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器件物理及器件制备技术

场致发射显示器图像低灰度增强技术

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**摘要:** 介绍了FED子行驱动灰度调制视频显示系统的工作原理。针对行扫描脉冲存在的上升沿和下降沿时间导致列驱动脉冲无效使屏无法发光,造成低灰度图像数据丢失影响图像显示效果,通过调整各子行的显示顺序,调整时序,消除低灰度信息损失,改善图像质量。同时针对FED显示屏响应时间造成的低灰度损失,通过时间补偿的方法对低灰度损失进行校正,改善了图像的显示质量。结合人眼的视觉特性,将基于子行驱动图像低灰度增强技术应用于FED显示系统中,使视频图像显示的对比度有所提高,画质更为细腻,更加接近人眼的视觉效果。

**关键词:** 场致发射显示器 子行驱动 低灰度图像增强 视频显示

## Field Emission Display Image Enhancement Technology

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**Abstract:** The technology principle of sub-row driving gray-scale modulation was introduced and was used in FED video displaying system. The low grey enhancement modulation focuses on the problem that the rising edge and falling edge duration during the row scanning pulse will result in the invalid column driving pulse and no luminescence screen, it causes the data loss of the low grey image which affects the display effect. By adjusting the display order of those sub-rows, and the timing order, eliminating the low grey information loss, the image quality can be improved. At the same time, because the low grey loss caused by the reaction time is existed in the display panel, the low grey loss is modified by the time compensation, so that the display quality of the image is improved. Combined with the human visual characteristics, the image enhancement technology based on the sub-row driving was proposed to improve the video image quality, and applied to the sub-row driving of FED, making the contrast of the video image increased, the image quality more delicate, closer to the human visual effect.

**Keywords:** field emission display sub-row driving low grey image enhancement video displaying

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