

New video camera released featuring ultra-high-speed CMOS image sensor developed at tohoku university

August 7 2015



HyperVision HPV-X2. Credit: Tohoku University

An ultra-high-speed CMOS image sensor that offers 10 million frames per second with ISO16,000 photosensitivity has been developed at Tohoku University by a research group led by Prof. Shigetoshi Sugawa at the Graduate School of Engineering's Department of Management Science and Technology.

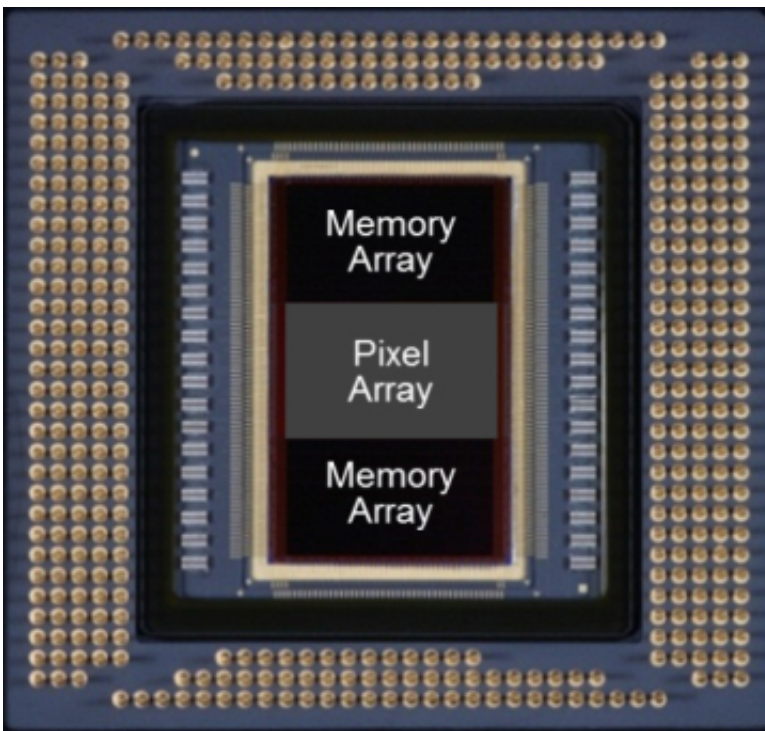
Shimadzu Corporation, which has been working in cooperation with the university, has now released a new [video camera](#) incorporating the ultra-fast CMOS image sensor.

Called the Hyper Vision HPV-X2, the new [camera](#) offers a significantly

higher photosensitivity than the previous model released in September 2012, while maintaining the recording speed of 10 million frames per second. It is the world's fastest in its class.

The higher [photosensitivity](#) means that more vivid images can now be captured even under low light conditions, such as under a microscope.

The improvement in the camera is made possible by the new ultra-high-speed CMOS image sensor, FTCMOS2, which Prof. Sugawa's research group developed by reinvestigating the performance bottleneck and revising the pixel structure and circuit design of previous models.



Ultra-high-speed CMOS image sensor, FTCMOS2. Credit: Tohoku University

The higher sensitivity of the ultra-high-speed video camera is expected

to be widely used for advanced scientific research. Developments in life-sciences and engineering will benefit, as the new camera will enable the observation of ultra-high-speed phenomena that could not previously be clearly captured. Examples include the interactions between cancer cells and drug-filled microcapsules, the fuel injection process of automotive fuel injectors, and the ink ejection process of inkjet printers.

Provided by Tohoku University

Citation: New video camera released featuring ultra-high-speed CMOS image sensor developed at tohoku university (2015, August 7) retrieved 26 April 2024 from <https://phys.org/news/2015-08-video-camera-featuring-ultra-high-speed-cmos.html>

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