Solution and solid-state NMR studies of thiourea, selenourea, N,N-dimethylselenourea and their Ag(I) complexes. Wazeer, Mohammed I. M.; Isab, Anvarhusein A.; Ahmad, Saeed. Department of Chemistry, King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia. Canadian Journal of Analytical Sciences and Spectroscopy (2006), 51(1), 43-48. Publisher: Canadian Society for Analytical Sciences and Spectroscopy,

Abstract

Silver(I) complexes of thiourea (TU), selenourea (SeU), N,N-di-Me selenourea (DMSeU) were prepd. These complexes were characterized by elemental anal. and NMR (1H, 13C, 77Se and 109Ag) spectroscopy. On complexation, an upfield shift in >C:S and >C:Se resonances of thiones and selenones in 13C NMR and low-field shifts 77Se NMR are consistent with the sulfur and selenium coordination to metal ion. The principal components of the 77Se shielding tensors were detd. from solid-state NMR data of Ag-DMSeU complexes. The solid state 13C NMR for various 1:1, 1:2, 1:3 and 1:4 ratio of Ag(I):TU indicate that TU prefers to bind to Ag(I) only in 1:1 and 1:4 ratios and other are mixt. of these two ratios.