

PAPER DETAILS

TITLE: INVESTIGATION OF STRUCTURAL AND OPTICAL PROPERTIES OF SEMICONDUCTOR
POLYMER POLY (5-(2-ETHYLHEXYLOXY)-2-METHOXY-CYANOTEREPHTHALYLIDENE)

AUTHORS: Hatice KANBUR ÇAVUS,Hatice ARI

PAGES: 13-13

ORIGINAL PDF URL: <https://dergipark.org.tr/tr/download/article-file/303842>

Special Issue

BSW2016

Fifth Bozok Science Workshop: Nano Carbon Materials and
Their Applications

Bozok Science Workshop 2016, Yozgat, April 28-29, 2016.

INVESTIGATION OF STRUCTURAL AND OPTICAL PROPERTIES OF
SEMICONDUCTOR POLYMER POLY
(5-(2-ETHYLHEXYLOXY)-2-METHOXY-CYANOTEREPHTHALYLIDENE)Hatice KANBUR ÇAVUŞ^{*1}, Hatice ARI²¹ Physics Department, Faculty of Art and Science, Bozok University, Yozgat/TURKEY.² Chemistry Department, Faculty of Art and Science, Bozok University, Yozgat/TURKEY.

Abstract: Nowadays, polymer electronic devices can be used in a wide range of applications. Especially, conjugated polymers have been studied due to their unique electronic and optical properties. These polymer materials are used in many fields such as organic light emitting diodes (OLEDs), Schottky diodes, organic solar cells, organic field effect transistors (FETs), photodetectors, detection systems and batteries. In this study, among conjugated polymers (Cyano-Polyphenylenevinylene, CN-PPV polymers group) poly (5-(2-ethylhexyloxy)-2-methoxy-cyanoterephthalylidene) was investigated (Figure 1) because this polymer has important properties such as semiconductivity and photoconductivity. We have investigated structural and optical properties of this polymer by using IR, Raman and UV measurements. As a result, IR and Raman spectra peaks of polymer were found that correspond to groups in the structure. In addition, the direct and indirect band gaps of the polymer from UV measurement were obtained as 2.5 and 2.22 eV, respectively.

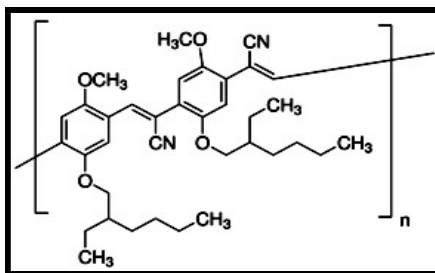


Figure 1. Poly(5-(2-ethylhexyloxy)-2-methoxy-cyanoterephthalylidene)

Keywords: Polymers; Optical properties; Band gap; Raman spectra; IR spectra.

^{*} Corresponding author; Tel.: +(90) 555 8412091 , E-mail: hatice.kanbur@bozok.edu.tr