

## Novel microchip unveiled by NTU-US team

By **BRITANNY KING**

LEAVING your mobile phone charger at home when you go on a two-week vacation may be the norm one day.

Scientists from Nanyang Technological University (NTU) and Rice University in the US have created a microchip that uses 30 times less power while running seven times faster than today's best technology.

NTU and Rice University jointly validated the technology, dubbed PCM26, via a joint institute that Rice University professor Krishna Palem founded in 2007, the Institute for Sustainable Nanoelectronics.

Revealing the results at an international conference in San Francisco yesterday, the Singapore-US team said that PCM26 is supported by chipmakers' existing equipment, implying low industry entry costs.

The NTU-Rice University team plans to follow its proof-of-concept work on microchips with tests on microchips for cellphones, graphics cards and medical implants.

The microchip can also be quickly incorporated in electronic devices such as computer game consoles, robotics and Internet security.

Team member and NTU teaching fellow Natalie Kong Jia Hui said: "Our technology is a significant contributor towards environmental-friendliness – green computing, or probabilistic computing, with an extremely-energy-aware attribute.

"This is due to the fact that this novel technology recycles noise."

Intel has expressed interest in the technology and more manufacturers are expected to follow suit.

"This logic will prove extremely important because basic physics dictates that future transistor-based lo-

gic will need probabilistic methods," said Shikhar Borkar, an Intel Fellow and director of Intel's Microprocessor Technology.

The team sees PCM26 technology entering the consumer computing market in as little as four years and even patenting itself as a parallel to customised technology in the near future.

"We even hope this technology can create a new industry for Singapore," said associate professor Teo Si-wei Kong, head of the division of circuits and systems at NTU's School of Electrical and Electronic Engineering.