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COVER
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

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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
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Lithium atoms are used to simulate electronic transport.

1072 Probing the Ultimate Limits of Plasmonic Enhancement
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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
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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
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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
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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
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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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1087 How the Cucumber Tendril Coils and Overwinds
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1091 A Single Progenitor Population Switches Behavior to Maintain and Repair Esophageal Epithelium
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1094 Identification of Small Molecule Activators of Cryptochrome
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1097 Extreme Bendability of DNA Less than 100 Base Pairs Long Revealed by Single-Molecule Cyclization
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A region of ribosomal RNA that confers antibiotic resistance is also recognized by mouse innate immune receptors.

1113 Compartmentalized Control of Skin Immunity by Resident Commensals
S. Naik et al.
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