

# Synthesis and study of organic semiconductor for charge transfer complexes

Shar S. Al-Shihry<sup>\*1</sup>, M. Gaber<sup>1</sup> and F. A. Abdel-Wahab<sup>2</sup>

<sup>1</sup>Department of Chemistry, <sup>2</sup>Department of Physics,  
College of Science, King Faisal University,  
Hofuf 31982 Eastern Province, Saudi Arabia

## Summary

The solid charge transfer complexes of 2-amino-5-mercapto-1,3,4-thiadiazole with some 1,4-benzoquinone namely 2,3-dichloro-5,6-dicyano-benzoquinone (DDQ), chloranil (CHL), bromanil (BRL) and chloranilic acid (CHLC) were prepared. The formation of these complexes has been studied by spectral (Uv-Vis. and IR) and electrical measurements. The positive temperature coefficient of the electrical conductivity is evidence for the semiconducting character of the CT complexes. The energy gaps ( $E_g$ ) for the conduction and the charge transfer excitation energies ( $E_{CT}$ ) have been calculated.

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\* Corresponding author.