

EJ11.

**INVESTIGATION OF THE APPLICABILITY OF CONDUCTING POLYMERS
FOR THE FABRICATION OF NOVEL LIQUID CRISTAL DISPLAY DEVICES**

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The alignment of liquid crystal molecules in the desired orientation is the major requirement in liquid crystal display technology. Conventionally, a very thin film of an inert polymer coating on the conducting glass plates has been used as the template for the planer alignment of liquid crystal molecules. However, we found that conducting polymer, polyaniline, is an excellent template for the planer alignment of both nematic and ferroelectric liquid crystal molecules. Further, we have devised a chemical method to covalently attach polyaniline onto ordinary glass surface.

Recently, we developed a novel chemical method for producing colourless highly conducting water soluble thin polyaniline films on glass substrate. We confirmed the formation of polyaniline films by recording cyclic voltammograms. Further, we found that this colourless polyaniline is highly ionic conducting from the polarization test. The liquid crystal cells prepared using this colourless polyaniline coated glass substrates showed excellent planer orientation under polarizing microscope. The polymer will not peel-off from the glass surface even after excessive mechanical rubbing. This colourless polyaniline has a great potential application in liquid crystal display technology, particularly, to obtain high contrast liquid crystal displays.