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# ITRI

# TODAY



## Breakthrough for Flexible Display Production

### ITRI's FlexUPD Wins Top Prize at the WSJ's Technology Innovation Awards

ITRI's FlexUPD, the first technology to enable mass commercialization of paper-thin, low-cost flexible displays for electronic products, received the Overall Gold Award from the Wall Street Journal's 2010 Technology Innovation Awards. FlexUPD (Flexible Universal Panel for Displays) represents a major breakthrough and will increase the competitiveness of Taiwan's flexible display manufacturers enormously. ITRI also received a runner-up award in the Semiconductors category for its MDPS (Micro-Deformable Piezoresistive Sensor) thin and flexible sensor technology.

Besides winning the overall top prize, FlexUPD topped the Consumer Electronics category. This is the second consecutive year ITRI has won in this category, after having received an award for fleXpeaker. "To be recognized by an organization as prestigious as the Wall Street Journal is a tremendous honor," said Dr. Chen Janglin, General Director of ITRI's Display Technology Center. "I am very proud of our team for developing this innovative breakthrough technology and am pleased they earned such high recognition."

Dr. Chen remarked that the key to FlexUPD is its ultra-thin and transparent soft plastic substrate. Once the transistors are layered onto the plastic substrate and enclosed, it can be cut from the glass stage to make an ultra-thin and rollable display which is only 0.01 cm thick. The secret of its success is the instantaneous removal through the use of a non-stick de-bonding layer material specially developed by ITRI. It allows smooth removal of the plastic substrate from the glass stage.

#### Inside this issue

##### ■ FEATURE

- 1 Breakthrough for Flexible Display Production  
ITRI's FlexUPD Wins Top Prize in WSJ's  
Technology Innovation Awards

##### ■ SPOTLIGHT

- 3 2010 ITRI-SPRIE Forum  
Growing Smart Green Cities

##### ■ INTERNATIONAL AFFAIRS

- 4 Pavilion of Dreams at the Taipei Int'l Flora Expo  
An Interchange of Technology and Flowers

##### ■ R&D FOCUS

- 8 ITRI's Bicycle Fleet Management System  
Mobile Technology for Outdoor Group  
Safety and Fun
- 10 Combined Fuel Cell System  
Encourage People to Save Energy
- 12 Embedded Visual Servo Technology  
Makes Smarter Robots
- 13 Racing Against Time  
ITRI's RPC Strives to Make the Emerging  
Medical Device Industry Shine

##### ■ COLLABORATIONS

- 14 ITRIScore Lets Patients Avoid Aspiration

##### ■ CONFERENCES

- 15 2010 Mediphar Taipei  
ITRI Presents New Medicare Products

## FEATURE



FlexUPD's flexibility allows for two-sided surface visibility for display or non-display products.

Source:ITRI

FlexUPD is a simple and inexpensive technology that enables mass production of extremely thin, flexible flat panel displays. The displays will offer two-sided surface visibility for light, bendable and unbreakable products such as rollable mobile phone screens, e-books, e-maps, body-worn or body-wrapped medical sensors, and more.

Most importantly, panel and display manufacturers can easily adopt this technology, which is compatible with mainstream LCD production lines. Manufacturers only need to add the de-bonding equipment to incorporate FlexUPD, hence they can start producing flexible displays without having to make any huge investments in new facilities and equipment. FlexUPD is now available for transfer to companies worldwide.

ITRI's MDPS Technology was named a Runner-up in the Semiconductors category. The technology includes 180 sensing points distributed in an area of approximately 2 meters in length, which can detect the position and force of a touch and quickly provide a sensing index. Large pressure sensing products that are lightweight, thin, flexible, durable, and low power consuming can be easily produced by a process similar to the screen printing technology used for printing newspapers.

The MDPS technology can be used for producing pressure sensors of different shapes and sizes, and the sensors can be applied to uneven surfaces or even be completely attached to objects. The sensors have a simple structure, a very small sensing error of <math><2.5\%</math> (better than the 3~7% error of other, competing sensors), and offer continuous processing. ITRI has transferred the technology to Universal Cement Corporation for production, and is jointly developing innovative applications with several domestic manufacturers. ITRI expects the MDPS will be integrated with applications including mobile phone pressure controls, healthcare beds, warning devices, sensing floor mats, car mats, game operating interfaces, electronic musical instruments, and more, to build a living environment with "touch-control everywhere." [i](#)



MDPS technology uses a printing fabrication process so it can be easily customized for various consumer appliances, educational tools, and industrial instrumentation.

Source:ITRI

### WSJ Technology Innovation Awards

In its 10th year, the Wall Street Journal 2010 Technology Innovation Awards received nearly 600 entries spanning 17 categories, 275 of which were sent to a team of judges from research institutions, venture-capital firms, industry and academia. Judges evaluate the technology's application, commercialization and market potential

in addition to its innovative characteristics. This year's winners were pre-announced on September 26 and honored at a ceremony on November 3 in San Francisco. The event was held in conjunction with the Dow Jones VentureWire FASTech conference and featured a keynote address by Judy Estrin, CEO of Jlabs. [i](#)