

# Sony unveils 3D and color e-paper displays at this week's SID 2011

May 20 2011, by John Messina

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At the 49th SID International Symposium, Seminar & Exhibition Sony unveiled their new 3D glasses free display and flexible color e-paper.

(PhysOrg.com) -- Sony unveiled a 13.3 inch flexible color e-paper device and two glass free 3D displays. The announcement was made at the 49th SID International Symposium, Seminar & Exhibition which is the world's largest academic conference on display technologies. The conference is being held this week in Los Angeles, CA (USA).

Sony's 13.3 inch flexible color [e-paper](#) has a thickness of 150 microns and weighs 20g and uses a plastic substrate. The e-paper [display](#) has a 13% color gamut (NTSC), a reflectance of 10% and a 100,000:1 contrast ratio.

The display's 800 x 1200 pixel array consists of red, green, blue, and

white sub-pixels. The sub-pixel measures 169 microns x 169 microns and the resolution and gradation of the screen are 75ppi and 16, respectively.

The e-paper display is manufactured by applying adhesive to the glass substrate and attaching a plastic substrate. Amorphous TFTs are then formed on it with a 180°C or lower temperature process. The plastic substrate is then finally removed from the glass substrate.



Sony's 13.3 inch flexible color e-paper.

[Sony's](#) 3D displays come in a 10 inch and 23 inch size and can deliver a 3D image without the use of any special glasses. The method uses a backlight for 3D images positioned between an LCD panel and a backlight for normal 2D images. Switching between 2D and 3D is

accomplished by lighting one of the two backlights.

The backlight for the 3D images are LED's placed on the light guide plate and its edges. On the light guide plate scatter patterns are produced at even intervals in the horizontal direction to direct light to the outside.



Sony's 3D 10 inch and 23 inch displays deliver 3D images without the use of any special glasses.

The 3D effect is produced by the LED light sources being reflected on the scatter patterns to go to the back side of the panel as if lights are partially controlled by using "parallax barriers." The result shows different images to the right and left eye.

Sony's 24-inch 3D LCD display has six viewpoints, and its pixel count is 960 x 360, and its brightness is  $86.1 \text{ cd/m}^2$ . 3D images are best viewed between distances of 80 to 160cm. The 2D mode, the pixel count of the display becomes 1,920 x 1,080 and has a brightness of  $192 \text{ cd/m}^2$ .

Sony states that the new method can be applied to displays between 4 to 30 inches and hopes to commercialize it within a few years.

**More information:**

via [Tech-On e-paper](#), [Tech-On 3D display](#)

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