

UVを用いた液晶ポリマーの表面改質

渡辺 充広*, 飯森 陽介**, 松井 貴一**, 石田 卓也*, 杉本 将治***, 本間 英夫****

Surface Modification of Liquid Crystal Polymers Using UV Irradiation

Mitsuhiro WATANABE*, Yosuke IIMORI**, Kiichi MATSUI**, Takuya ISHIDA*, Masaharu SUGIMOTO* and Hideo HONMA***

* 株式会社関東学院大学表面工学研究所 (〒239-0806 神奈川県横須賀市池田町4-4-1)

** 関東学院大学大学院 (〒236-8501 神奈川県横浜市金沢区六浦東1-50-1)

*** 関東学院大学工学部 (〒236-8501 神奈川県横浜市金沢区六浦東1-50-1)

*Kanto Gakuin University Surface Engineering Research Institute (4-4-1 Ikeda-cho, Yokosuka-shi, Kanagawa 239-0806)

**Graduate School, Kanto Gakuin University (1-50-1 Mitsuura-Higashi, Kanazawa-ku, Yokohama-shi, Kanagawa 236-8501)

***Faculty of Engineering, Kanto Gakuin University (1-50-1 Mitsuura-Higashi, Kanazawa-ku, Yokohama-shi, Kanagawa 236-8501)

Abstract

Achieving the high performance required today from electronic devices such as cellular phones and personal computers requires greatly increased signal processing speed. This means that a substrate material with excellent electrical properties also is required. One such material is liquid crystalline polymer (LCP). Generally, a high alkaline solution and a dry process are used to pre-treat the LCP, to form a conductive layer. However, this pre-treatment does not create good adhesion strength. In this study, we attempted to form a conductive layer with good adhesion strength by employing a surface modification technique that used UV irradiation. The results showed that an adhesion strength of about $0.8 \text{ kN} \cdot \text{m}^{-1}$ can be achieved under optimum conditions. The surface roughness after surface modification was about $0.08 \mu\text{m}$ in Rz. This surface was very smooth, compared with that produced by the conventional method.

Key Words: Liquid Crystal Polymers, UV Irradiation, Surface Modification, FPC