Artist’s rendering of the film-nanoparticle plasmonic system. Spherical gold nanoparticles are coupled to a gold film substrate by means of an ultrathin layer that prevents the particles from directly touching the film. Electromagnetic ultrahot spots are excited in the gaps. The system enables the exploration of light interactions occurring on a scale of a few tenths of a nanometer, the diameter of a typical atom. See page 1072.

Image: Sebastian Nicosia and Cristian Ciraci
1066 Interception of Excited Vibrational Quantum States by O2 in Atmospheric Association Reactions
D. R. Glowacki et al.
Vibrationally excited reaction intermediates play a bigger role under atmospheric conditions than previously suspected.
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1069 Conduction of Ultracold Fermions Through a Mesoscopic Channel
J.-P. Brantut et al.
Lithium atoms are used to simulate electronic transport.

1072 Probing the Ultimate Limits of Plasmonic Enhancement
C. Ciraci et al.
The nonlocal dielectric response of metals places a fundamental limit on the performance of plasmonic optical devices.

1075 Biogenic Potassium Salt Particles as Seeds for Secondary Organic Aerosol in the Amazon
C. Pöhler et al.
Potassium salt particles account for the previously mysterious initiation sites of aerosol growth above the Amazonian rainforest.
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1078 Radiative Absorption Enhancements Due to the Mixing State of Atmospheric Black Carbon
C. D. Cappa et al.
Direct measurements show that ambient atmospheric particulate black carbon absorbs less solar radiation than theory suggested.

1081 A Gain-of-Function Polymorphism Controlling Complex Traits and Fitness in Nature
K. V. S. K. Prasad et al.
Positive selection for a mutation that enhances resistance to herbivory in the model plant Boechera is described.

1084 Arbuscular Mycorrhizal Fungi Increase Organic Carbon Decomposition Under Elevated CO2
L. Cheng et al.
Counter to expectations, fungi associated with plant roots diminish the carbon pool in soil ecosystems under elevated levels of carbon dioxide.
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S. J. Gerbode et al.
Plants climb via lifelines that are a mix of strength and flexibility.

1091 A Single Progenitor Population Switches Behavior to Maintain and Repair Esophageal Epithelium
D. P. Doupé et al.
Dividing cells in the mouse esophagus contribute to wound healing without the need for quiescent stem cells.
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1097 Extreme Bendability of DNA Less than 100 Base Pairs Long Revealed by Single-Molecule Cyclization
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W. W. Metcalf et al.
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1107 The Shared Antibiotic Resistome of Soil Bacteria and Human Pathogens
K. J. Forsberg et al.
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1111 TLR13 Recognizes Bacterial 23S rRNA Devoid of Erythromycin Resistance–Forming Modification
M. Oldenburg et al.
A region of ribosomal RNA that confers antibiotic resistance is also recognized by mouse innate immune receptors.

1115 Compartmentalized Control of Skin Immunity by Resident Commensals
S. Naik et al.
The skin microbiota play a selective role in modulating immunity in the skin of mice.
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Kepler-47: A Transiting Circumbinary Multiplanet System
J. A. Orosz et al.
Data from the Kepler space telescope reveal two small planets orbiting a pair of two low-mass stars.
10.1126/science.1228380

A High-Coverage Genome Sequence from an Archaic Denisovan Individual
M. Meyer et al.
A close-up look provides clues to the relationships between modern humans, Denisovans, and Neandertals.
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Transcriptional Architecture and Chromatin Landscape of the Core Circadian Clock in Mammals
N. Koike et al.
A 1-day reconstruction of transcriptional events reveals the influence of the circadian clock across the genome.
10.1126/science.1226339

Processing and Subcellular Trafficking of ER-Tethered EIN2 Control Response to Ethylene Gas
H. Qiao et al.
The plant hormone ethylene triggers cleavage and translocation to the nucleus of a signaling component.
10.1126/science.1225974

Disulfide Rearrangement Triggered by Translocon Assembly Controls Lipopolysaccharide Export
S.-S. Chng et al.
Protein-protein interactions promote oxidative protein folding during assembly of a bacterial lipopolysaccharide exporter.
10.1126/science.1227215

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K. Neumann et al.
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Comment on “Intensifying Weathering and Land Use in Iron Age Central Africa”
J. Maley et al.
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Response to Comments on “Intensifying Weathering and Land Use in Iron Age Central Africa”
G. Bayon et al.
Full text at www.sciencemag.org/cgi/content/full/337/6098/1040-e

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RESEARCH ARTICLE: A VASP-Rac–Soluble Guanylyl Cyclase Pathway Controls cGMP Production in Adipocytes
K. Jennissen et al.
Targeting the cGMP effector VASP may enhance metabolism by stimulating the activity and abundance of brown adipocytes.

RESEARCH ARTICLE: The Complex of G Protein Regulator RGS9–2 and Gβ5 Controls Sensitization and Signaling Kinetics of Type 5 Adenyl cyclase in the Striatum
K. Xie et al.
By suppressing cAMP production in the striatum, the RGS9-2/Gβ5 complex could affect the development of opioid addiction.

PERSPECTIVE: Do Pancreatic β cells “Taste” Nutrients to Secrete Insulin?
J.-C. Henquin
The role of β cell taste receptors in the control of insulin secretion is unclear.

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G. Wang and A. M. VanHook
A protease can help protect against neurodegeneration by preventing inflammation in microglia.

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M. Jan et al.
Exome sequencing and single-cell analysis reveal that a clonal progression of mutations in hematopoietic stem cells precedes human acute myeloid leukemia.

RESEARCH ARTICLE: A Dense Poly(Ethylene Glycol) Coating Improves Penetration of Large Polymeric Nanoparticles Within Brain Tissue
E. A. Nance et al.
Nanoparticles densely coated with poly(ethylene glycol) rapidly penetrate within mouse, rat, and human brain parenchyma.

RESEARCH ARTICLE: The Stoichiometric Production of IL-2 and IFN-γ mRNA Defines Memory T Cells That Can Self-Renew After Adoptive Transfer in Humans
A. Wang et al.
Cytokines can identify memory T cells used for cancer immunotherapy.

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P. Au et al.
The U.S. Food and Drug Administration applies regulatory flexibility to balance benefits and risks to participants in cell-therapy clinical trials.

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D. R. Mosty et al.
The use of a set of principles when designing research computing applications can increase the likelihood of successful adoption by researchers.

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