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Introduction

- The **3rd Taiwan-Swiss biomedical symposium** was held in Taipei from 9-11 June, with a total of 25 scientists participating. Novartis organized the conference in conjunction with the National Health Research Institute (NHRI) and Academia Sinica as well as under the guidance of the cabinet-level Science and Technology Advisory Group (STAG). The event is aimed at fostering scientific exchanges between Novartis and Taiwanese institutes and this year's theme was on infectious diseases. On the opening day, Paul Herrling, head of Novartis Corporate Research, gave a report on modern drug discovery for tuberculosis. Kenneth Wu, President of NHRI, addressed the therapeutic potentials of novel prostaglandin actions.
- As part of the promotion of Taiwan's six emerging industries, the **Industrial Technology Research Institute (ITRI) is working with the government to hasten the takeoff of the green energy and biotech industries**. ITRI has moved forward the project calling for 160'000 Electric Vehicles (EV), the Rapid Prototyping Center (RPC) for medical devices, and Advanced Metering Infrastructure (AMI). Taiwan's strengths in electronics and information, coupled with its manufacturing prowess in automobile electronics, components and batteries provide the optimal conditions to develop Electronic Vehicles, according to ITRI. The main objective of creating the RPC for medical devices is to provide a platform to integrate clinical research and engineering technology, and offer a comprehensive mechanism to develop and test prototypes, protect intellectual property and commercialize products. ITRI has also proposed to develop AMI. Distributed energy management software will provide the means to distribute and use energy sources in the most efficient manner. A 60-member strong delegation comprised of representatives from Taiwan's industrial, academic, research and government sectors took part in the 2009 BIO International Convention in Atlanta. A number of the latest biomedical technologies and products developed in Taiwan were on display at the Taiwan Pavilion. One of the research achievements ITRI featured its development of collagen scaffold antibodies. In the area of redesigned drugs, ITRI exhibited the benefits of its Kinase-based drug design research in treating acute myeloid leukemia. Meanwhile, ITRI's diagnostic biomarker research focused on liver, renal and oncology diseases, all of which are common in Taiwan and Asia.
- A Taiwanese research team has made a **breakthrough in the development of DNA-based vaccine patches** that can replace invasive injections as a vaccine delivery method. The DNA-based vaccine patch uses the skin's liposomes as a transport vehicle to deliver vaccine into the body via a non-invasive method. Although the cost of producing a DNA-based vaccine patch is about the same as a regular dose of DNA-based vaccine, the patches are easier to apply, free from the risk of needle contamination and more comfortable for the inoculation receivers, he noted. The DNA vaccine patches, if approved for use on humans, could be used to deliver vaccines against Japanese encephalitis, hepatitis C, dengue fever and even SARS or influenza A(H1N1). The research was published May 4 in the international periodical Journal of Controlled Release, marking the first research report in the world on DNA-based vaccine patches. The patches will be submitted to the U.S. Department of Health and the Food and Drug Administration as a new drug awaiting human trial, but forecast that it will take at least 10 years before the patches can be used on humans.

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1. Taiwan-sponsored telescope project passes major milestone

(Central News Agency, 02 06 2009)

The Atacama Large Millimeter/submillimeter Array (ALMA), a major international telescope project, in which Taiwan is a participant, achieved a major milestone in late April when faint radio waves emitted by Mars were first collected by two 12-meter diameter ALMA antennas, Taiwan's National Science Council (NSC) announced. The ALMA project is an international collaboration among East Asia, Europe, and North America in cooperation with Chile.

Full article:

<http://english.cna.com.tw/ReadNews/Detail.aspx?pSearchDate=&pNewsID=200906020014&pType1=JD&pType0=xJDLNHH&pTypeSel=0>

2. Hon Hai Joins Forces With III to Develop Cloud Computing Software

(Taiwan Economic News, 03 06 2009)

Hon Hai Precision Industry Co., Ltd., the largest EMS (electronic manufacturing service) provider, has joined forces with the government-funded Institute for Information Industry (III) of Taiwan to develop Cloud Computing application software as the first Taiwanese company to get engaged in the field.

Hon Hai has decided to invest a total of NT\$1.9 bio. (US\$58.46 mio.) in constructing an R&D building in Kaohsiung Software Technology Park, southern Taiwan, to specialize in research and development of digital contents and information service offerings.

Full article:

http://cens.com/cens/html/en/news/news_inner_27800.html

3. Taiwan Cabinet to Promote Robotic Industry

(Taiwan Economic News, 03 06 2009)

The Taiwan Cabinet's Technology Consultant Office is considering setting up a robotic industry task force aimed at promoting the integration of the domestic robotic industry through cross-ministerial consolidation.

To that end, the Cabinet will fully support the firms that have invested in the robotic industry, including Hon Hai Precision Industry Co., Asustek Computer Inc., Hiwin Technologies Corp., Mirle Automation Corp., Micro-star International Co., Advantech Co. and Compal Communications Inc.

Full article:

http://cens.com/cens/html/en/news/news_inner_27792.html

4. ITRI, China's Datang Telecom to Open TDSCDMA Test Network in Taiwan

(Taiwan Economic News, 05 06 2009)

The Taiwan government-backed Industrial Technology Research Institute (ITRI) and the mainland China government-held Datang Telecom Technology Co. signed a letter of intent to co-open a network in Taiwan to specifically field test and verify Taiwan-made TD-SCDMA equipment.

The cooperation aims at the mainland's lucrative 3G TD-SCDMA market, which has begun taking shape since the mainland launched the service last month. Industry watchers estimate the mainland will have at least 300 million 3G subscribers in 2013.

Full article:

http://cens.com/cens/html/en/news/news_inner_27854.html

5. Apacer Unveils First Chinese-Developed WiMAX Chip

(Taiwan Economic News, 05 06 2009)

Apacer Technologies recently introduced its APW2050 chip for WiMAX applications, making it the first Chinese company to introduce WiMAX chips. Apacer was founded in Silicon Valley in 2005 by Gwong-yih Lee, who is concurrently chairman of CyberTAN Technology Inc. of the Hon Hai Group. The chip supports all 802.16e WiMAX Wave 2 features, including MIMO Matrix A&B and Beam Foaming. It also supports advanced release-1.5 DL/UL



AMC MIMO capability. Adopting a 65nm process in a 9x9mm 2 package, APW2050 is among the smallest, most cost-effective, low-power mobile WiMAX baseband SoC available.

Full article:

http://cens.com/cens/html/en/news/news_inner_27853.html

6. Local astronomer to receive NASA medal for space exploration work

(Central News Agency, 08 06 2009)

The U.S. National Aeronautics and Space Administration (NASA) conferred a medal on an astronomy professor at National Central University (NCU) in recognition of his achievements on a Saturn exploration space project. Ip Wing-huen, a professor at NCU's Graduate Institute of Astronomy, is an internationally renowned astronomer and one of the initiators of the "Cassini-Huygens" space mission, an international collaboration project involving NASA, the European Space Agency (ESA) and the Italian Space Agency (ASI).

Full article:

<http://english.cna.com.tw/ReadNews/Detail.aspx?pSearchDate=&pNewsID=200906080007&pType1=ST&pType0=xEMST&pTypeSel=0>

7. NSC stresses importance of open source software

(Taipei Times, 11 06 2009)

A sophisticated electric walking cane for the blind is ready for mass production by this summer, the National Science Council (NSC) said, stressing the need for increased development and training for open source software (OSS) technologies.

The cane uses five supersonic sensors and advanced OSS that can drastically improve quality of life for the visually impaired, the council said.

"Though this is not the first electric cane on the market, it is the most sophisticated," said developer Wang Wen-fong, a National Yunlin University of Science and Technology computer science and information engineering professor.

"The cane's supersonic sensors can detect road conditions up to four meters ahead of the user, distinguish between a dry road and one with puddles and even sense whether a tree branch is low enough to hit the user's head," he said.

Full article:

<http://www.taipeitimes.com/News/taiwan/archives/2009/06/11/2003445902>

8. Joint Effort Made to Form Biotech Industry Cluster in STSP

(Taiwan Economic News, 11 06 2009)

The Southern Taiwan Science Park (STSP) Administration recently claimed that it is cooperating with the Metal Industries Research & Development Centre (MIRDC) to develop the science park into a key cluster for biotechnology and medical equipment.

Chen Jun-wei, STSP Administration director general, pointed out that the science park has been soliciting more biotechnology firms in addition to companies in opto-electronics and semiconductors. So far, he added, there are already 38 biotech firms with total revenue of about NT\$3.7 bio., outpacing that generated by the Hsinchu Science Park and Central Taiwan Science Park (CTSP).

Full article:

http://cens.com/cens/html/en/news/news_inner_27992.html

9. Typhoons may cushion quake damage: scientists

(Taipei Times, 12 06 2009)

Surprised scientists say that typhoons that hit Taiwan unleash long, slow earthquakes, a phenomenon that may save it from more devastating temblors.

Seismologists installed movement sensors in boreholes at depths of 200 to 270 meters in eastern Taiwan, monitoring a spot where two plates, the Philippine Sea Plate and the Eurasian plate, bump and jostle in an oblique, dipping fault.



Over five years, researchers saw a remarkable correlation between tropical storms and "slow" earthquakes, a seismic beast first identified three decades ago.

Slow quakes entail a slippage in the fault that unfolds progressively over hours or days, rather than a sudden, violent release of the kind that destroys buildings and lives.

The sensors noted 20 such slow earthquakes, 11 of which coincided with typhoons, during the study period.

Full article:

<http://www.taipeitimes.com/News/taiwan/archives/2009/06/12/2003445973>

Related article:

<http://www.taiwanheadlines.gov.tw/ct.asp?xItem=158955&CtNode=9>

10. Research confirms star birth, magnetic fields link

(Taipei Times, 13 06 2009)

An international team of astronomers has confirmed that interstellar magnetic fields are a crucial factor in the formation of massive stars. The research was published in the weekly journal Science.

Ramprasad Rao, a US scientist conducting research at the newly established Institute of Astronomy and Astrophysics (ASIAA) at Academia Sinica, joined a group of scientists from Spain, Italy and the US to monitor a hot molecular cloud named G31.41+0.31, the home of very young massive stars. This was done through the use of a Submillimeter Array (SMA) in Hawaii.

According to Academia Sinica, while massive stars comprise only 1 percent of the stellar population of the galaxy, they dominate the appearance and evolution of the interstellar medium composed of gas and dust grains. But how these massive stars were formed remained a mystery.

Molecular cloud G31.41+0.31 is located 23,000 light years from Earth in the Serpens constellation. Scientists found that the dust grains in this particular cloud are partially aligned with magnetic field lines.

Full article:

<http://www.taipeitimes.com/News/taiwan/archives/2009/06/13/2003446051>

11. Researchers tout vaccine breakthrough

(Taipei Times, 17 06 2009)

Academia Sinica touted a breakthrough in cancer and universal flu molecular vaccine development. Speaking at the 12th Society of Chinese Bioscientists in America (SCBA) International Symposium, Academia Sinica President Wong Chi-huey, who is also the research project's leader, said that traditional vaccines are manufactured by inactivating whole viruses and injecting them into human bodies.

"Molecular vaccines, on the other hand, are made with only the most important or abundant molecules of the virus," he said. This is because when a virus enters the body, the body's immune system is mainly triggered by the most important or abundant molecules, while the rest of the virus does not really cause a reaction, assistant researcher Ma Che said.

Full article:

<http://www.taipeitimes.com/News/taiwan/archives/2009/06/17/2003446369>

http://www.etaiwannews.com/etn/news_content.php?id=978521&lang=eng_news&cate_img=logo_taiwan&cate_rs=TAIWAN_eng

12. STAG, IDB Evaluate Working With U.S. to Build Li-ion Battery Ind.

(Taiwan Economic News, 17 06 2009)

To further build the lithium-ion battery industry in Taiwan, the Science and Technology Advisory Group (STAG) of the Taiwan Cabinet and Industrial Development Bureau (IDB) under the Ministry of Economic Affairs are trying to set up ties with the United States.

Industry sources said that the newly elected U.S. President Barack Obama has been aggressively promoting the development of electric vehicles in his country, and many American high-tech companies have been poaching professionals from Taiwan, leading to a manpower shortage in the local electric vehicle and battery sectors.



To effectively develop its energy industry, the U.S. government has decided to pour US\$2.4 billion to build the nation into a major lithium-ion battery production nation. The big project has interested many big international companies, including lithium-ion battery maker A123Systems.

Some local lithium-ion battery manufacturers told STAG that American companies have begun poaching professionals from the local battery industry and such moves might compromise the future development of the line on the island.

The STAG and IDB, as a result, held the first meeting to discuss the possibility to work with the American battery industry rather than compete with it.

Full article:

http://cens.com/cens/html/en/news/news_inner_28067.html

13. Hepatitis C patients tend to develop liver cancer: Taiwan researcher

(Taiwan News, 18 06 2009)

People infected with hepatitis C have an approximately five times greater risk of developing liver cancer than those with hepatitis B, and have a 10 times risk of liver cancer if they also drink alcohol, said Michael Ming-Chiao Lai, an Academia Sinica academician specializing in life sciences.

He made the remarks in a keynote speech at the 12th Society of Chinese Bioscientists in America International Symposium held by Academia Sinica.

Lai, who is also president of National Cheng Kung University, said there are five types of hepatitis viruses -- A, B, C, D and E. The hepatitis viruses A and E can cause acute hepatitis, while the hepatitis B, C, and D viruses can cause chronic hepatitis.

Before a hepatitis B vaccine was developed, up to 90 percent of liver cancer was caused by hepatitis B. At present, as no vaccine is yet available against hepatitis C, half of the liver cancer cases in southern Taiwan are associated with hepatitis C, according to Lai.

Full article:

http://www.etaiwannews.com/etn/news_content.php?id=979580&lang=eng_news&cate_img=49.jpg&cate_rss=news_Society_TAIWAN

14. President officiates at inauguration of major vaccine plant

(Central News Agency, 18 06 2009)

President Ma Ying-jeou officiated at the inauguration of a new vaccine facility in central Taiwan run by Adimmune Corp. that is capable of producing vaccines against the influenza A(H1N1) strain.

Addressing the inauguration, Ma said Taiwan is one of just 11 countries in the world capable of producing vaccine for swine flu and he added that it is important that Taiwan, as a member of the international community, can and will share the vaccine with other countries that need it in the face of the swine flu pandemic.

Immediately after its inauguration, Adimmune's new plant in Tantz, Taichung County will ramp up its production to meet an order placed by the Cabinet-level Department of Health (DOH) for 5 million doses of influenza A(H1N1) vaccine, Ma said.

Full article:

<http://english.cna.com.tw/ReadNews/Detail.aspx?pSearchDate=&pNewsID=200906180025&pType1=HH&pType0=xJDLNHH&pTypeSel=0>

15. Taiwan's first HCPV solar power system inaugurated

(Central News Agency, 20 06 2009)

A ceremony was held in southern Taiwan to inaugurate the country's first commercial-grade high concentration photovoltaic (HCPV) solar power system, which will have a total installed capacity of one megawatt once the construction project is completed.

The inauguration marked the first-stage operation of the system, located in the Liuying Environment Science and Technology Park in Tainan County. At present, it can generate 100 kilowatts of clean electricity per hour.



Eric Tsai, general manager of the Taipei-based Advanced Renewable Energy Inc. (AREi), which is cooperating with the Tainan county government in developing solar energy, said at the ceremony that 14 HCPV devices have been installed to achieve an annual output of 190,000 kWh per year.

Full article:

<http://english.cna.com.tw/ReadNews/Detail.aspx?pSearchDate=&pNewsID=200906200014&pType1=JD&pType0=xJDLNHH&pTypeSel=0>
http://cens.com/cens/html/en/news/news_inner_28113.html

16. ITRI and NDT to Jointly Explore Market for RFID Tag Readers

(Taiwan Economic News, 22 06 2009)

Industrial Technology Research Institute (ITRI) of Taiwan has signed a contract with Newport Digital Technologies Inc. (NDT) of the U.S. to supply the latter 10,000 customized mini-sized, ultrahigh-frequency RFID (radio-frequency identification) tag readers, paving the way for Taiwanese makers to enter the global market for RFID applications. Jonhsee Lee, president of ITRI, indicated that ITRI's independently developed miniature RFID tag reader is only 4cm wide and 5.5cm long, only half that of any competing models and already certified by EPC (Electronic Product Code) Global as the smallest ultrahigh-frequency model in the world. The reader can be easily embedded in portable devices, such as PDAs and Mobile Kiosks, perfect for logistics companies, manufacturers with warehouses and large-sized wholesalers.

Full article:

http://cens.com/cens/html/en/news/news_inner_28099.html

17. Scientists unveil vaccination patch

(Taipei Times, 25 06 2009)

Those who tremble at the sight of a needle may one day be able to receive immunizations via a DNA vaccine patch. Funded by the National Science Council (NSC), the patches have been jointly developed by scientists from National Taiwan Ocean University, National Taiwan University of Science and Technology and Academic Sinica's Genomics Research Center. Research results on the patches were published in the May 4 issue of the Journal of Controlled Release.

Explaining how the DNA vaccine works, National Taiwan Ocean University associate professor Wu Chang-er said that the stratum corneum, the outermost layer of the epidermis, helps block the entry of substances coming from the outside. The patch first removes the stratum corneum with hydroxy acids so that the DNA vaccine can enter the body through the skin. The vaccine is also wrapped with liposomes, which stop the vaccine from being catalyzed and help join the vaccine and the cells so the antigen for a disease can be produced.

The research team is trying to develop a DNA vaccine patch for Japanese encephalitis for mass production. It is planning to develop DNA vaccine patches for other epidemic diseases, such as SARS and avian flu.

Full article:

<http://www.taipetimes.com/News/taiwan/archives/2009/06/25/2003447067>
http://english.cna.com.tw/ReadNews/Eng_TopNews.aspx?ID=200906240018

18. Early phase clinical trial center opens in southern Taiwan

(Central News Agency, 25 06 2009)

A center was opened at National Cheng Kung University Hospital (NCKUH) in southern Taiwan for early phase clinical trial of new drugs, mainly for cancer. NCKUH said that it set up a clinical trial center as early as 1990, but with Taiwan's advancement in new drug development and the willingness of foreign pharmaceuticals to commission clinical trials in Taiwan, the hospital decided to set up a separate early-phase clinical trial center. The hospital said it has been commissioned by local and foreign pharmaceutical companies to conduct clinical trials for 40 cancer drugs.

Full article:

<http://english.cna.com.tw/ReadNews/Detail.aspx?pSearchDate=&pNewsID=200906250012&pType1=HH&pType0=xJDLNHH&pTypeSel=0>