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COVER
Raman mapping images of carbon isotope–labeled graphene domains (lateral dimensions: 50 to 120 micrometers) created by exposing a copper surface to normal and isotope-labeled methane at preselected intervals. The data provide information about the effect of growth parameters on the domain shape and size and also contribute to the growth of centimeter-size single crystals of graphene that could enable applications such as nanoelectronics, photonics, and ultrastrong materials. See page 720.

Image: Yufeng Hao

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http://dx.doi.org/10.1126/science.1234850

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709 Architecture of an RNA Polymerase II Transcription Pre-Initiation Complex
K. Murakami et al.
The yeast transcription pre-initiation complex has a bi-lobed structure that may reflect the assembly pathway of the complex.
Research Article Summary; for full text:
http://dx.doi.org/10.1126/science.1238724
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Quantum entanglement is demonstrated between a macroscopic mechanical oscillator and a microwave field.
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713 A Thermoelectric Heat Engine with Ultracold Atoms
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A flow of particles in response to a thermal gradient is observed in a channel connecting two reservoirs of Li atoms.
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716 Visualization and Quantification of Electrochemical and Mechanical Degradation in Li Ion Batteries
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Synchrotron x-ray tomography can be used to study failure modes in an operating battery.

720 The Role of Surface Oxygen in the Growth of Large Single-Crystal Graphene on Copper
Y. Hao et al.
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G. McVicker et al.
Human genetic variation affects transcription factor binding, leading to histone modifications.

750 Extensive Variation in Chromatin States Across Humans
M. Kasowski et al.
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