



**National Research
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Professor Heung Cho Ko's research team develops omnidirectional image sensor (National Research Foundation of Korea)

- Korean researchers have succeeded in developing a 360° image sensor that does not have any blind spots. According to the Korea Research Foundation, Professor Heung Cho Ko's research team at the Gwangju Institute of Science and Technology has produced a camera sensor by using a deformable three-dimensional electronic device, which essentially eliminates any blind spots caused by bezels and electrical wiring
- As the video industry develops, such as CCTV, black boxes, holography, and unmanned autonomous systems, the demand for cameras that can capture images from any direction is also increasing. However, current omnidirectional cameras have bezels and electrical wiring to align the planar light sensor in various directions, which inevitably leads to optical blind spots.

- To create a stereoscopic image sensor without a bezel, the researchers fabricated a flexible electronic device thinner than 10 micrometers (μm) and arranged it into a cubic tetrahedral structure.
- The researchers developed a technique to make a frame with acrylonitrile butadiene styrene copolymer and to bend it with solvent vapor.
- In particular, due to the fluidity of the flexible polymer frame, the stress applied to the electronic device during deformation is reduced significantly, and the durability of the electronic device increases.
- This method of controlling the shape of the deformation after manufacturing the thin film electronic device has advantages of not degrading the performance or resolution, and it can use most existing semiconductor processing equipment.
- Professor Heung Cho Ko explained, “This research presents a technology that can easily transform high-performance electronic devices developed in a two-dimensional plane into a three-dimensional plane without damaging them. We plan to study polyhedral image sensors similar to spheres, such as a dodecahedron or a tetrahedron.”
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