

# New IGZO oxide semiconductor technology may revolutionize displays

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Sharp Corporation and Semiconductor Energy Laboratory have jointly developed a new oxide semiconductor (IGZO) technology with high crystallinity. This material will enable even higher resolutions, lower power consumption, and higher performance touch screens, as well as narrower bezel widths for LCD display panels used in mobile devices such as smartphones. Details of this new development will be presented at the 2012 SID Display Week Symposium to be held in Boston, USA, on June 5 as part of the annual international conference of the Society for Information Display.

The new IGZO technology imparts [crystallinity](#) in an oxide semiconductor composed of indium (In), gallium (Ga) and zinc (Zn). Compared to current amorphous IGZO semiconductors, it enables even smaller thin-film transistors to be achieved and provides higher performance. This new material is expected to be adopted for use in LCD displays for mobile devices such as smartphones where the trend toward higher screen resolutions is growing increasingly strong. Further, it can also be adapted for use in organic EL displays which hold out high expectations for the future. Although challenges to commercialization remain in terms of both service life and production, the two companies will continue to push ahead with R&D in anticipation of future market needs.

With the aim of early commercialization LCD displays using this new IGZO technology, the two companies will also be pursuing R&D to expand the use of this material in non-display devices and to develop

applications other than displays in the future.

Provided by Sharp

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