In this paper we propose the electrode of the Patterned Vertical Aligned (PVA) LC cell [1] for high transmittance. We use the ‘TechWiz LCD’ for calculation of the director configuration and optical characteristics to ensure the results of the proposed electrode structure. Normally, the transmittance of PVA LC cell is depended on the shape of the electrode and cell gap. In this work, the width of gate line and data line of the improved electrode design is equal to that of conventional PVA mode. Instead, we modified the shape of the common and pixel electrode in order to decrease the area of the defect. Figure 1 shows the comparison of the calculated optical transmittance between the conventional PVA LC cell and the PVA cell with the proposed electrode structure. From the figure, we can confirm that the optical loss due to the variation of the retardation of the LC cell around electrode can be definitely decreased by the proposed electrode. Detail results on the optical characteristics will be discussed later.

Acknowledgement This work was supported in part by the Second Brain Korea 21 Program and partly by University IT Research Center Project under supervision of IITA


Figure 1 comparison of the calculated optical transmittance by; (a) the conventional electrode (b) the proposed electrode