Abstract

Pentacene based Organic Thin Film Transistors (OTFTs) analysis are performed for bottom and top contact structures using Silvaco ATLAS two dimensional finite element dependent numerical device simulations. Various OTFT structures are simulated using organic TFT display module. The transistor sizes for all the proposed structures are kept same, for valid comparison among them. The characteristic parameters of organic transistors are evaluated from output and transfer characteristics of different structures. Characteristics parameters have been
evaluated in terms of mobility, on/off current ratio, threshold voltage, Sub-threshold slope, transconductance and drain current. OTFTs are considered as promising devices for future development of low-cost and large-area electronics applications such as flexible displays and sensors. Further this paper thoroughly discusses the overall performance and applications of OTFTs in various fields.

References

- Kumar, Brijesh, Kaushik, B. K., Negi, Y. S. Mittal, Poornima and Mandal, Amritakar. 2011. Organic Thin Film Transistors Characteristics Parameters, Structures and their

Index Terms

Computer Science

Keywords

DNA Sensor  Organic Light Emitting Diode  Organic Thin Film Transistor  Pentacene