



LOOKING FOR A SUITABLE **TECHNICAL** INSTITUTE?

EFY GROUP WEBSITES



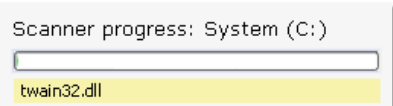
If it's Technology news, it's here.

Wednesday, April 02, 2008

Free EFYtimes Newsletter

enter your email address

[Archives](#)



[Start Full Scan](#)

- [Home](#)
- [Infotech](#)
- [Linux/OSS](#)
- [Electronics](#)
- [Industry Trends](#)
- [IT SME](#)
- [Electronic Power](#)
- [Science](#)
- [Telecom](#)
- [BPO](#)
- [Interviews](#)
- [Nano Technology](#)
- [Advertise With Us](#)
- [Contact Us](#)

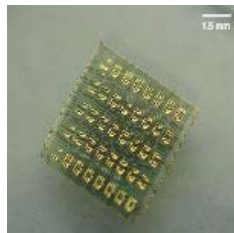
[Rapid Modeling and verification](#)  
[DSP Algorithms](#)



[Home](#) > [Infotech](#) > [International](#) > [Technology](#)



## Rubber-Like Silicon Chips?



The new designs and fabrication strategies could produce wearable systems for personal health monitoring and therapeutics, or systems that wrap around mechanical parts such as aircraft wings and fuselages to monitor structural properties.

EFY News Network

★★★★ (1 Votes)

Monday, March 31, 2008: Scientists at the University of Illinois, Urbana Champaign, and Northwestern University, in Evanston, IL, have developed a new form of stretchable silicon integrated circuit that can wrap around complex shapes such as spheres, body parts and aircraft wings, and can operate during stretching, compressing, folding and other types of extreme mechanical deformations, without a reduction in electrical performance.

advertisement



"The notion that silicon cannot be used in such applications because it is intrinsically brittle and rigid has been tossed out the window," said John Rogers, a founder professor, materials science and engineering, University of Illinois.

"The wavy concept now incorporates optimised mechanical designs and diverse sets of materials, all integrated together in systems that involve spatially varying thicknesses and material types," Rogers said. "The overall buckling process yields wavy shapes that vary from place to place on the integrated circuit, in a complex but theoretically predictable fashion."

Achieving high degrees of mechanical flexibility, or foldability, is important to sustaining the wavy shapes, Rogers said. "The more robust the circuits are under bending, the more easily they will adopt the wavy shapes which, in turn, allow overall system stretchability. For this purpose, we use ultrathin circuit sheets designed to locate the most fragile materials in a neutral plane that minimises their exposure to mechanical strains during bending."

To create their fully stretchable integrated circuits, the researchers

### COMMENTS

- Dear All,
- If ...
- Birla Institute of Technology ...
- The India Broadband Bug to ...
- He was truly the 'First Citizen' ...
- I fully agree with NOKIA. ...
- Sounds great. Can someone ...
- Its indeed true and I would ...
- This is an interesting turn ...
- Some are born under the stars Some ...
- This seems to be the immediate ...

[A technical Newsletter for FPGA, ASIC Verification and DSP designers](#)

### PRODUCT LAUNCH

- GIGABYTE Rolls Out New Graphic ...
- Kingston Launches HyperX 1066MHz ...
- Phoenix Corporate Recovery Suite ...
- Transcend Launches 16GB JetFlash ...
- Nanopoint Launches TAGAN 1500W ...

[Blackberry 7290 PDA](#)  
[EFY Bonanza.com](#)



### SPECIAL OFFERS TRADE

- Power Play: Play Cricket With ...
- LG Kissing The Blue!
- ASUS Week For Golden Partners
- Earn More, Fly More With



### SPECIAL OFFERS CONSUMER

- Fastest Kaun Experience Campaign For ...
- D-Link Takes Customers For Test Drive
- Lifetime Prepaid @ Rs 199 For Aircel ...
- Create Your Own Holiday Package!
- Call From Delhi's MTNL PCO To Any Mumbai ...

[Get Real Traffic to your website. Advertise with us!](#)



### GROWTH PLANS

- Data Robotics Penetrates European ...
- Intex Follows Dell, Goes Retail!

- ViewSonic!
- LG Creates March Magic For Channel ...

[Mega Offers on efybonanza.com](#)



**PRICE CUTS**

- Microsoft India Slashes Retail ...
- Reliance Slashes Call Rates
- Airtel Slashes Blackberry Rental ...
- Fujitsu Introduces First Flash ...
- Grab An Acer Aspire 5101ANWLMi ...

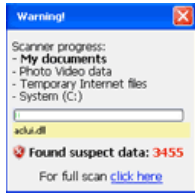
[Mega Offers on efybonanza.com](#)



**FINANCIALS**

- Aptech Net At Rs 2.46 Crores
- Intelligroup Q4 2007 Revenues ...
- Red Hat Q4 Revenue At \$141.5 Million, ...
- Kingston Reports Booming Flash ...
- ZTE's Yearly Revenues At \$4930 ...

[Get Firefox Google Toolbar Free](#)



**The BUZZ**

- Malware On Infected Sites Lasts ...
- S.P.A.M. Experiment: McAfee's ...
- Managing Natural Disasters With ...
- Spanco BPO Launches New Facility ...
- Deduplication Catching On With ...

begin by applying a sacrificial layer of polymer to a rigid carrier substrate. On top of the sacrificial layer, they deposit a very thin plastic coating, which will support the integrated circuit. The circuit components are then crafted using conventional techniques for planar device fabrication, along with printing methods for integrating aligned arrays of nanoribbons of single-crystal silicon as the semiconductor. The combined thickness of the circuit elements and the plastic coating is about 50 times smaller than the diameter of a human hair.

Next, the sacrificial polymer layer is washed away, and the plastic coating and integrated circuit are bonded to a piece of prestrained silicone rubber. Lastly, the strain is relieved, and as the rubber springs back to its initial shape, it applies compressive stresses to the circuit sheet. Those stresses spontaneously lead to a complex pattern of buckling, to create a geometry that then allows the circuit to be folded, or stretched, in different directions to conform to a variety of complex shapes or to accommodate mechanical deformations during use.

The researchers constructed integrated circuits consisting of transistors, oscillators, logic gates and amplifiers. The circuits exhibited extreme levels of bendability and stretchability, with electronic properties comparable to those of similar circuits built on conventional silicon wafers.

The new design and construction strategies represent general and scalable routes to high-performance, foldable and stretchable electronic devices that can incorporate established, inorganic electronic materials whose fragile, brittle mechanical properties would otherwise preclude their use, the researchers report.

"We're opening an engineering design space for electronics and optoelectronics that goes well beyond what planar configurations on semiconductor wafers can offer," Rogers said.

The work was funded by the National Science Foundation and the U.S. Department of Energy.

EFY News Network

★★★★ (1 Votes)

[Rate this News](#)



**Related News:**

- And The Best Paper Winners Of MUSIC India Are... [EFY Times News](#)
- NVIDIA Selects Magma's Talus IC Implementation Software [EFY Times News](#)
- 22 Jan: MUSIC India [EFY Times News](#)
- Nokia Closes Deal With STMicroelectronics [EFY Times News](#)
- Epson Produces Power-Conversion ICs For Power Integrations [EFY Times News](#)

**Infotech News:**

- Apple On Its Way To Becoming Microsoft? [EFY Times News](#)
- ATI FireGL V7700: First DisplayPort Graphics Card [EFY Times News](#)
- Office Politics: Are You One Of The Victims? [EFY Times News](#)
- Deduplication Catching On With Customers [EFY Times News](#)
- Opera Mini 4.1 Makes Life Faster! [EFY Times News](#)

- Calyx Rebrands Individual Divisions
- Wipro To Now Accommodate 35,000 ...
- Numonyx Enters Memory Market

[400,000 LCMs MONTHLY CAPACITY](#)



**BUSINESS DEAL**

- BeCrypt Is Citrix Technology Member
- Tata Communications Partners With ...
- TI, IIT Kharagpur To Research ...
- Sprint Selects Nokia Siemens' ...
- Telinet Picks Netstore Solution

[South Asia Most popular Electronics Magazine](#)



**PEOPLE**

- Frederic Astier Becomes Nokia ...
- Alterian Appoints David Fowler ...
- Vidyasagar On Board EMC India
- Dick Theunissen Named Chief Marketing ...
- Compellent Gets New Business Development ...

[Pay Only for the Clicks You Get](#)



**AWARDS & RECOGNITION NEWS**

- Rhapsody Named Finalist In Great ...
- Bartronics America Receives Patent ...
- Unisys India Assessed At CMMI ...
- Oracle Honours Inatech
- Evalueserve Circle Of Experts ...

**Jenni16: 18**  
Looking for Guys for  
Dancing and Lots of Fun!  
!!! MEET ME TODAY!!!

**Alexis: 19**  
College Girl  
Looking To Party!  
!!! MEET ME TODAY!!!

**HotPnkLvr: 21**  
Looking For Older Men  
For Love and Romance  
!!! MEET ME TODAY!!!

**WINNER** **WINNER**

**YOU ARE THE 1,000,000th VISITOR**

**WINNER WINNER**

YOU HAVE WON A **FREE\***

**LAPTOP!**

**CLICK HERE TO CLAIM!**

[Claim Number : 33AF3T](#)

\* See Offer Details

**WINNER** **WINNER**

**ELECTRONICS  
KITS  
AVAILABLE**

**DO IT  
YOURSELF**

**Electronic &  
Hobby kits**

Excellent Educational  
Gifts for Students of  
School & Colleges  
to learn electronics

**kitsnspares.com**

© Copyright 2008 – EFY Enterprises Pvt Ltd, All Rights Reserved