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Home / News / March 12th, 2011; Vol.179 #6 / [Article](#)

News in Brief: Molecules/Matter & Energy

[Computer processors get even tinier, plus more in this week's news](#)

By Science News Staff

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Teeny tiny chips

A computer processor barely visible to the human eye that can perform many of the logic operations larger computer chips do is reported in the Feb. 10 *Nature*. The device, developed by scientists at Harvard University, contains about 500 transistors made from synthesized nanowires. It's an order of magnitude more complex than any previous nanoprocessor, they say, and is scalable, allowing modules to be connected to each other to potentially develop tiny, low-power nanocontrollers for miniature robots or medical devices. — *Devin Powell*

Nicotine fix

Knocking out a molecule in rats' brains helps explain why some people find it especially hard to quit smoking. In both people and rodents, molecules on cells in part of the brain called the habenula sense nicotine. Usually, after a certain amount of nicotine the habenula sends a "we've had enough" signal, but in rats with altered nicotine-sensing molecules, this signal got scrambled and the rodents self-administered whopping doses of nicotine, far beyond what normal rats would want, finds a study appearing online January 30 in *Nature*. People with mutations in the gene encoding this same molecule are more vulnerable to tobacco addiction, and this new study, led by Paul Kenny at the Scripps Research Institute in Jupiter, Fla., may help explain why. — *Laura Sanders*

Not your ordinary water

For anyone who's ever wanted to build a teeny-tiny water park — beware. On the nanoscale, water doesn't follow the rules. In big containers — think buckets or oceans — water molecules bounce off each other and stick together through hydrogen bonds, small electromagnetic pushes and pulls. But in very small containers water molecules rewire their electricity, researchers from the University of Houston report online at arXiv.org. Confined in tubes about 20 helium atoms across, protons in water molecules wiggle in entirely different ways. Channels this small are common in the cell, so studies of water

in extremely small containers may help scientists understand how liquids behave in living organisms. —*Daniel Strain*

CITATIONS & REFERENCES :

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