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Introduction – ITRI (www.itri.org.tw)

Since its establishment in 1973 by the Ministry of Economic Affairs, the Industrial Technology Research Institute (ITRI) in Hsinchu has developed into one of Taiwan's most important key players in the field of applied science research.

The campus houses **6 core laboratories** (*biomedical engineering; electronics and optoelectronics; energy and environment; information and communications; material and chemical; mechanical and systems*), **5 focus centers** (*display; medical electronics and device; photovoltaics; identification and security; SOC technologies*) and **5 linkage centers** (*center for measurement standards; creativity lab; industrial economics and knowledge center; nano technology research center; technology center for service industries*), conducting applied research and development. The scope of ITRI's research covers industries such as: information and communications technologies; advanced manufacturing and systems; biomedical technology; nanotechnology; material and chemicals; and energy and environment. Within these industries, ITRI centre on three goals: to expedite the development of new industrial technology; to aid in the process of upgrading industrial technology techniques; to establish future industrial technology.

ITRI's main claim to fame comes from its two most famous spin-off companies, Taiwan Semiconductor Manufacturing Company (TSMC) and United Microcontrollers (UMC), the world's largest semiconductor contract manufacturers. The management at ITRI is committed to creating a breeding-ground for future success stories similar to TSMC and UMC.

The institute has grown to a 6'000 people operation and maintains overseas offices in USA, Japan, Russia and Germany.

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1. Identical twin study shows genes don't decide everything

(Liberty Times, 22. 01. 2009)

Assistant Professor Wang Sun-chong of National Central University has been researching the methylation mechanism in human beings, observing identical twins with totally identical DNA sequences. With identical characteristics from birth, the two twins are influenced by different environmental factors, leading to people with the same birth but different lives. His findings will help revise traditional thinking about the determining nature of genetics, proving that postnatal factors can obtain the same results as good genetics, and also become a resource to the next generation through inheritance.

Full article:

<http://www.taiwanheadlines.gov.tw/ct.asp?xItem=147355&CtNode=9>

2. Silicate performs strongly at bone regeneration

(Chemical Technology News, 26. 01. 2009)

Biomaterials scientists in Taiwan have developed a quick-setting cement that could help broken bones to regenerate. By using silicate rather than phosphate, a team led by Shinn-Jyh Ding at Chung-Shan Medical University, Taichung, has developed a quick-setting cement with promising biological properties.

Full article:

http://www.rsc.org/Publishing/ChemTech/Volume/2009/03/silicate_cement.asp

3. Taiwan, China universities to jointly develop biomedical technology

(Central News Agency, 05. 02. 2009)

National Chiao Tung University (NCTU) in Taiwan's Hsinchu City and Shanghai Jiao Tong University in China have signed an agreement to jointly develop biomedical engineering technology. Under the agreement, NCTU will provide electronic engineering expertise and send Taiwan's medical professionals to conduct clinical trials in Shanghai Jiao Tong University to advance biomedical research.

Full article:

<http://www.cna.com.tw/CNAeng/RealTimeNews/NewsDetail.aspx?strNewsDate=&strNewsID=200902050033&strType=JD>

4. Genetic testing on the increase in Taiwan

(The China Post, 09. 02. 2009)

In Taiwan, genetic tests have been on the upswing, particularly in the past couple of years due to stricter regulations that often require DNA analysis reports for purposes such as household registration of minors, notes Dr. Yi-Ning Su, director of the National Taiwan University Hospital's Cytogenetics and Molecular Genetics Laboratory. Out of the 700 to 900 sets of couples or families that undergo genetic testing every year at the hospital, about one or two per month are surprised by paternity test results, according to the geneticist.

Full article:

<http://www.chinapost.com.tw/taiwan/national/national-news/2009/02/09/195221/Genetic-testing.htm>

5. AEC promotes its easy-to-use radiation detector

(Taipei Times, 10. 02. 2009)

The Atomic Energy Council (AEC) announced the development of a compact device that would make it easier to detect radiation using 3G cellphones as a positioning device. INER has been working for the past three years with the AEC's Radiation Monitoring Station and National Tsing Hua University to design a device that local governments or communities can use to check the safety of their environments. The FNS-99 is the first comprehensive radiation detection device that is aided by cellphones."



Full article:

<http://www.taipeitimes.com/News/taiwan/archives/2009/02/10/2003435720>

6. Chink discovered in staph's armor

(Taipei Times, 10. 02. 2009)

Bacteria get harder to treat as they build resistance to antibiotics, but while some scientists have tried to combat this by developing stronger antibiotics, a group of scientists—including U.S. experts and Academia Sinica Vice President Andrew Wang and two other Academia Sinica researchers—have taken a different approach by attempting to weaken bacteria's defenses. The team touted its preliminary success when it published a paper in Science last year about an experimental cholesterol-lowering drug can also weaken the defense system of Staphylococcus aureus (staph) in mice. Staph is the second-most common cause of infection in Taiwan, next to Escherichia coli bacteria (E. coli).

The paper was recently named by the U.S. National Institute of Health (NIH) as one of 24 research highlights of last year, Academia Sinica said.

Full article:

<http://www.taipeitimes.com/News/taiwan/archives/2009/02/10/2003435719>

7. Archiving program offers public countless insights

(Taiwan News, 12. 02. 2009)

The Taiwan e-Learning and Digital Archives Program (TELDAP), a government sponsored program that archives Taiwan's cultural and natural assets digitally, is an integrated program of National Digital Archives Program (NDAP) and Program for e-Learning (ELNP), which aims to showcase Taiwan's cultural, biological and social diversity. "TELDAP has archived 2.18 mio. of items digitally, with a total number of 3.7 mio. pieces of data. As for e-learning, thousands of digital courses have been built. Everyone can make use of the resource through the union catalog online. In several top Science Citation Index periodicals, Taiwan ranks no. 3 in both accounts of the number of studies and the number of studies being referenced by other research."

Full article:

http://www.taiwannews.com.tw/etn/news_content.php?id=863160&lang=eng_news&cate_img=49.jpg&cate_rss=news_Society_TAIWAN

8. Novartis to Locate Asian Vaccine R&D Center in Taiwan

(Central News Agency, 12. 02. 2009)

After evaluations, Novartis' headquarter selected Taiwan as its Asian vaccine development center in the second half of 2008.

Full article:

http://cens.com/cens/html/en/news/news_inner_26291.html

9. High school student finds bacteria that could decompose styrofoam

(Central News Agency, 13. 02. 2009)

A Taiwanese high school girl has found a bacteria in yellow mealworm beetles that breaks down expanded polystyrene (EPS) foam, a material many believed could not be decomposed by any living organism.

Tseng Yi-ching, a student of National Taichung Girl's Senior High School in Taichung City received an award at a ceremony held at the National Taiwan Science Education Center for her research on the bacteria separated from the digestive fluids in the body of live mealworms that can decompose EPS foam, more commonly known as styrofoam.

Full article:

<http://www.cna.com.tw/CNAeng/RealTimeNews/NewsDetail.aspx?strType=ST>



10. Nanogold bio-sensor may allow people to detect cancer through at-home test

(Taipei Times, 17. 02. 2009)

People may soon be able to detect cancer at home using a simple kit that employs a gold nano-particle bio-sensing method, National Chia Tung University researchers said.

"Gold nano-particles [nanogold] are a substance that has been made since ancient times," said Lin Chih-sheng, a professor at the university's Institute of Molecular Medicine and Bioengineering. "Suspended in buffer fluids, the minuscule particles of gold appear bright red," Lin said, adding that nanogold could be used as a bio-sensor because it creates a solution when the particles are laden with other substances that changes color upon reaction with certain target bio-substances.

Full article:

<http://www.taipeitimes.com/News/taiwan/archives/2009/02/17/2003436326>

11. SHL Launches "Next Generation" Precision Pen Injector

(Central News Agency, 17. 02. 2009)

Scandinavian Health Ltd. (SHL) Group launched a new Precision Pen Injector (PPI), which uses a distinctive "power spring" to deliver small but highly accurate doses of Restylane Vital Light, a treatment for rejuvenating delicate skin areas such as hands, neck, décolletage and face.

SHL claimed that the compact and easy-to-use device could replace conventional syringes whose accuracy is hard to control. The new PPI will enable users to quickly and precisely deliver 200 doses of 10µl agent with an accuracy far exceeding the requirements of pen-injector standards.

Full article:

http://www.cens.com/cens/html/en/news/news_inner_26336.html

12. University opens marine life research center in Tainan

(Central News Agency, 18. 02. 2009)

National Cheng Kung University in Tainan established a Marine Life, Whale and Dolphin Research Center on its campus in Annan District. The center will focus on research on marine life in the waters around southern Taiwan -- unlike Academia Sinica, National Taiwan University and National Taiwan Ocean University, whose research programs are centered on marine life in waters around northern Taiwan.

Full article:

<http://www.cna.com.tw/CNAeng/RealTimeNews/NewsDetail.aspx?strType=ST>

13. Russian institute joins Taiwan hydrologic research

(Central News Agency, 19. 02. 2009)

Seven researchers from the prestigious Russian Academy of Sciences have joined a hydrologic research project sponsored by National Cheng Kung University (NCKU) in Tainan City. The research project covering surveying, analysis and management of undersea water in areas surrounding Taiwan would be jointly conducted by NCKU's Tainan Hydraulics Laboratory and the P.P. Shirshov Institute of Oceanology under the Russian Academy of Sciences over a span of three years. The scientific study of the properties, distribution, effects, and management of undersea water in the Taiwan area was expected to help the country better manage its undersea water resources and contribute to the development of methodology of research on oceanographic physics.

Full article:

<http://www.cna.com.tw/CNAeng/RealTimeNews/NewsDetail.aspx?strType=ST>



14. Boston-Power to Set Up R&D Center in Taiwan

(Taiwan Economic News, 20. 02. 2009)

In light of Taiwan's dominance in the global market for notebook PCs, U.S.-based Boston-Power Inc., a globally well-known supplier of lithium rechargeable batteries, is going to set up an R&D center on the island, and plans to ally with local notebook PC manufacturers to compete against Japanese and Korean battery makers, according to industry sources.

Full article:

http://cens.com/cens/html/en/news/news_inner_26381.html

15. New use found for diabetes medicine

(Taipei Times, 21. 02. 2009)

The National Health Research Institute (NHRI) discovered a new use for a diabetes drug that will significantly decrease the rate of cell death during hemorrhagic stroke.

Researchers at the NHRI discovered that insulin sensitizers, which are used to treat diabetes, can also decrease the amount of brain tissue that is destroyed during hemorrhagic stroke by up to 50 percent. The research has been published in this month's edition of the medical journal *Circulation*. Researchers discovered that the increase of protein 14-3-3E that is related to nuclear receptor PPAR can decrease apoptosis, which is an important mechanism for protecting cells during a stroke. Findings suggest that when PPAR is stimulated, it will speed up the production of the 14-3-3E protein. This will help protect cells and decrease instances of apoptosis (cell death). The research institute plans to cooperate with medical institutions to enter into the next phase of clinical trial.

Full article:

<http://www.taipeitimes.com/News/taiwan/archives/2009/02/21/2003436655>

16. Domestic silkworm industry boosts Taiwan's biotechnology fields

(Liberty Times, 23. 02. 2009)

Some of the technology used in developing vaccines and other biotechnology products in Taiwan is leading the world, thanks to molecular farming derived from domestic silkworm farming that was the brainchild of the Miaoli District Agricultural Research and Extension Station of the Council of Agriculture and other related agencies. A number of foreign companies have already expressed a keen interest in the work being carried out here.

The agricultural research and extension station currently has 136 types of silkworms in its repository. The efforts of researchers at the station are starting to pay off after years of work, though the Taiwanese silkworm industry had fallen by the wayside for many years. The Miaoli District Agricultural Research and Extension Station, Academia Sinica, Chung Yuan Christian University, National Formosa University and other related institutions have cooperated in an effort to forge the domestic silkworm industry into living factories. Researchers have already successfully developed porcine lacto ferrin, antibacterial proteins, swine fever virus vaccine, and a number of other biotech products.

Full article:

<http://www.taiwanheadlines.gov.tw/ct.asp?xItem=149643&CtNode=9>

17. ICP11 mimic protein might be anti-cancer drug: Taiwan scientists

(Central News Agency, 26. 02. 2009)

A DNA mimic protein discovered by Taiwan scientists in their research into a disease in crustaceans a year ago holds the potential for the development of a cancer treatment, leaders of the research team said.

Lo Chu-fang, dean of the College of Life Science of National Taiwan University, and Andrew H.-J. Wang, research fellow and vice president of Academia Sinica, told that their nine-member team discovered ICP11 -- the most highly expressed nonstructural gene of the white spot syndrome virus -- when they tried to find the cause of a disease that was affecting crustaceans worldwide.

Full article:

<http://www.taiwanheadlines.gov.tw/ct.asp?xItem=149907&CtNode=9>