



Archives

Weather

Time

Business

IT

National

Politics

International

Sports

Editorial

Op-ed

Life

Entertainment

Cartoon

Link

About

Donga.com

Scientist Creates Flexible Electronics

LISTEN



JANUARY 16, 2006 03:00

korean text

A Korean scientist in the United States has successfully created a stretchable electronic device. Electronic devices have always been hard and breakable in the past.

Dr. Khang Dahl-young (38), a post-doctorate researcher in the University of Illinois Urbana-Champaign's material engineering department said yesterday, "We have succeeded in developing electronic material utilizing thin, single-crystal silicon that can be made into stretchable transistors, solar battery devices, and other electronics."

It is expected that the flexible electronics device may be applied in a variety of uses, ranging from biological tissues to integrated robot sensors.

The research, aided by the American Defense Advanced Research Projects Agency and the US Department of Energy, was published in the January 13 edition of the scientific journal Science.

Though flexible displays using biological semiconductors have been developed in the past, its electronic qualities are inferior when compared to silicon semiconductors.

Khang was involved in developing an electronic device by reducing single-crystal silicon to a size of 100nm (nanometer = 1nm is 10⁻⁹ of a meter) and attaching it to a flexible material, thus producing a structure with concave and convex properties that resemble miniscule waves.

Khang explained, "This electronic device will not be damaged, even when it is compressed or lengthened more than 10 percent of its average length, and its functions will remain intact even after stretching or reducing its size by more than 100 times."

The newly developed electronic device technology can be attached in places where flexibility is a must, such as robot fingers, or used in bendable products such as solar battery plates.

For instance, it is now possible to create robot hands that can hold an egg without breaking it simply by sensing the pressure of its object, or solar battery plates that unfold to the size of a football field in outer space.

Khang received his doctorate degree from the Department of Chemical Engineering in Seoul National University in 2000. He has been working as a postdoctoral researcher in the University of Illinois since November 2003.



Copyright 2002 donga.com.All rights reserved.
Contact english@donga.com for more information.
Privacy policy contact newsroom@donga.com