Abstract Submitted
for the MAR17 Meeting of
The American Physical Society

Switching of liquid crystal devices between reflective and transmissive modes HUI-CHI LIN, CHIH-HUNG WANG, Department of Electro-Optical Engineering, National Formosa University — Transflective liquid crystal displays (LCD) are commonly known that each pixel is divided into reflective (R) and transmissive (T) subpixels. The R mode uses ambient light, while the T mode utilizes a backlight to display images. However, the division of the pixel decreases the light efficiency and the resolution. This study demonstrates a gelator-doped liquid crystal (LC) devices, that is switchable between R and T modes, without sub-pixel division. The R and T modes are designed to have bend configurations with phase retardation of $\pi/2$ and π, respectively. The phase retardation of a LC device can be varied and fixed by the thermoreversible association and dissociation of the gelator molecules. It is believed that the proposed device is a potential candidate for portable information systems.

Hui-Chi Lin
Department of Electro-Optical Engineering, National Formosa University

Date submitted: 11 Nov 2016 Electronic form version 1.4