

The screenshot shows a web browser window with the Guinness World Records website. The browser's address bar displays the URL <http://www.guinnessworldrecords.com/index.asp?ID=58383>. The website features a navigation menu with categories: HUMAN BODY, AMAZING FEATS, NATURAL WORLD, SCIENCE & TECH, ARTS & MEDIA, HISTORY & SOCIETY, TRAVEL & TRANSPORT, and SPORTS & GAMES. The main content area is titled "Smallest Biological Computing Device" under the "SCIENCE AND TECHNOLOGY" category. It includes a detailed description of the record, a 3D molecular model, and a list of related records such as "Most Powerful Computer in Space" and "Best-Selling Video Games". A sidebar on the left offers options to "Find a World Record", "Be a Record Breaker", and "Enter the Video Vault". The footer contains links for "Privacy", "Credits", and "Corporate".



- HUMAN BODY
- AMAZING FEATS
- NATURAL WORLD
- SCIENCE & TECH
- ARTS & MEDIA
- HISTORY & SOCIETY
- TRAVEL & TRANSPORT
- SPORTS & GAMES

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FIND A WORLD RECORD

Enter keywords separated by a space e.g., pogo stick, longest fingernails

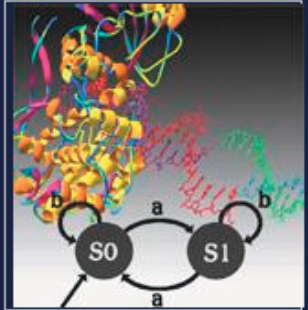
- BE A RECORD BREAKER**
- FAQs
 - MAKE A RECORD ATTEMPT
 - TRACK YOUR RECORD ATTEMPT



SCIENCE AND TECHNOLOGY << COMPUTERS << BIO-COMPUTING DEVICE

Smallest Biological Computing Device

A team of scientists led by Ehud Shapiro of the Weizmann Institute of Science, Israel, have adapted molecules of DNA to act as tiny molecular computing devices. Two DNA molecules and a molecule called an enzyme react together, acting as input, software, hardware, and power supply.



Experiments have shown that a microlitre of salt solution, containing 3 trillion self-contained DNA computing devices can perform 66 billion operations per second, with the necessary power/fuel for the computations provided by the DNA itself as it is cleaved by the hardware enzyme.

The results were announced on February 24, 2003, in the Proceedings of the National Academy of Sciences. The team consisted of Yaakov Benenson, Rivka Adar, Tamar Paz-Elizur, Zvi Livneh, and Ehud Shapiro (all Israel).

- WHO:** Ehud Shapiro *et al*
- WHEN:** Announced February 24, 2003
- WHERE:** Israel
- WHAT:** Smallest biological computing device

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