

УДК 004.353.2

Grondzal A., Volynets V.

Ternopil Ivan Pul'uj National Technical University

PROSPECTS OF DISPLAYS TECHNOLOGIES FOR MOBILE DEVICES

Supervisor: Perenchuk O., Yatsyshyn V.

Грондзаль А., Волинець В.

Тернопільський національний технічний університет ім. І. Пулюя

ПЕРСПЕКТИВИ РОЗВИТКУ ДИСПЛЕЇВ ДЛЯ МОБІЛЬНИХ ПРИСТРОЇВ

Науковий керівник: Перенчук О.З., Яцишин В.В.

Keywords: display, technology. Ключові слова: дисплей, технології.

In the high-tech world, the mobile phones and different handheld gadgets are becoming an indispensable and inseparable object in our lifetime. Modern world can't be imagined without little helpers. The more possibilities and advantages of a gadget we obtain the more pleasure and gain we get. The quality of graphical representation depends on physical characteristics of used materials for device. New researches in physics of materials can give unseen improvements which can be implemented already tomorrow.

The handsets are gaining its importance in the today's world because of their communication features, which attribute as a way of life statement. Therefore, it can be said that mobile phones have turned out to be one of the most popular additions to style statements. These devices can be seen out among people of all ages, all over the world. Many people consider that without mobile phone, they cannot imagine their life; both in terms of necessity and in terms of a fashion statement. Every news, messages or information generally passes through these small devices. The most important part of communication is provided by the display. Display technology plays a critical role in how information is conveyed. As a picture is worth a thousand words, display technology simplifies information sharing.

Since its commercialization in 1922 up until the late 20th century, Cathode Ray Tube technology (CRT) has dominated the display industry. However, new trends such as the desire for mobile electronics have increased demand for displays that rival and surpass CRTs in areas such as picture quality, size, and power consumption. One of the latest devices likely to replace CRTs is Liquid Crystal Displays (LCD) due to their lightweight, low operating power, and compact design. LCDs allowed devices such as digital watches, cell phones, laptops, and any small screened electronics to be possible.

Other contenders for leadership in display technology are Organic LEDs, DLP technology, Plasma Displays, Field Emission Displays, and Electronic Paper. Organic LEDs, being composed of light emitting polymers, can emit their own light to offer thin and power-saving displays. Using many microscopic mirrors, DLP technology can generate large bright projections on screens with up to 35 trillion colors. Plasma Displays generate excellent quality images on very large screens. Field Emission Displays can produce high resolution images like CRTs without the bulky appearance. The makers of Electronic Paper are trying to replace print by developing displays with many paper-like properties.

New technologies give us great perspectives in lower costs of production and quality improvements that satisfy modern demands of mobile displays. There is huge interest in the development of mobile technology for consumers and producers. Therefore, it is important to investigate this subject.