

Science

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Programa de
Biotecnología
004

Carbon Capture and Sequestration



AAAS



SPECIAL SECTION

Carbon Capture and Sequestration

INTRODUCTION

- 1641 Clearing the Air

NEWS

- 1642 Round and Round:
A Guide to the Carbon Cycle
- 1644 Carbon Sequestration
- 1646 China Grapples With a Burning Question

REVIEW

- 1647 Carbon Capture and Storage:
How Green Can Black Be?
R. S. Haszeldine
>> *Science Podcast*

PERSPECTIVES

- 1652 Amine Scrubbing for CO₂ Capture
G. T. Rochelle
- 1654 Why Capture CO₂ from the Atmosphere?
D. W. Keith
- 1656 Onshore Geologic Storage of CO₂
F. M. Orr Jr.
- 1658 Storage of Carbon Dioxide in
Offshore Sediments
D. P. Schrag

>> See also Editorial p. 1599



page 1614

EDITORIAL

- 1599 Carbon Capture and Sequestration
Steven Chu
>> *Carbon Capture and Sequestration*
section p. 1641

NEWS OF THE WEEK

- 1606 Obama Facing Tough Decision on
Whether to Keep Aiming for the Moon
- 1607 Grants 'Below Payline' Rise to Help
New Investigators
- 1609 A New Biology to Mend Society's Woes
- 1609 From *Science's* Online Daily News Site
- 1610 The Force Behind North Korea's
New Science University
- 1611 From the *Science* Policy Blog
- 1612 Germany: Election Heats Up Nuclear Debate
- 1613 Who Will Pay for China's
Planned X-ray Satellite?

NEWS FOCUS

- 1614 The Theory? Diet Causes Violence.
The Lab? Prison.
>> *Science Podcast*
- 1617 Exotic Telescopes Prepare to
Probe Era of First Stars and Galaxies
- 1620 Scoping Out Unseen Forces
Shaping North America

LETTERS

- 1622 Preserving Starry Nights
W. Freedman
Forecast for Reproducible Data:
Partly Cloudy
L. J. Osterweil et al.
Response
M. R. Nelson
Immune System: Not So Superior
S. M. Hedrick
- 1623 Life in Science: Having a Blast in Kenya
T. Parsons

1624 TECHNICAL COMMENTS ABSTRACTS

BOOKS ET AL.

- 1625 The Patent Crisis and
How the Courts Can Solve It
D. L. Burk and M. A. Lemley,
reviewed by *R. S. Eisenberg*
- 1626 Untangling the Double Helix
J. C. Wong, reviewed by *A. Mondragón*

EDUCATION FORUM

- 1627 Revising the AP Biology Curriculum
W. B. Wood

PERSPECTIVES

- 1629 Unraveling Traveling
C. P. Kyriacou
>> *Report p. 1700*
- 1630 A New Departure in Fluorination Chemistry
V. Gouverneur
>> *Research Article p. 1661*

CONTENTS continued >>



COVER

The Hellisheidi geothermal power project in southwestern Iceland, site of a pilot study on the feasibility of sequestration of carbon dioxide in basaltic rocks. Here, carbon dioxide released from the hot water that powers the facility is dissolved in cooling water and injected below ground to a depth of 300 to 800 meters, where it can react with basalt to form new, stable minerals. See the special section beginning on page 1641.

Photo: Haraldur Stefansson/Alamy

DEPARTMENTS

- 1596 This Week in *Science*
- 1601 Editors' Choice
- 1602 *Science* Staff
- 1605 Random Samples
- 1637 AAAS News & Notes
- 1709 New Products
- 1710 *Science* Careers

1631 Tin Takes Ethylene On—and Off

L. R. Sita

>> Report p. 1668

1632 Emergent or Just Complex?

A. C. Balazs and I. R. Epstein

1634 Simulating Multifunctional Structures

S. R. Phillpot and S. B. Sinnott

1635 Evolving Cell Signals

M. O. Collins

>> Reports pp. 1682 and 1686

BREVIA

1660 Oceanic Spawning Migration of the European Eel (*Anguilla anguilla*)

K. Aarestrup et al.

Satellite tracking technology has allowed scientists to map part of the migration route of the European eel.

RESEARCH ARTICLE

1661 Formation of ArF from LPdAr(F): Catalytic Conversion of Aryl Triflates to Aryl Fluorides

D. A. Watson et al.

A catalyst enables versatile carbon-fluorine bond formation using simple fluoride salts.

>> Perspective p. 1630

REPORTS

1665 High-Detectivity Polymer Photodetectors with Spectral Response from 300 nm to 1450 nm

X. Gong et al.

Well-designed polymer photodetectors show performance comparable with the best inorganic devices.

1668 Reversible Reactions of Ethylene with Distannynes Under Ambient Conditions

Y. Peng et al.

Ethylene reacts reversibly with triply bonded tin, contrasting with its reactivity toward carbon triple bonds.

>> Perspective p. 1631

1670 Coordinatively Unsaturated Al³⁺ Centers as Binding Sites for Active Catalyst Phases of Platinum on γ -Al₂O₃

J. H. Kwak et al.

A combination of high-resolution spectroscopy and microscopy reveals the details of platinum binding to aluminum oxide.

1674 Distribution of Mid-Latitude Ground Ice on Mars from New Impact Craters

S. Byrne et al.

Observations of ground ice exposed by recent impact craters probe the composition of the upper layers of the surface of Mars.

1677 Holocene Glacier Fluctuations in the Peruvian Andes Indicate Northern Climate Linkages

J. M. Licciardi et al.

Glacial advances in the southern Peruvian Andes during the Holocene are correlated with the climate of the North Atlantic region.

1680 Chloroquine Transport via the Malaria Parasite's Chloroquine Resistance Transporter

R. E. Martin et al.

Chloroquine resistance in *Plasmodium falciparum* is due to the direct export of the drug via a mutant transporter protein.

1682 Global Analysis of Cdk1 Substrate Phosphorylation Sites Provides Insights into Evolution

L. J. Holt et al.

The range of sites phosphorylated by a protein kinase in yeast provides clues to the evolution of such regulatory mechanisms.

1686 Positive Selection of Tyrosine Loss in Metazoan Evolution

C. S. H. Tan et al.

Evolution of tyrosine phosphorylation as a signaling mechanism may have coincided with loss of tyrosine residues to avoid noise.

>> Perspective p. 1635

1688 Evolution of a Novel Phenolic Pathway for Pollen Development

M. Matsuno et al.

Gene copying and positive Darwinian selection promoted the emergence of a phenolic pathway in Brassicaceae.

1693 Creating Bacterial Strains from Genomes That Have Been Cloned and Engineered in Yeast

C. Lartigue et al.

A *Mycoplasma mycoides* genome was engineered in yeast and then transplanted into *M. capricolum* cells to produce a new strain.

1696 On Universality in Human Correspondence Activity

R. D. Malmgren et al.

Affinity toward a particular life-style affects the communication patterns between people.

>> Science Podcast

1700 Antennal Circadian Clocks Coordinate Sun Compass Orientation in Migratory Monarch Butterflies

C. Merlin et al.

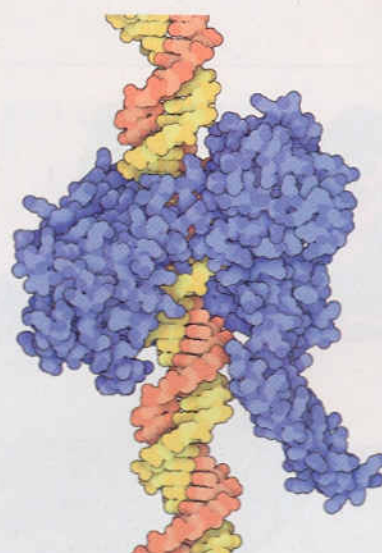
Monarch butterfly antennae contain the timing mechanism for time-compensated Sun compass orientation.

>> Perspective p. 1629

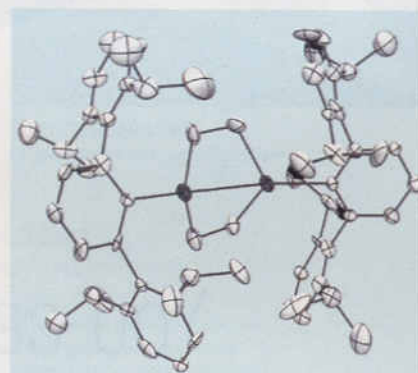
1705 Optimizing Influenza Vaccine Distribution

J. Medlock and A. P. Galvani

Age-related transmission patterns should be incorporated into vaccine distribution policy to minimize the impact of epidemics.



page 1626



pages 1631 & 1668



page 1688

CONTENTS continued >>

SCIENCEONLINE

SCIENCEEXPRESS

www.sciencexpress.org

Amyloid- β Dynamics Are Regulated by Orexin and the Sleep-Wake Cycle

J.-E. Kang et al.

Sleep patterns can influence amyloid plaque formation in a mouse model of Alzheimer's disease.

10.1126/science.1180962

Detection of Gamma Rays from a Starburst Galaxy

F. Acero et al.

Detection of our nearest starburst galaxy at very high energies confirms this galaxy-type as a new class of gamma-ray emitter.

10.1126/science.1178826

Character and Spatial Distribution of OH/H₂O on the Surface of the Moon Seen by M³ on Chandrayaan-1

C. M. Pieters et al.

10.1126/science.1178658

Detection of Adsorbed Water and Hydroxyl on the Moon

R. N. Clark

10.1126/science.1178105

Temporal and Spatial Variability of Lunar Hydration as Observed by the Deep Impact Spacecraft

J. M. Sunshine et al.

Space-based spectroscopic measurements provide evidence for water or hydroxyl (OH) on the surface of the Moon.

10.1126/science.1179788

A Lunar Waterworld

P. G. Lucey

10.1126/science.1181471

TECHNICALCOMMENTS

Comment on "Infants' Perseverative Search Errors Are Induced by Pragmatic Misinterpretation"

J. P. Spencer et al.

full text at www.sciencemag.org/cgi/content/full/325/5948/1624-a

Response to Comment on "Infants' Perseverative Search Errors Are Induced by Pragmatic Misinterpretation"

J. Topál et al.

full text at www.sciencemag.org/cgi/content/full/325/5948/1624-b

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Antplant Ants Are Never Satisfied

Tree-dwelling ants expand their territory beyond hospitable trees.

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Gene Therapy Gives Monkeys Color Vision

Finding may point to future treatments for human colorblindness.

SCIENCE SIGNALING

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RESEARCH ARTICLE: The Single Transmembrane Domains of Human Receptor Tyrosine Kinases Encode Self-Interactions

C. Finger et al.

The transmembrane domain of any of the 58 human receptor tyrosine kinases is sufficient to mediate dimerization.

RESEARCH ARTICLE: MSK2 Inhibits p53 Activity in the Absence of Stress

S. Llanos et al.

The kinase MSK2 inhibits p53 transcriptional activity at a subset of promoters through a kinase-independent mechanism.

PERSPECTIVE: Integrin Proteomes Reveal a New Guide for Cell Motility

E. H. J. Danen

A proteomics analysis of integrin-associated complexes establishes an unexpected connection to cell migration.

PERSPECTIVE: Human-Specific Genes May Offer a Unique Window into Human Cell Signaling

P. D. Stahl and M. J. Wainszelbaum

Analysis of human-specific genes may reveal, at the molecular level, what makes humans human.

GLOSSARY

Find out what APR, NHEJ, and SLAM mean in the world of cell signaling.

SCIENCECAREERS

www.sciencereers.org/career_magazine

Free Career Resources for Scientists

Special Feature: Careers in Humanitarian Science

E. Pain

Scientists are applying their skills to relieve hunger, disease, and human-rights violations.

Serving Human Rights and Humanitarian Needs

E. Pain

Three passionate scientists describe their careers dealing with human rights.

Helping Feed the World

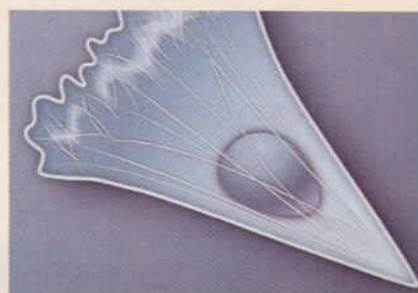
S. McLoone

Scientists are helping to increase and maintain food supplies where food is scarce.



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Migrating cell with lamellipodium.

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Download the 25 September Science Podcast to hear about challenges to carbon capture and storage, human correspondence patterns, linking nutrition to violent behavior, and more.

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