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Synthesis and Properties of 4-Thieno[3,2-b]thiophene-3-yl-benzonitrile (TT-CN) for ECD Applications

ECD Uygulamaları için 4-Tiyeno [3,2-b]tiyofen-3-il-Benzonitril (TT- CN) in Sentezi ve Özellikleri

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ABSTRACT

Synthesis of conjugated organic molecules, having electronic and optoelectronic material properties, have gained much importance for use in organic light emitting diodes (OLEDs), organic field effect transistors (OFETs), photodiodes, lasers, and solar cells, and especially recently, for electrochromic devices. Based on the previous studies, it has been suggested that thienothiophene (TT) and its derivatives have displayed properties that are suitable for applications of electrochromic devices.

In this study, we have investigated the properties of 4-thieno[3,2-b]thiophene-3-ylbenzonitrile (TT-CN) synthesized by our research group for applications in electrochromic devices.

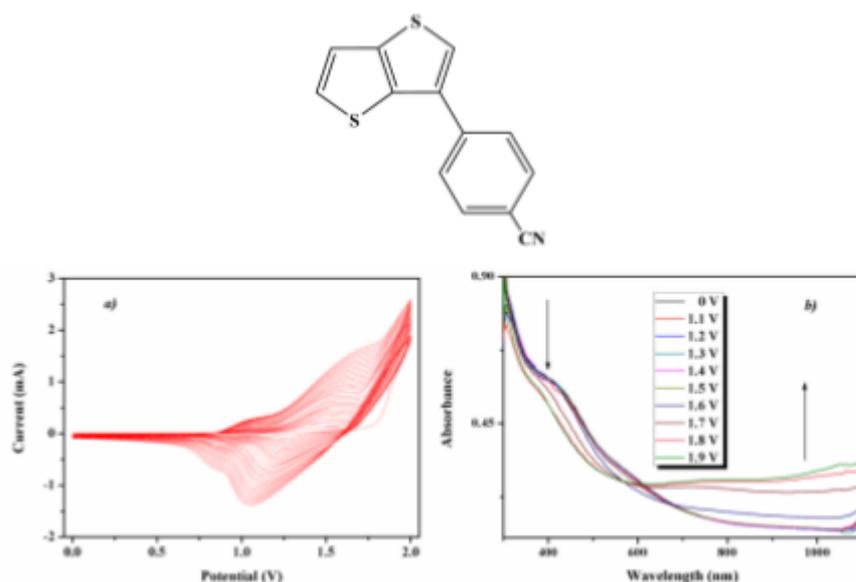


Figure 1: a) Electrochemical polymerization of TT-CN into ITO electrode, b) CV-UV measurements of p(TT-CN) synthesized.

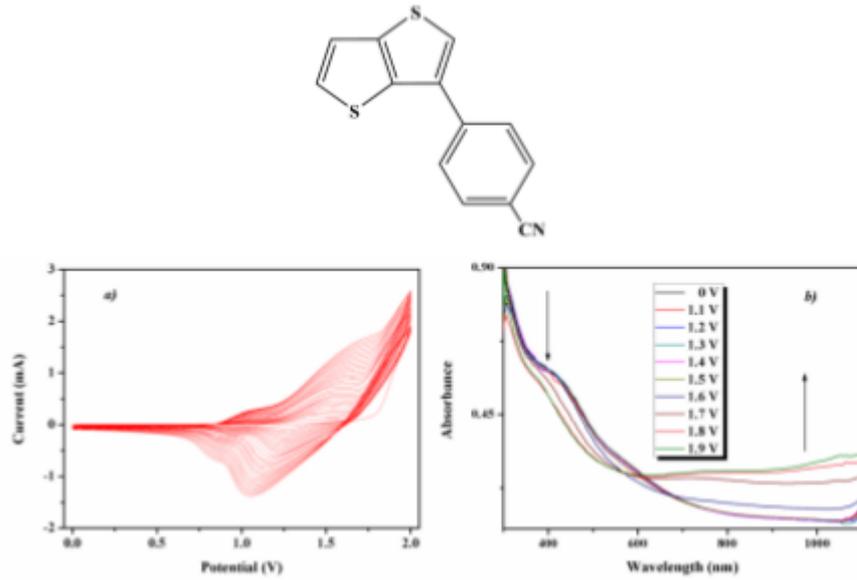
Keywords

Thienothiophenes, electrochemical polymerization, electrochromic devices.

ÖZET

Elektronik ve optoelektronik materyal özellikleri olan konjuge organik moleküllerin sentezi; organik ışık saçan diotlar (OLED), organik alan etkili transistörler (OFET), fotodiyot, laser ve güneş pili, özellikle son zamanlarda elektrokromik cihazlar için önem kazanmaktadır. Önceden yapılan çalışmalara dayanarak; tianotiyofen (TT) ve tianotiyofen türevleri elektrokromik cihazların uygulamaları için uygun özellik göstermiştir.

Bu çalışmada; elektrokromik cihazların uygulamaları için grubumuzun sentezlediği 4-Tiyeno [3,2-b]tiyofen-3-nil-benzonitril (TT-CN) in özelliklerini inceledik.



Şekil 1: a) TT-CN nin İTO elektrod üzerine elektrokimyasal polimerizasyonu, b) p(TT-CN) nin CV-Uv ölçümleri .

Anahtar Kelimeler

Tiyenotiyofenler, elektrokimyasal polimerizasyon, elektrokromik cihazlar.

Kaynaklar / References

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- [2] A. Capan, T. Ozturk, *Synthetic Metals*, 2013.