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COVERAGE
A 36× enlarged triply periodic porous cube of photocured polymer, 60 millimeters in total length, shown reflected off a pool of uncured resin. Computer-aided design makes it possible to tailor materials with control over porosity, pore size, and mechanical properties. These materials may subsequently find use as scaffolds for tissue engineering and cell-laden hydrogel constructs. See the special section starting on page 899 for a series of articles on biomaterials.

Fabrication: Ferry P. W. Melchels, Jan Feijen, Dirk W. Grijpma;
Photograph: Nikki Hamers

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M. D. Lima et al.
Thermally driven actuators use a guest material within carbon nanotube yarns to generate fast torsional and tensile motions.

REPORTS

Synthetic Lipid Membrane Channels Formed by Designed DNA Nanostructures
M. Langecker et al.
DNA-based transmembrane channels exhibit gating responses and can be used for single-molecule detection.

Coherent Phonon Heat Conduction in Superlattices
M. N. Luckyanova et al.
Coherent phonon transport is evidenced by linear increases of thermal conductivity with total superlattice thickness.

Evidence for a Dynamo in the Main Group Pallasite Parent Body
J. A. Tarduno et al.
Some pallasite meteorites might have formed when liquid FeNi from an impactor was injected into their parent body’s mantle.

Evidence for Early Hafted Hunting Technology
J. Wilkins et al.
Damage on 500,000-year-old stone points implies their use on spears, perhaps by the ancestor of Neandertals and Homo sapiens.

Financial Costs of Meeting Global Biodiversity Conservation Targets: Current Spending and Unmet Needs
D. P. McCarthy et al.
Data for birds and protected area requirements yield estimated costs for maintaining worldwide diversity targets.

Pathological α-Synuclein Transmission Initiates Parkinson-like Neurodegeneration in Nontransgenic Mice
K. C. Luk et al.
Intracerebral inoculation of synthetic misfolded α-synuclein mimics Parkinson’s disease in wild-type mice.

Orbitofrontal Cortex Supports Behavior and Learning Using Inferred But Not Cached Values
J. L. Jones et al.
Inferred value can be used to both guide behavior and modulate learning in rats.

Akt-Mediated Regulation of Autophagy and Tumorigenesis Through Beclin 1 Phosphorylation
R. C. Wang et al.
A direct link between a cancer-promoting protein kinase and the control of autophagy is presented.

A Rab32-Dependent Pathway Contributes to Salmonella Typhi Host Restriction
S. Spanò and J. E. Galán
Expression of a single effector protein allows a human-specific pathogen to replicate within normally nonpermissive mice.

Salmonella Inhibits Retrograde Trafficking of Mannose-6-Phosphate Receptors and Lysosome Function
K. McGourty et al.
A bacterial pathogen interferes with intracellular trafficking of receptors needed for host cell lysosomal-enzyme targeting.

Convergent Evolution Between Insect and Mammalian Audition
F. Montealegre-Z. et al.
In an example of convergent evolution, rainforest katydids hear using similar mechanisms to those found in mammalian ears.

Offspring from Oocytes Derived from in Vitro Primordial Germ Cell–like Cells in Mice
K. Hayashi et al.
Mature, fully functional female gametes can be generated from mouse pluripotent stem cells.

A Genomic Regulatory Element That Directs Assembly and Function of Immune-Specific AP-1–IRF Complexes
E. Glasmacher et al.
Cooperative binding of transcription factors to composite genomic elements regulates T helper 17 cell differentiation.
Science 338 (6109), 861-981.