THE WALL STREET JOURNAL

2009 TECHNOLOGY INNOVATION AWARDS

2009 TECHNOLOGY INNOVATION WINNERS

GOLD

Abbott Laboratories/Ibis Biosciences, U.S.
The Ibis T5000 sensor, which can quickly detect and identify the pathogens in a sample. The device helped identify the first two cases of the H1N1 swine flu in the U.S.

SILVER

Touch Bionics, U.K.
The i-Limb artificial hand, which features bendable fingers and a rotating thumb. The hand can grip objects in ways that traditional prosthetic hands can't.

BRONZE

VNL, India
A solar-powered base station for mobile-communications networks, which can be used to bring cellphone service to remote villages.

COMPUTING SYSTEMS

Organic Motion, U.S.
A relatively simple, inexpensive motion-capture system that can be used in creating digital animation for games or virtual-reality environments, or for motion analysis in sports or medicine.

CONSUMER ELECTRONICS

Industrial Technology Research Institute, Taiwan
The fleXpeaker, a paper-thin flexible speaker. Arrays of tiny speakers can be combined to produce high-fidelity speaker systems of almost any size.

RUNNERS-UP

Hewlett-Packard, U.S.
Affordable, flexible electronic displays. The paper-like computer displays are made almost entirely of plastic and consume less power than today's computer displays.

Livescribe, U.S.
The Livescribe Pulse smartpen, which links audio to handwritten notes. Users can tap a smartpen on any part of their written notes and hear what was said whey they made the notes.

Motorola, U.S.
Technology that measures the forcefulness of human touch on touch screens. The technology allows multi-finger typing on screens and helps achieve greater accuracy.

ENERGY

SFC Smart Fuel Cell, Germany
Lightweight fuel cells that can be used by soldiers instead of heavier batteries to power battlefield equipment.

RUNNERS-UP

ElectraTherm, U.S.
The Green Machine, an electricity-generation system that captures wasted heat and turns it into emission-free electricity.

National Semiconductor, U.S.
SolarMagic power optimizers, which attach to solar panels to generate more power when panels are in the shade.

Echelon, U.S.
Technology to control streetlighting networks, making them more energy-efficient.

Qualcomm, U.S.
eZone, a universal charging platform that can charge multiple devices simultaneously and wirelessly. It eliminates the need for connectors and battery chargers for each device.

ENVIRONMENT

Serious Materials, U.S.
The EcoRock drywall substitute, which is made with recycled material and requires less energy to produce than the standard gypsum-based drywall.

RUNNER-UP

Picarro, U.S.
A portable device that measures greenhouse-gas emissions. The device can measure carbon dioxide, methane and water vapor.

HEALTH-CARE IT

DataDyne.org and its co-founder, Joel Selanikio, U.S.
The EpiSurveyor, free software for mobile devices designed to help health officials in developing countries collect health information.

MATERIALS AND OTHER BASE TECHNOLOGIES

QD Vision, U.S.
Devised a way to dramatically improve the color quality of LED lights by using quantum dots—tiny semiconducting nanocrystals.

RUNNER-UP

Novelx, U.S.
A scanning electron microscope for imaging nanoscale objects and materials. The company uses silicon-processing technologies to miniaturize the core technology inside the microscope.

MEDICAL DEVICES

Touch Bionics, U.K.
The i-Limb artificial hand, which features bendable fingers and a rotating thumb. The hand can grip objects in ways that traditional prosthetic hands can't.

RUNNERS-UP

Ventus Medical, U.S.
Provent sleep apnea therapy, which involves the use of a small device placed inside the nostrils. The device helps maintain an open airway during sleep.

ClearCount Medical Solutions, U.S.
A system for detecting and counting surgical sponges using RFID technology, providing clinicians with an automated way to reconcile sponge counts.

BioElectronics, U.S.
A wearable patch that uses electromagnetic energy to deliver drug-free pain relief for a variety of conditions.

MEDICINE-BIOTECH

Abbott Laboratories/Ibis Biosciences, U.S.
The Ibis T5000 sensor, which can quickly detect and identify the pathogens in a sample. The device helped identify the first two cases of the H1N1 swine flu in the U.S.

RUNNERS-UP

GTC Biotherapeutics, U.S.
Production of pharmaceutical proteins using transgenic animals (goats). The process enables cheaper—and greener—manufacturing of proteins.

Luminex, U.S./Canada
A diagnostic test designed to quickly and accurately detect and identify multiple respiratory viruses.

SECURITY-PRIVACY

Ksplice, U.S.
Software that makes it possible to install security patches and other software updates without rebooting computer systems.

SEMICONDUCTORS

Qualcomm, U.S.
Mirasol mobile-device display, a low-power, full-color alternative to traditional displays.

RUNNERS-UP

Verayo, U.S.
An "unclonable" silicon chip that can be used in anti-counterfeiting and for secure identification and access.

Hewlett-Packard, U.S.
The memory resistor, or "memristor," a new element of electronic circuitry that had previously existed only in theory. H-P believes the memristor could replace transistors and allow for the creation of smaller and better-performing electronic devices.

Caustic Graphics, U.S.
Technology that speeds up ray tracing, a technique that generates extremely accurate three-dimensional images. The technology has the potential of delivering much higher quality graphics at substantially lower cost and could bring film-like realism to computer games and change the way movie makers work.

Numonyx, Switzerland
Alverstone, the first commercially available computer-memory product that uses a technology called phase change memory. PCM exploits the behavior of certain materials to change their structure with the application of heat.

Luminus Devices, U.S.
Large-format LEDs, which offer higher efficiencies since fewer LEDs are needed to emit light over a large area.

Intel, U.S.
The Atom processor, which has helped launch new categories of devices, including netbooks and mobile Internet devices.

SOFTWARE

VMware, U.S.
VMware vSphere 4, which promises to make it easier to turn a company's existing data centers into a "private cloud" that's secure, reliable and easy to manage.

RUNNER-UP

Mersive Technologies, U.S.
Software that uses a camera to automatically align multiple projectors into a single, seamless display. Displays that currently cost millions of dollars can now be constructed with commodity components and software at a fraction of the price.

WIRELESS

VNL, India
A solar-powered base station for mobile-communications networks, which can be used to bring cellphone service to remote villages.

RUNNERS-UP

Transclick, U.S.
Real-time language translation of SMS, email and instant messaging in 16 languages to and from English on mobile phones and online.

Row 44, U.S.
An in-flight broadband system that uses satellites to provide Wi-Fi service anywhere in the world, including over oceans.

NASA, U.S.
A system to provide wireless telemetry from miniature embedded sensors requiring no batteries. NASA foresees uses in such areas as astronauts' space suits, health monitoring and bridge maintenance.