taiwan team, drawn from 22 universities, colleges, and high schools, was the country's biggest representation ever at the show.

Full article:

<http://www.chinapost.com.tw/taiwan/national/national-news/2009/11/09/232069/Taiwan-excels.htm>



9. Taiwan's researchers find patterns in dengue fever outbreaks

(China Post 12 11 2009)

Researchers commissioned by the government to study the prevalence of severe infections of dengue fever have found that there is a higher occurrence of dengue hemorrhagic fever infection — a deadly form of dengue fever — in places in which the outbreak of the mosquito-transmitted dengue disease lasts a long period of time, and the number of outbreaks is high.

Full articles:

<http://www.chinapost.com.tw/taiwan/national/national-news/2009/11/12/232395/Taiwans-researchers.htm>

<http://english.cna.com.tw/ReadNews/Detail.aspx?pSearchDate=&pNewsID=200911110034&pType1=JD&pType0=xJDLNHH&pTypeSel=0>

10. Taiwan, China to cooperate on biomedical, other projects

(China Post 12 11 2009)

Biomedical companies in Taiwan and China reached an agreement for cooperation on 10 projects, a step that is expected to lead to expansion of the emerging industry on both sides of the Taiwan Strait. Biomedical and health care industry has been listed by China as one of six emerging industries for priority development.

Full article:

<http://www.chinapost.com.tw/taiwan/china-taiwan-relations/2009/11/12/232392/Taiwan-China.htm>

11. Local researchers develop new green energy material

(Central News Agency 15 11 2009)

A local research team has developed a new lead-free piezoelectric material, called BiFeO₃, that will be able to produce clean energy very efficiently, National Chiao Tung University (NCTU) announced. The material was developed by a research team led by Chu Ying-hao, an assistant professor in NCTU's Department of Materials Science and Engineering, along with other research groups in the United States and Ireland, NCTU President Wu Chung-yu said. The study describing the discovery was published in the Nov. 13 edition of the prominent journal "Science." Piezoelectric materials can convert mechanical energy to electrical energy and vice versa.

Full article:

http://www.taiwannews.com.tw/etn/news_content.php?id=1108432&lang=eng_news&cate_img=49.jpg&cate_rss=news_Society_TAIWAN

12. Taiwan scores biotech breakthrough with H1N1 vaccine success

(Central News Agency 15 11 2009)

The success of the H1N1 vaccine production program marks a breakthrough in Taiwan's biopharmaceutical technology development. With an annual production capacity of 30 million doses, Adimmune is seeking to export its products. Moreover, the company plans to sell its original vaccine to Europe through the Dutch company Crucell, one of its shareholders.

Full article:

http://www.taiwannews.com.tw/etn/news_content.php?id=1108943&lang=eng_news&cate_img=49.jpg&cate_rss=news_Society_TAIWAN

13. Taiwan, China poised to join hands in electric car development

(Central News Agency 15 11 2009)

A cross-Taiwan Strait conference on electric cars is set to usher in closer cooperation between Taiwan and China in the research and development of environmentally friendly electric vehicles. The Ministry of Economic Affairs plans to help build 10 special zones for electric car development around Taiwan over the next three years, in the hope that by 2015, the island will have produced 45,000 electric cars, 15,000 of which will have been exported.



Full article:

<http://english.cna.com.tw/ReadNews/Detail.aspx?pSearchDate=&pNewsID=200911150009&pType1=ED&pType0=xEMST&pTypeSel=0>

14. Academia Sinica researcher awarded UK medal

(China Post 17 11 2009)

Li Wen-hsiung, director and distinguished research fellow at the Biodiversity Research Center of Academia Sinica has been awarded the 2009 Mendel Medal by the UK-based Genetics Society for his lifetime achievement in genetics and evolutionary biology, making him the first Asian winner of the prestigious award. Li, whose specialized research fields involve evolutionary genomics, population genetics and human genetics, was also elected in October by the Academy of Sciences for the Developing World (TWAS) as a fellow. Li is also a fellow of both the National Academy of Sciences, USA, and the American Academy of Arts and Sciences.

Full article:

<http://www.chinapost.com.tw/taiwan/national/national-news/2009/11/17/233023/Academia-Sinica.htm>

15. New Research Park Will Propel Taiwan's Industrial Upgrading

(Central News Agency 18 11 2009)

The cabinet plans to develop Chung Hsing New Village in Nantou County into a research base for the knowledge economy and industrial upgrading, with particular emphasis on green-energy efforts such as research on hydrogen energy and the application of information technology in energy management. The private sector will be invited to set up R&D units for optoelectronics, medical care, and biotechnology, among others, in the park. The 276-hectare park will break ground in 2010 and be completed in 2019 at a total development cost of NT\$10.8 bio. It will accommodate 250 companies, 7,500 R&D personnel, and 16,500 residents, and the companies operating there are projected to spend NT\$5 bio. on R&D annually. A number of government-sponsored institutions have decided to establish operations in the park, including the Industrial Technology Research Institute (ITRI), Institute for Information Industry (III), Institute of Nuclear Energy Research, National Applied Research Laboratories (NARL), and Agricultural Research Institute.

Full article:

http://cens.com/cens/html/en/news/news_inner_30159.html

16. Taiwanese team develops implantable pain control chip

(Central News Agency 26 11 2009)

A Taiwanese research team has developed a special microchip that can be implanted in the human body to control or relieve low back pain. The new device, named implantable pain control SOC, is equipped with two sophisticated electrodes to obtain energy from an external power source and then transmit electromagnetic waves to the spinal cord and thus help alleviate back pain. Similar technology rely on batteries to activate the pain-killing function, which the new development doe not. Further it costs about ¼ or 1/5 of similar existing devices.

Full article:

http://www.etaiwannews.com/etn/news_content.php?id=1118015&lang=eng_news&cate_img=35.jpg&cate_rss=news_Business_TAIWAN