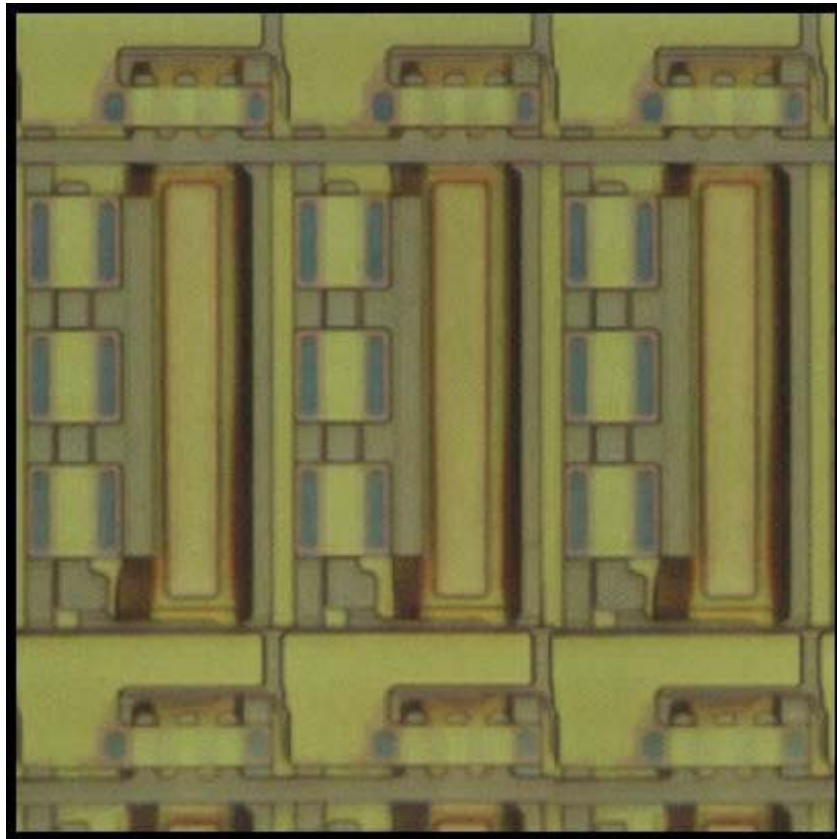




FPD Technology Development Report



Q3'08

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Table of Contents

List of Figures ii

List of Tables iii

1.0 Introduction 1

2.0 LCDs..... 3

3.0 OLEDs 9

4.0 Flexible Displays..... 13

5.0 Other Display Technology & News 23

List of Figures

Figure 2.1	Comparison of Conventional Protrusion Base MVA to AMVA-Mobile	3
Figure 2.2	SEM Image of the UV-Cured Alignment Layer	4
Figure 2.3	Various Approaches to Laser Based Black Matrix Patterning.....	6
Figure 2.4	BM Formed by Through Glass Assist Liquid	7
Figure 4.1	All Solution-Processed OTFT Backplane Schematic.....	13
Figure 4.2	Four Gray Scale Display with Motion Video.....	14
Figure 4.3	Double Sided Backplane OFT Design	15
Figure 4.4	TFT LCD Components Manufactured by Roll-To-Roll Processes on Flexible Substrates.....	19
Figure 5.1	GLV Device Structure	23
Figure 5.2	FET Proprietary Emitter Fabrication Technology	24
Figure 5.3	FET vs. LCD Panel Construction	25
Figure 5.4	PDP Electrode Fine-Pattern Printing Roll	28

List of Tables

Table 4.1 Reflective Display Media Technology 17
Table 4.2 Transmissive/Emissive Display Media Technology 17
Table 4.3 TFT Array Technology 18

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1.0 Introduction

This edition of the *Technology Development Report* reviews the latest developments in FPD technology and manufacturing. Information has been gathered and analyzed from a variety of public sources as well as a lot of original DisplaySearch research over the past quarter. Articles and news covering equipment, materials, processes and more are listed under the relevant display technology category and then alphabetically according to the main company or topic they reference. Display categories in this report include

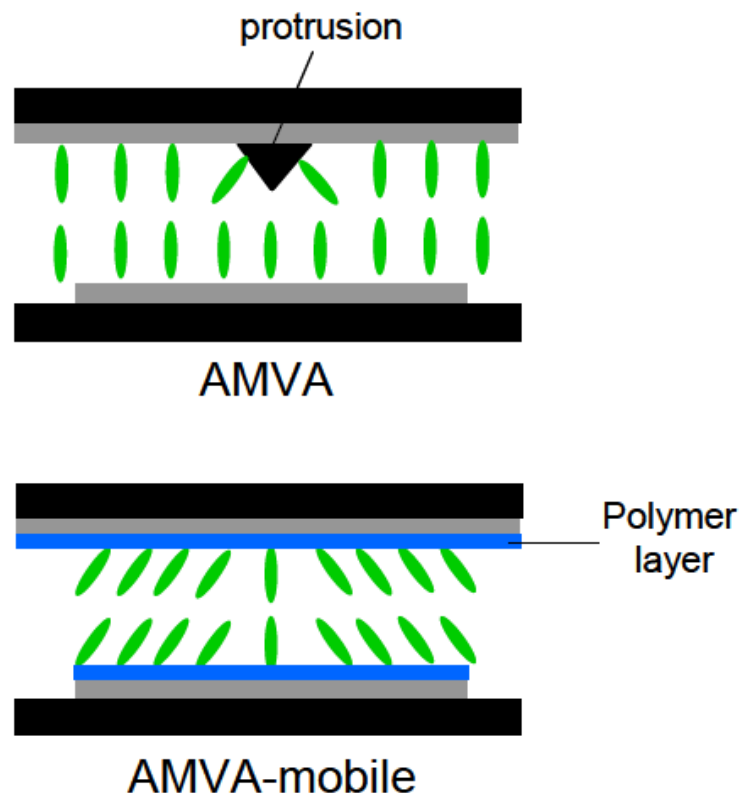
- LCDs
- OLEDs
- Flexible Displays
- Other Display Technology & News

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2.0 LCDs

Increasing LCD transmittance has become one of the most important goals of panel manufacturers in order to reduce the number of backlight lamps as well as power consumption and panel costs. Panel manufacturers are pursuing different approaches to achieve this, such as COA (Color filter On Array), SHA (Super High Aperture) pixel designs, reduced BM thickness, optical alignment and others. At **SID** this year, **AUO** reported the development of a "protrusion-less" MVA LCD that not only increases transmittance, but also reduces cost and process time. The company is calling the technology Advanced MVA Mobile Technology. It can achieve fast switching of 8 ms and a high contrast ratio of 600:1 without rubbing or protrusions via a UV-cured polymer alignment layer. Typically, wide viewing angle type MVA panels use a protrusion to aid alignment of the LC; however, protrusions require an extra mask step in the color-filter process, which drives up cost and increases manufacturing time. Furthermore, the inactive area of the protrusion restricts transmittance of the panel and creates some light leakage that reduces the dark level and contrast ratio. Polymer stabilization was used by AUO in its AMVA Mobile Technology to provide appropriate LC pre-tilt angles for effective LC molecule alignment.

Figure 2.1 Comparison of Conventional Protrusion Base MVA to AMVA-Mobile



Source: AUO

In the case of protrusion-based MVA, when voltage is applied in-plane propagation limits response time. In AMVA Mobile, by directly controlling every LC molecule at the polymer layer, faster switching times are achieved.