

**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.  
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**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 ( $^1\text{H}$ ,  $^{13}\text{C}$ ,  $^{77}\text{Se}$  and  $^{109}\text{Ag}$ ) spectroscopy. On complexation, an upfield shift in  $>\text{C}:\text{S}$  and  $>\text{C}:\text{Se}$  resonances of thiones and selenones in  $^{13}\text{C}$  NMR and low-field shifts  $^{77}\text{Se}$  NMR are consistent with the sulfur and selenium coordination to metal ion. The principal components of the  $^{77}\text{Se}$  shielding tensors were detd. from solid-state NMR data of Ag-DMSeU complexes. The solid state  $^{13}\text{C}$  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.