

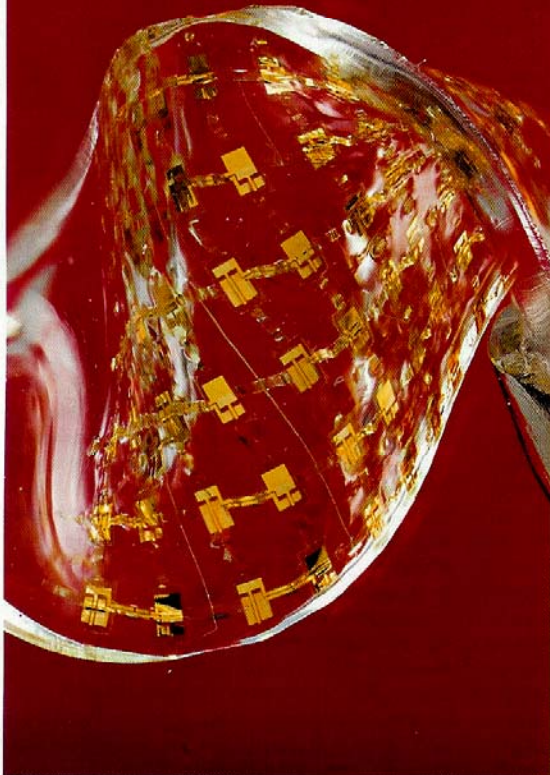
TECHNOLOGY BEAT

TWISTED TRANSISTOR

Defying the term *hardware*, electrical engineers and materials scientists have developed electronic circuits that can bend, extend, and even twist into a spiral. Their design features small electronic elements embedded in silicone rubber and connected by bridges that change shape to accommodate strain when the surrounding material stretches. "Strain is what kills electronics," says Yonggang Huang, a Northwestern University engineer with the team that developed the circuits.

Most existing electronics, such as the circuit boards in everything from mobile devices to solar cells, are built on brittle silicon wafers. These must be protected by solid casings, limiting the surfaces and environments where devices can be placed. With the new elasticity, electronics could be attached to curved surfaces that warp and undulate, such as the human body. And since the circuits are surrounded by biofriendly silicone, they could also be used in implantable heart and brain monitors, says code-developer John Rogers, a materials scientist at the University of Illinois at Urbana-Champaign. "We can now wrap silicon-based technology around all kinds of objects," Rogers says. Other possibilities include a flexible heart monitor that conforms to an athlete's moving body and wearable solar cells.

Adam T. Hadhazy



The Good News

■ Oxford University psychiatrists have found that playing the computer game *Tetris* shortly after a traumatic event interferes with the brain's ability to form visuospatial memories of the trauma and **reduces unpleasant flashbacks**.

■ Chemical engineers have built the **world's smallest integrated fuel cell**—just 9 millimeters square and a single millimeter thick—boosting prospects for hydrogen-powered personal gadgets.

■ A survey of 20 studies finds that responsible, conscientious people **live two to four years longer** than average. Better yet, researchers say we can develop these life-extending traits over time.

The Bad News

■ Inorganic phosphates, which are common in processed foods, promote the **growth of lung cancer tumors** in mice, according to a study by a team at Seoul National University in Korea.

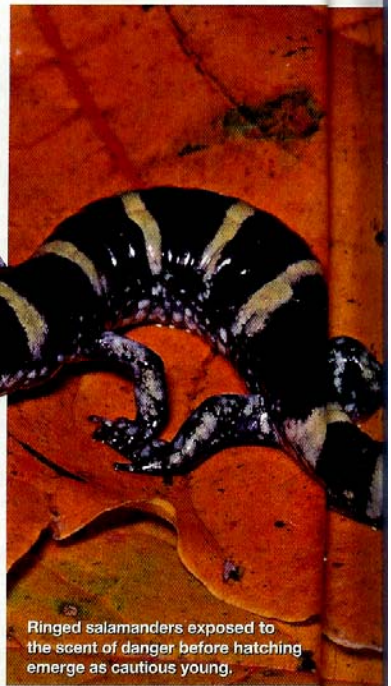
■ The journal *Harmful Algae* blames nutrient pollution, largely from agricultural sources such as fertilizer and livestock, for an uptick in **toxic algal blooms** worldwide. Such blooms now happen more often, grow larger, and last longer.

■ The **Ebola virus** has reemerged in the Democratic Republic of the Congo, according to the World Health Organization. As of early January, there were at least 36 suspected cases and 12 deaths in the outbreak.

ANIMAL EGGHEADS

Kindergarten starts early for many animals. In November researchers reported that frogs and salamanders can learn to be wary of enemies even before they are born. "Learning from the safety of an egg is a huge survival advantage," says biologist Doug Chivers of the University of Saskatchewan in Canada, who led the study.

Salamanders hatched from eggs that have been doused with predator-scented water showed reduced activity—a common defense mechanism—compared with those from eggs in odorless water. Chivers and his team also taught frog embryos to fear the fire-bellied newt, a potential predator, by exposing frog eggs to the newt's scent combined with



Ringed salamanders exposed to the scent of danger before hatching emerge as cautious young.

FROM LEFT: C. CORNWALL/IMAGING TECHNOLOGY GROUP AT TECHMAN INSTITUTE, UNIVERSITY OF ILLINOIS; ALAN BLAKE/IREX/CONTOUR ARTISTS/REUTERS