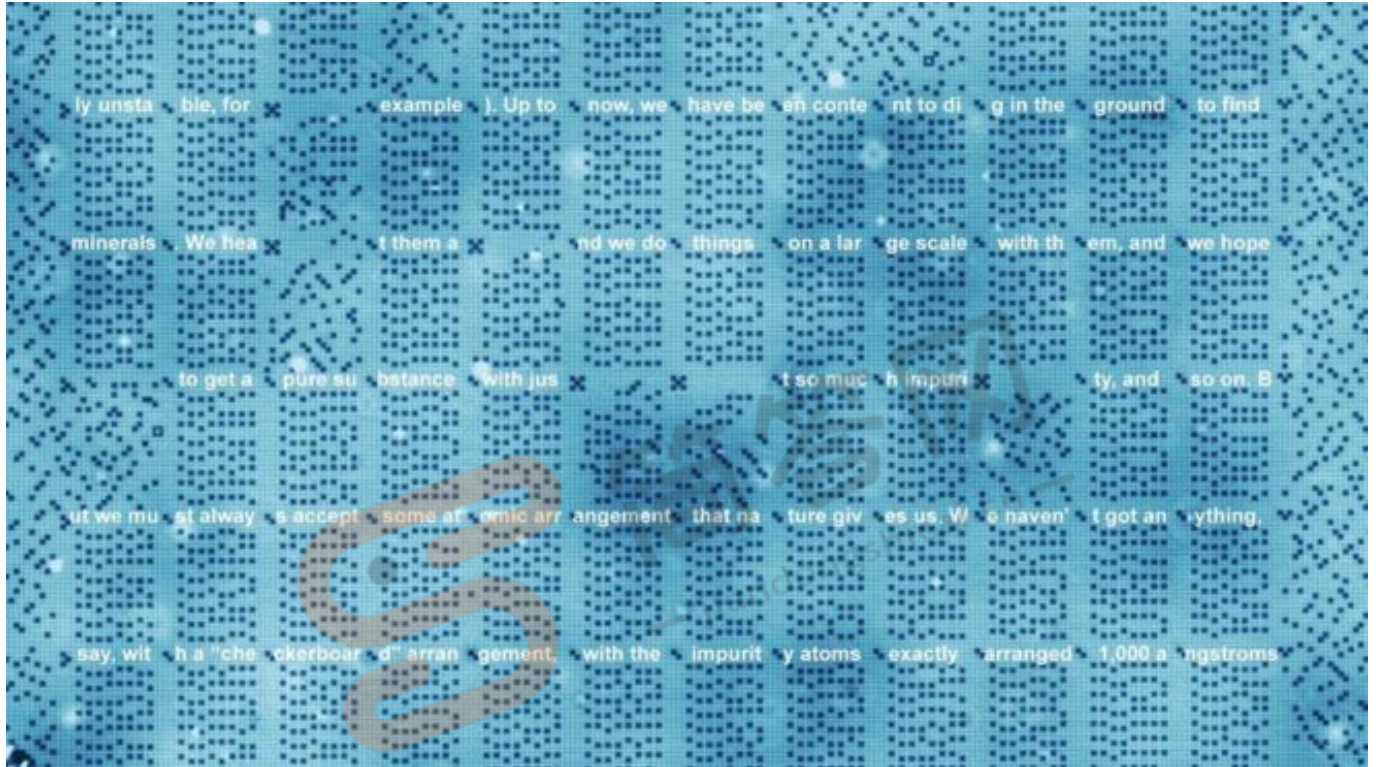


《荷兰研发原子级数据储存设备 合现有硬盘500倍》

导读:荷兰研究团队在已成功研发出能在超小型元件内存储大量信息的储存设备，其同等面积可储存的信息量相当于现有硬盘的500倍，理论上可在邮票大小的面积内存入全世界所有的书籍数据。



Dutch scientists developed rewritable memory that stores information in the positions of individual chlorine atoms on a copper surface.

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The information storage density is two to three orders of magnitude beyond current hard disk or flash technology.

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Details of the advance appear in the journal Nature Nanotechnology.

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The 1 kilobyte memory is the work of a team led by Sander Otte at the Technical University of Delft (TU Delft). With each bit of data represented by the position of a single chlorine atom, the team was able to reach a density of 500 Terabits per square inch.

??1????????????????TU Delft??·??500TB??????

"In theory, this storage density would allow all books ever created by humans to be written on a single post stamp," said Dr Otte.

“??”??????

Or, by another measure, the entire contents of the US Library of Congress could be stored in a 0.1mm-wide cube.

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The researchers used a scanning tunneling microscope (STM), in which a sharp needle probes the atoms on the surface one by one.

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This allowed the researchers to push the atoms around in a manner which Sander Otte compares to a sliding puzzle.

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"Every bit consists of two positions on a surface of copper atoms, and one chlorine atom that we can slide back and forth between these two positions," he said.

“??”???

"If the chlorine atom is in the top position, there is a hole beneath it - we call this a 1. If the hole is in the top position and the chlorine atom is therefore on the bottom, then the bit is a 0."

“????????????????——????1????????????????0?”

Because the chlorine atoms are surrounded by other chlorine atoms (except near the holes), they keep each other in place.

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