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Researchers at the University of Alabama in Huntsville (UAH) are working on a passive PC cooling system promising to cut the costs associated with cooling fans through the use of convection and cooling liquid.

The cooling liquid in question is 3M's Fluorinert FC-72. It acts as an electrical insulator and is colourless, odourless, biologically inert, chemically stable, nonflammable and has a boiling point at 56°C.

As the researches put it, heat from the computer processor vaporises the liquid. The vapor moves to a heat exchanger, releases heat into the environment and condenses back into liquid form. The liquid then moves into a holding tank before going back to the processor to complete the cycle.

The system was compared against traditional solid-state passive and fan cooling systems using modified Intel Pentium 4 and Core i3 processors running for up to 12 hours under no load and heavy load conditions.

"When we remove the cooling fan, it saves material costs, but it also eliminates the noise, vibration and dust contamination of fan cooling," researcher Cuong Nguyen says. "When you remove the dust, you remove the chance that it can build up. Build up of dust can destroy the electronic components."

The researchers say the liquid passive cooling system can find applications beyond PCs, including the temperature stabilisation of electronic guidance and propulsion controls in outer

space and efficient power delivery systems.

Go Computer Cooling System Could Save US $6.3bn in Electricity a Year