abstract
This thesis elaborates the application of carbon nanotubes (CNTs) and it is discussed in two parts. In the first part of the thesis, two types of CNTs inks for inkjet materials printer are prepared. They are both chemical stable and printable, effective and easily made. The sheet resistance of printed films decreases exponentially as the number of layers increases. In the second part of this study, CNTs/ZnO composite structures are fabricated to understand the electronic and optical properties. The materials were deposited by two different methods: drop-drying and RF magnetic sputtering system on flexible polymer substrates. To further increase the conductivity of the various layers of deposited CNTs films, electrical and optical characterizations are also done. This study establishes CNTs as a multi-functional semitransparent conductor, which can be deposited at room-temperature with other transparent conductive oxide (TCO) composites for application in flexible electronics and printed circuit and sensors.