한국고분자학회

2003년도 정기총회(춘계) 및 연구논문 발표회

일정표

일 시: 2003년 4월 11일(금) ~ 12(토)
장소: 연세대학교
2PS-152

Synthesis and Optical Properties of New Photopolymer System by using Photoreactive Binders (I)

유학, 김재호, 이진준, 백상원, 최동훈
경희대학교 환경응용학과
(ddchoi@ehu.ac.kr)

Photopolymer is an attractive holographic material for many applications such as data storage, micro-optical elements, optical connecting, display application, and other information processing. In this study, the diffraction grating in novel photopolymer system prepared with photoreactive polymer as a binder was fabricated by optical interference method. Spectroscopic study revealed the chemical bond between the polymer binder and newly formed polymer in part. The dynamic behaviors of diffraction efficiency with the exposure intensity of pump beam were studied in detail. The temperature dependence of the diffraction efficiency was also investigated to evaluate the thermal stability of newly formed diffraction gratings.

2PS-153

All-polymer based field effect transistors using electrically conducting polymers

이영철, 이성범, 이승욱, 강현성, 강현숙, 주현수, A.J. Epstein*, 이준영
성균관대학교 유기소재공학과, *고려대학교 물리학과, *Department of Physics, The Ohio State University
(jylee7@skku.ac.kr)

Recently, there have been increasing interests in all organic transistor which can be used as a drive system of flexible and transparent electronic system such as active-matrix of LCD, E-paper. We successfully fabricated All-polymer FET (field effect transistor) by our photolithographic patterning technique of electrically conducting polypyrrole (PPy) or poly(3,4-ethylenedioxythiophene) (PEDOT) which involves no printing of a conducting polymer. The All-polymer FET (field effect transistor) whose substrate, insulating layer, active layer, and electrodes were composed of the organic polymeric materials, thus the device showed fairly high transmittance, flexibility and good electrical contact. The FETs were fabricated at room temperature as the following procedure applying the patterning method. The rectangular gate electrode was first formed on a plastic substrate by patterning of electrically conducting polymers. Transparent photocrosslinkable polymers such as poly(vinyl cinnamate) or epoxy/NMA polymers as insulating layer were spin-coated on the top of the gate electrode. Another narrow line electrically conducting pattern working as not only source-drain electrodes but also active layer was formed on the top of the insulating layer in the perpendicular direction to the gate electrode. We found that p-type FETs work in a depletion mode upon applying positive gate voltage. We estimated on/off ratio, and trans-conductance by measurement of the drain-source current as a function of gate bias. The response time is relatively slow, suggesting that ionic motion is involved in the phenomenon.