The complexes Ni(dmeds)(dmit), Ni(dmedt)(dmit), Ni(dpedt)(dsit), Ni(dpedt)(dmit), and Ni(dcdt)(dmit) (where dmeds is dimethylethylenediselenolate, dmedt is dimethylethylenedithiole, dpedt is diphenylethylenedithiolate, dcdt is 1,2-bis-decylsulfanyl-ethene-1,2-dithiolate, dmit is 1,3-dithiol-2-thione-4,5-dithiolate, and dsit is 1,3-dithiol-2-thione-4,5-diselenolate) were prepared and characterized. The new complexes exhibit semiconducting behavior, with band gap values around 0.8 eV.

Key words: Metal 1,2-Dichalcogenolenes, Single-component Semiconductors