A hexabenzocoronene molecule (diameter: 1.4 nanometers) imaged by noncontact atomic force microscopy using a microscope tip terminated with a single carbon monoxide molecule. The carbon-carbon bonds in the imaged molecule appear with different contrast and apparent lengths. Based on these disparities, the bond orders and lengths of the individual bonds can be distinguished. See page 1326.

Image: Leo Gross, IBM Research - Zurich
REVIEW

1309 Rinderpest Eradication: Appropriate Technology and Social Innovations
J. C. Mariner et al.

BREVIA

1313 Adaptive Prolonged Postreproductive Life Span in Killer Whales
E. A. Foster et al.
Killer whale mothers continue to help their adult male offspring to survive long after ceasing reproduction.

>> Science Podcast

REPORTS

1314 Octet-Line Node Structure of Superconducting Order Parameter in KFe₂As₂
K. Okazaki et al.
Laser-based photoemission spectroscopy is used to map out the pairing gap of an iron-based superconductor.

1318 Relaxation and Prethermalization in an Isolated Quantum System
M. Gring et al.
Two halves of a split ultracold gas of rubidium atoms retain memory of the initial state for an extended time.

1322 Oxidative Aliphatic C-H Fluorination with Fluoride Ion Catalyzed by a Manganese Porphyrin
W. Liu et al.
A catalyst introduces fluorine in a convenient, mild fashion to a range of relatively inert hydrocarbons.

1326 Bond-Order Discrimination by Atomic Force Microscopy
L. Gross et al.
Images detected with an atomic force microscope tip decorated with a carbon monoxide molecule could distinguish Pauling bond order.

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1330 Glacier Extent During the Younger Dryas and 8.2-ka Event on Baffin Island, Arctic Canada
N. E. Young et al.
Cooling during the event that occurred 8.2 thousand years ago was less extreme but more evenly distributed across the seasons than during the Younger Dryas.

1333 Initiation of Cell Wall Pattern by a Rho- and Microtubule-Driven Symmetry Breaking
Y. Oda and H. Fukuda
A Rho guanosine triphosphatase–based regulatory mechanism reveals how plants remodel membranes and cell walls to produce various cell shapes.

1336 A Killer-Protector System Regulates Both Hybrid Sterility and Segregation Distortion in Rice
J. Yang et al.
A genetic locus containing three protein-coding genes underlies the system causing hybrid sterility among rice species.

1340 Single Reconstituted Neuronal SNARE Complexes Zipper in Three Distinct Stages
Y. Gao et al.
Zippering of a single SNARE complex generates high force and energy that can potentially drive synaptic membrane fusion.

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1343 Highly Conserved Protective Epitopes on Influenza B Viruses
C. Dreyfus et al.
Three broadly neutralizing human monoclonal antibodies protect mice against influenza B.

1348 Structural Probing of a Protein Phosphatase 2A Network by Chemical Cross-Linking and Mass Spectrometry
F. Herzog et al.
Spatial restraints revealed by chemical cross-linking and mass spectrometry elucidate the topology of a dynamic signaling network.

1353 Global Gene Deletion Analysis Exploring Yeast Filamentous Growth
O. Ryan et al.
Yeast genes involved in the dimorphic switch between cell budding and filamentous growth types are identified.

1357 A Critical Period for Social Experience–Dependent Oligodendrocyte Maturation and Myelination
M. Makinodan et al.
In mice, early social experience regulates prefrontal cortex myelination that is essential for normal cognitive development.

1360 Active DNA Demethylation in Plant Companion Cells Reinforces Transposon Methylation in Gametes
C. A. Ibarra et al.
Activation of transposable elements in the companion cells of plant gametes can silence transposable elements in the gamete.
Focal adhesions and invadopodia.
Science 337 (6100), 1271-1365.