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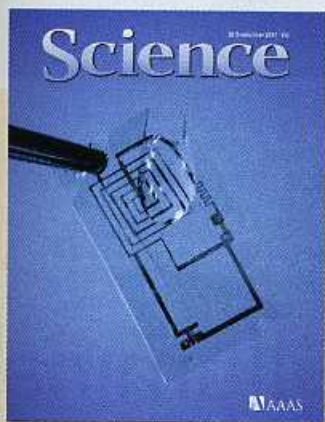
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COVER

A biodegradable integrated circuit (length: ~2.54 centimeters) shown partially dissolved by a droplet of water. This demonstration system includes transistors; diodes; inductors and capacitors, with magnesium for the electrodes/interconnects; magnesium oxide for the gate/interlayer dielectrics; silicon nanomembranes for the semiconductor; and silk as a thin, flexible substrate. The dissolution characteristics can be tuned to address applications such as bioresorbable implants, biodegradable environmental monitors, and compostable consumer electronics. See page 1640.

Image: Beckman Institute, University of Illinois, and Tufts University

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Digital information can be stored in DNA at densities higher than digital media such as flash memory or quantum holography.

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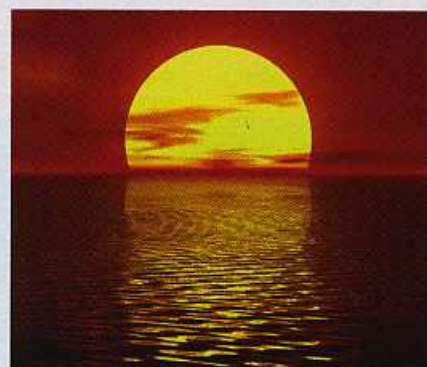
- 1629 **Out of the Tropics: The Pacific, Great Basin Lakes, and Late Pleistocene Water Cycle in the Western United States**
M. Lyle et al.
Precipitation source regions for western North America changed substantially over the last deglaciation.
- 1634 **Parallel Molecular Evolution in an Herbivore Community**
Y. Zhen et al.
Parallel mutations in the alpha subunit of the sodium pump allow insects to specialize on host plants that produce ouabain.

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Observations with NASA's Solar Dynamics Observatory show that the shape of the Sun does not vary with the 11-year solar cycle.
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S.-W. Hwang et al.
A platform of materials and fabrication methods furnishes resorbable electronic devices for in vivo use.
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A gold catalyst can link together aromatic rings under very mild conditions.
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S.-S. Chng et al.
Protein-protein interactions promote oxidative protein folding during assembly of a bacterial lipopolysaccharide exporter.
- 1668 **Sedlin Controls the ER Export of Procollagen by Regulating the Sar1 Cycle**
R. Venditti et al.
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- 1672 **Radical SAM-Dependent Carbon Insertion into the Nitrogenase M-Cluster**
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The carbon atom in the middle of a large metal cluster originates from the one-carbon donor S-adenosylmethionine.
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A mutation that accounts for adverse reactions to the Bacille Calmette-Guérin vaccine against tuberculosis is identified.
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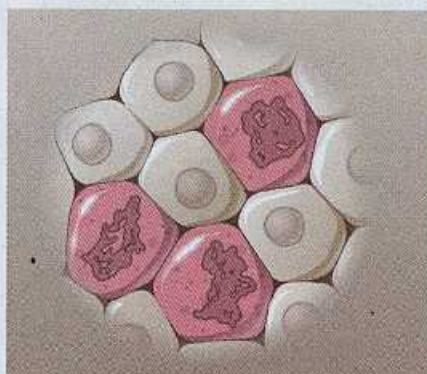
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