

Storing Digital Data in Living Organisms

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DNA, perhaps the oldest data storage medium, could become the newest as scientists report progress toward using DNA to store text, images, music and other digital data inside the genomes of living organisms. In a report scheduled for the April 9 issue of ACS' *Biotechnology Progress*, a bi-monthly journal, Masaru Tomita and colleagues in Japan point out that DNA has been attracting attention as perhaps the ultimate in permanent data storage.

Data encoded in an organism's DNA, and inherited by each new generation, could be safely archived for hundreds of thousands of years, the researchers state. In contrast, CD-ROMs, flash memory and hard disk drives can easily fall victim to accidents or natural disasters.

In their report, the researchers describe a method for copying and pasting data, encoded as artificial DNA, into the genome of *Bacillus subtilis*, (*B. subtilis*) a common soil bacterium, "thus acquiring versatile data storage and the robustness of data inheritance." The researchers demonstrated the method by using a strain of *B. subtilis* to store the message: "E=MC² 1905!" — Albert Einstein's famous 1905 energy-mass equivalence equation.

"We suggest that this simple, flexible and robust method offers a practical solution to data storage and retrieval challenges in combination with other, previously published techniques," the report states.

Source: ACS

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