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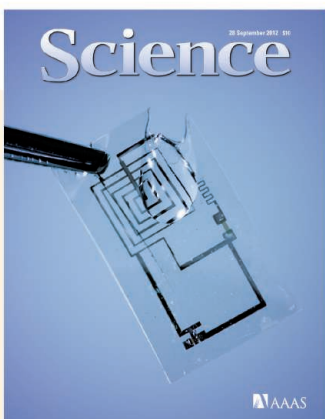


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COVER

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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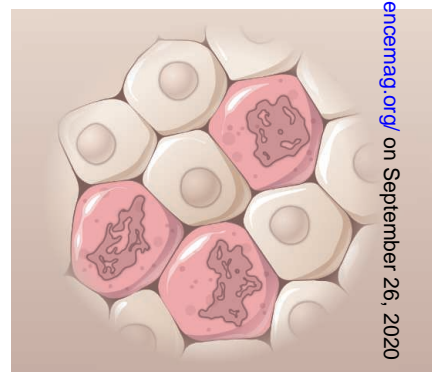
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Status and Solutions for the World's Unassessed Fisheries

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10.1126/science.1223389

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K. Doronin et al.

10.1126/science.1226625

Gene Loops Enhance Transcriptional Directionality

S. M. Tan-Wong et al.

10.1126/science.1224350

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T. Tischer et al.

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Jet-Launching Structure Resolved Near the Supermassive Black Hole in M87

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Comment and Response on "The Geometric Structure of the Brain Fiber Pathways"

Comment: M. Catani et al.

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The Signal Transduction Knowledge Environment

25 September issue: <http://scim.ag/ss092512>

RESEARCH ARTICLE: Superbinder SH2 Domains Act as Antagonists of Cell Signaling

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PERSPECTIVE: Peptide-Binding Domains—Are Limp Handshakes Safest?

N. J. Haslam and D. C. Shields

Engineered, high-affinity SH2 domains inhibit cell signaling, which may have therapeutic potential.

RESEARCH ARTICLE: Phosphorylation of Cytohesin-1 by Fyn Is Required for Initiation of Myelination and the Extent of Myelination During Development

J. Yamauchi et al.

Transgenic and knockout mice reveal a pathway that controls myelination by Schwann cells.

RESEARCH ARTICLE: The Tumor Suppressor PTEN Is Exported in Exosomes and Has Phosphatase Activity in Recipient Cells

U. Putz et al.

A tumor suppressor protein with lipid phosphatase activity travels to target cells in microvesicles.

PERSPECTIVE: Where EGF Receptors Transmit Their Signals

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Trafficking of activated receptors controls the transcriptional response to epidermal growth factor.

PERSPECTIVE: Cell Responses to Growth Factors—The Role of Receptor Tyrosine Kinase Intracellular Domain Fragments

G. Carpenter and A. Pozzi

Proteolytic fragments of receptor tyrosine kinases have distinct roles in growth factor signaling.

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26 September issue: <http://scim.ag/stm092612>

RESEARCH ARTICLE: Quantitative Analysis of the Human Airway Microbial Ecology Reveals a Pervasive Signature for Cystic Fibrosis

P. C. Blainey et al.

A distinctive, stereotyped microbiome is present in the lungs of cystic fibrosis patients.

RESEARCH ARTICLE: An RNA Profile Identifies Two Subsets of Multiple Sclerosis Patients Differing in Disease Activity

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RESEARCH ARTICLE: Vascular Catheters with a Nonleaching Poly-Sulfobetaine Surface Modification Reduce Thrombus Formation and Microbial Attachment

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A coating for catheters inhibits microbial adherence and thrombosis in vitro and in vivo.

PERSPECTIVE: Pharmacogenomics and Patient Care—One Size Does Not Fit All

K. M. Giacomini et al.

Pharmacogenomics research points to a personalized approach for prescribing and dosing medications.

REVIEW: Biomaterial-Associated Infection—Locating the Finish Line in the Race for the Surface

H. J. Busscher et al.

Infection-reducing biomaterials must balance host tissue integration and prevention of microbial attachment.

SCIENCE CAREERS

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Free Career Resources for Scientists

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Experimental Error: The Audacity of Graduate School

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Big Pharma Ramps Up Postdoc Programs

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