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Chip creates superfast computer

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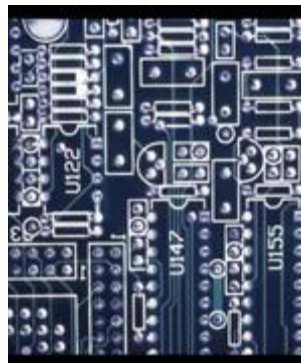
Computers could be able to work faster

A production method to make super-fast computers has been discovered by physicists working in North Wales.

Physicists at the University College of Wales, Bangor have developed a theory which could make microchips smaller than normal, increasing the speed of the computer.

"Current high speed computing relies on ever-smaller chips with tiny circuits," said the university's Dr Sam Braunstein.

The physicists have been working on the research with colleagues from the Jet Propulsion Laboratories from the USA.



Micro-chips would be smaller

"The decreasing size of these chips enables the current to pass through at greater speeds, improving the number-crunching capabilities of our computers."

The production of a microchip involves etching its surface using a laser light.

The rest of the chip needs to be protected with a stencil - currently these are cut to 400 times thinner than the width of a human hair.

Light source

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There is a limit to how small the circuits can be cut using current technology, which follows the rules of what quantum physicists refer to as "classical" physics.

"Classical" physics says the etching can be no smaller than half the wave length of the light source being used.

The quantum physicists have proved, in theory, that by taking advantage of the quantum, or sub-atomic world, they can use light which acts as though it has a wavelength shorter than conventional light.

Because of this, they will be able to create stencils smaller than those made available by current technology.

"It is very exciting to be working in this field," said student Pieter Kok.

"The theory has to be developed, but over the coming years, there will be increasing numbers of new applications of quantum mechanics."

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