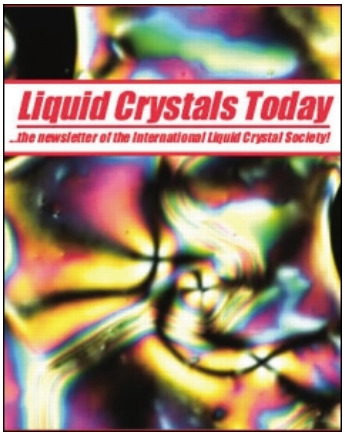

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Wide angle viewing on a par with conventional CRTs

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Company NEWS

Wide angle viewing on a par with conventional CRTs

Hitachi develops 13.3 inch 'Super' TFT–LCD with wide viewing angle

Tokyo 16 October 1995. Hitachi Limited has developed a 13.3 inch thin-film transistor (TFT) liquid crystal display employing a new, wide-viewing-angle 'super' TFT technology, thus overcoming a major drawback of conventional TFT–LCDs. The new TFT–LCD is XGA-compatible (1024 × 768 pixels) and capable of displaying 260 000 colours.

The new TFT display provides a vertical and horizontal viewing angle of 140 degrees. This is far wider than that of conventional TFT displays, which are restricted to about 40 degrees vertically and 90 degrees horizontally. In a conventional TFT display, two layers of TFT substrates are set crosswise to each other and separated by the liquid crystal, which is twisted through 90 degrees. Transparent electrodes on each substrate are used to apply an electrical field to untwist the liquid crystal, but when the molecular orientation is not fully perpendicular to the substrates, the viewing angle is restricted. This causes the contrast and colour to vary depending on the viewing angle, a problem that has been accentuated as LCDs have become larger and able to display more colours.

With Hitachi's new 'super' TFT display, electrodes on the lower substrate are used to apply an electrical field that imparts a horizontal orientation to the liquid crystals [1], ensuring that the plane of rotation is parallel to the substrate plane. The result is a display that stays bright and clear over a wide range of viewing angles, as illustrated in the photograph.

***Top* – 'super' TFT–LCD viewed at 30 degrees.**
***Bottom* – conventional TFT–LCD viewed at 30 degrees.**

[1] BAUR, G., KIEFER, R., KLAUSMANN, H., WINDSCHEID, F., 1995, *Liquid Crystals Today*, 5(3), 13.

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LIQUID CRYSTALS ON THE WORLD-WIDE WEB

The International Liquid Crystal Society now has a presence on the World-Wide Web through a server established at the Liquid Crystal Institute, Kent State University, Ohio, USA. The address of the server is:

http://alcom.kent.edu/ILCS

Information available at present includes members' addresses, forthcoming meetings and positions vacant. It is expected that additional material will become accessible in the future.

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