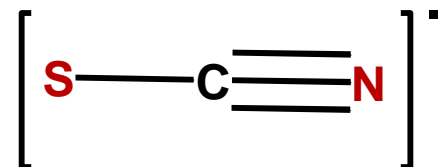
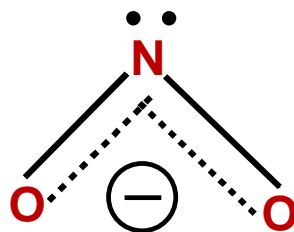
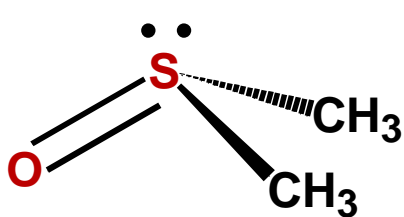


## ESPERIENZA 2

### Sintesi di complessi di metalli di transizione con **leganti ambidentati**: il dimetil solfossido e lo ione nitrito

Def.: si definiscono **ambidentati** quei leganti che presentano **due atomi potenzialmente donatori**.

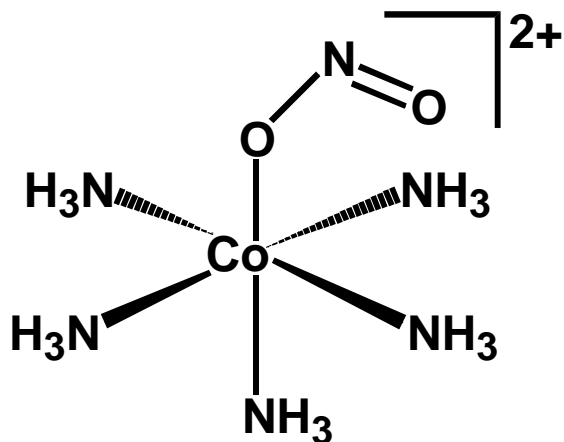
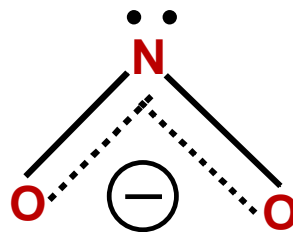


Fattori **elettronici** o **sterici** o **entrambi** indirizzano la coordinazione attraverso uno dei due atomi donatori.

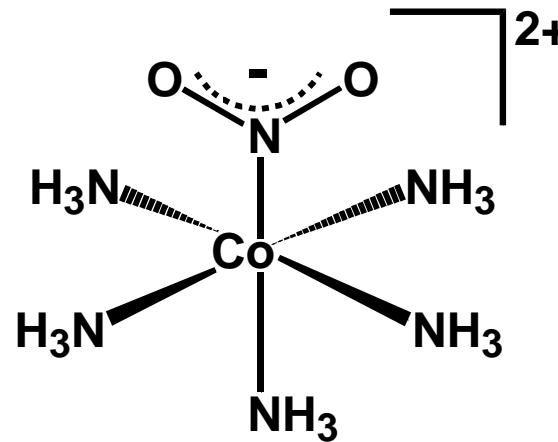
Si possono fare delle previsioni sull'atomo donatore utilizzando la teoria **HARD and SOFT, ACIDS and BASES**.

Spettroscopia **IR** allo stato **solido**, **UV-Vis.** ed **<sup>1</sup>H NMR** in **soluzione** sono diagnostiche per riconoscere il modo di legame dei leganti ambidentati.

## Lo ione nitrito



***nitrito***  
***prodotto cinetico***  
***rosa salmone***



***nitro***  
***prodotto termodinamico***  
***ocra***

Diversa natura dei legami

Diverso colore

Ottaedri,  $d^6$ , basso spin

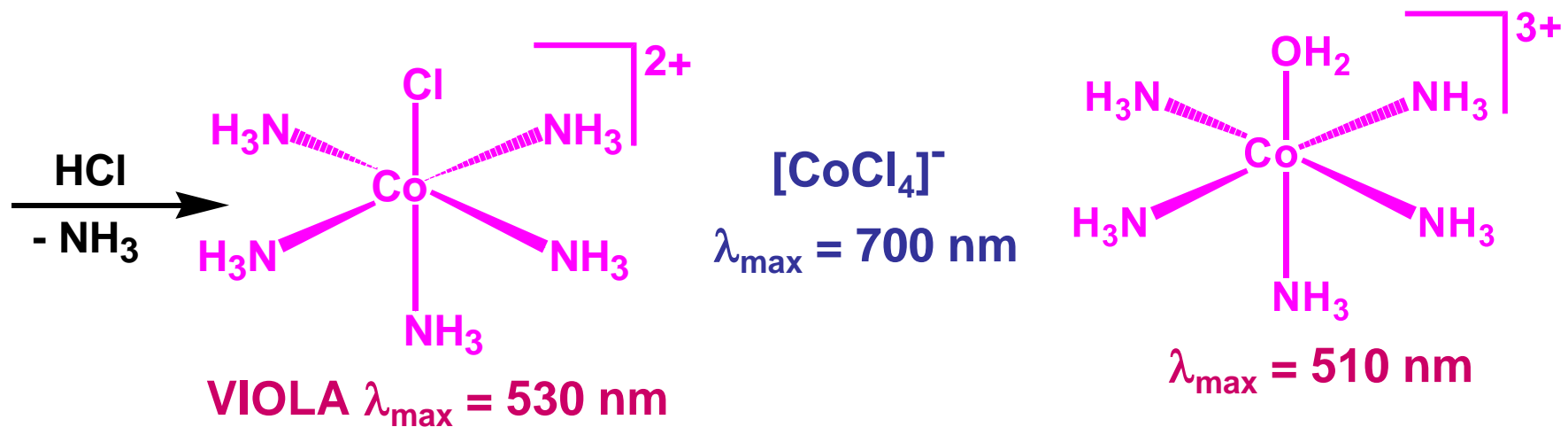
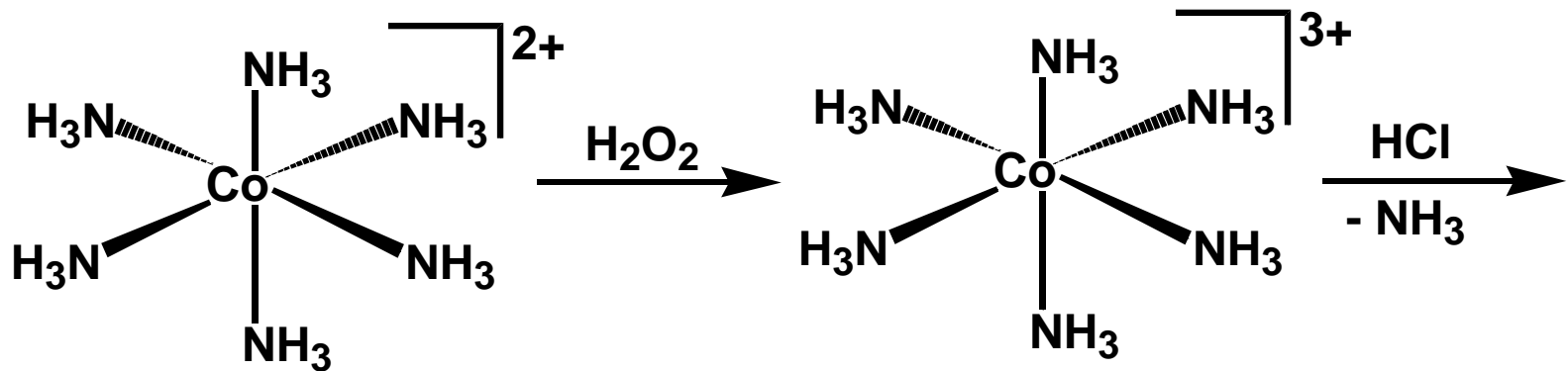
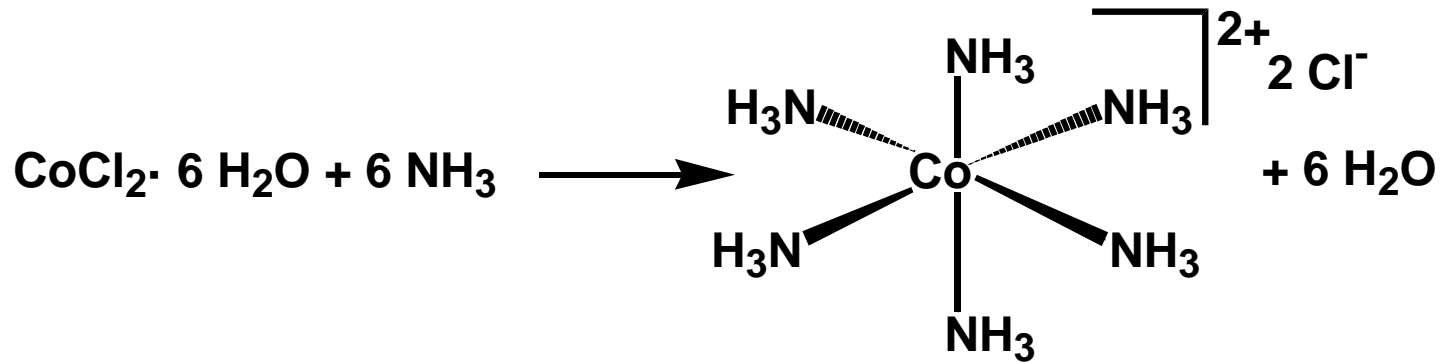
diamagnetici

IR

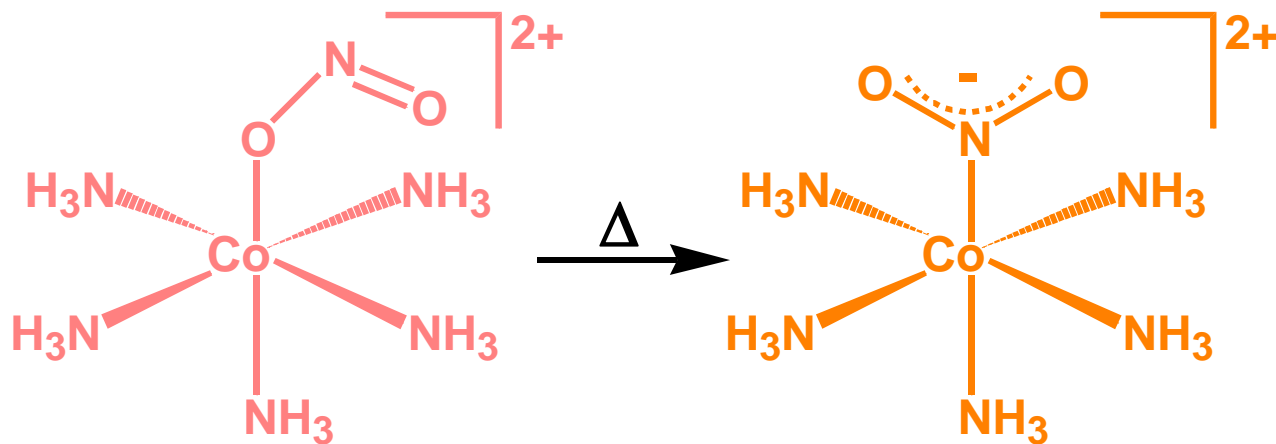
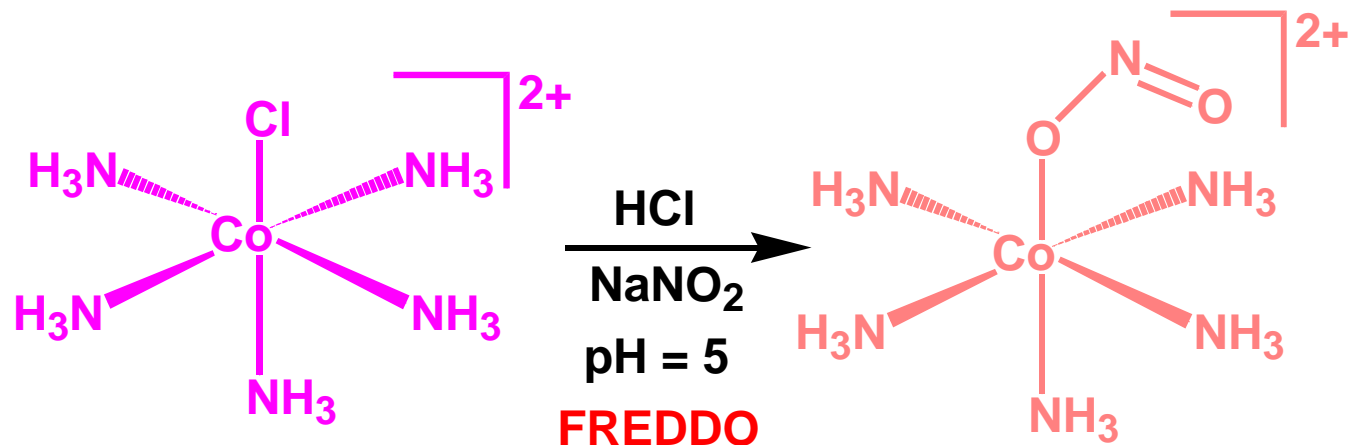
UV-Vis.

NMR

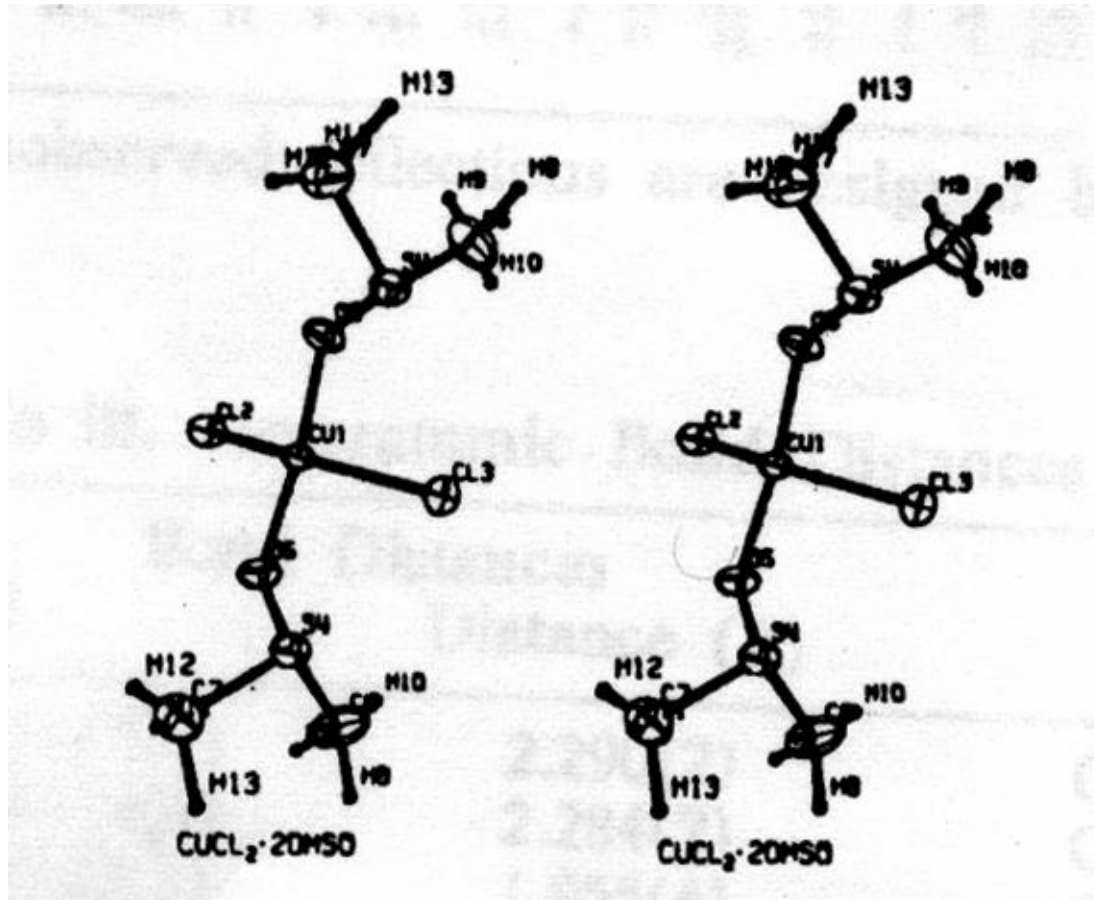
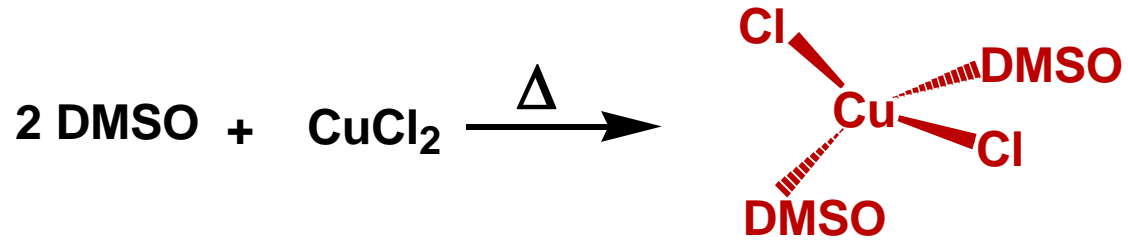
## Sintesi dei complessi con lo ione **nitrito**



## Sintesi dei complessi con lo ione nitrito



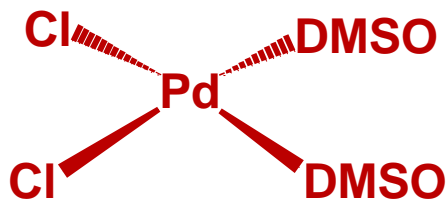
## Sintesi di $[\text{CuCl}_2(\text{DMSO})_2]$



Geometria a sella,  $d^9$

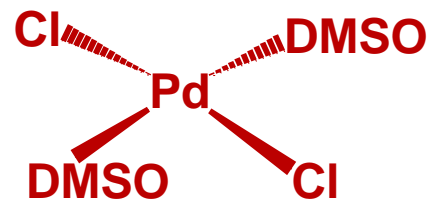
paramagnetico

# Studio di $[\text{PdCl}_2(\text{DMSO})_2]$

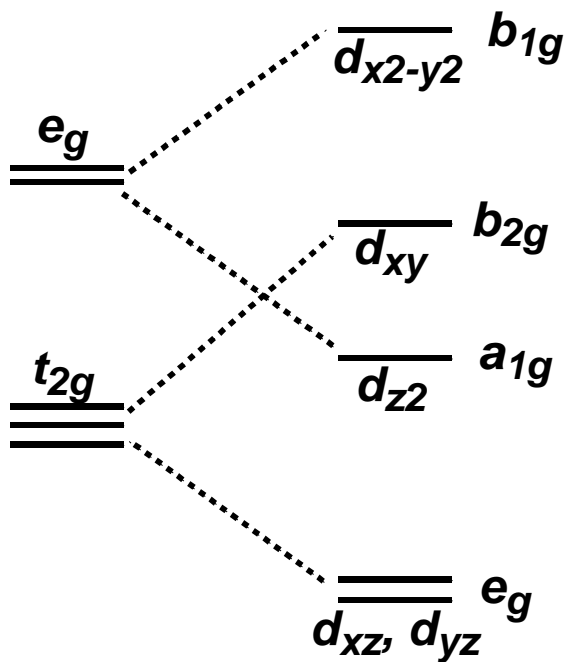


*cis*

o



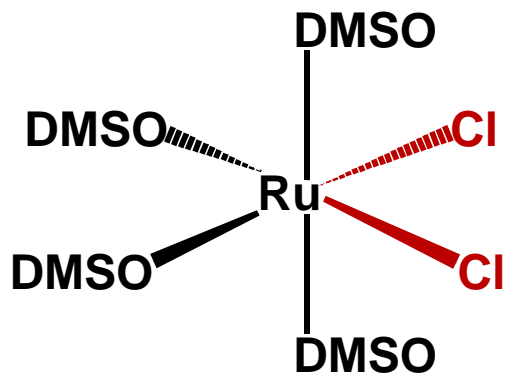
*trans*



Planare quadrato  
 $d^8$

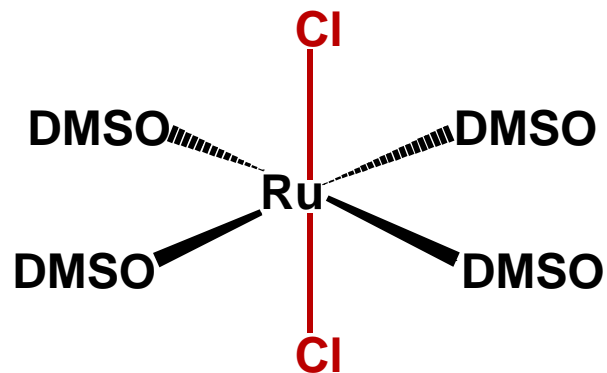
diamagnetico

# Studio di $[\text{RuCl}_2(\text{DMSO})_4]$

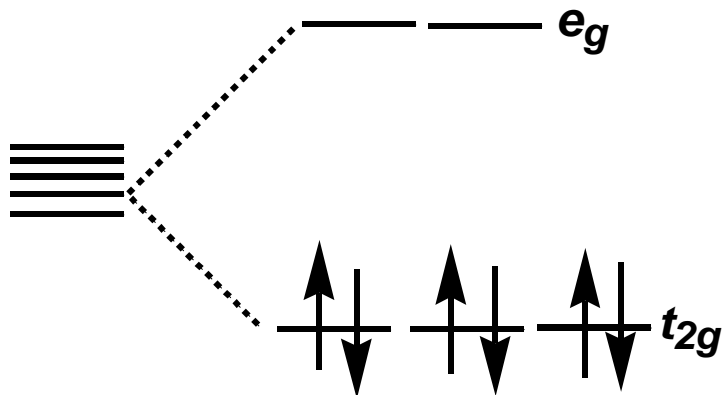


*cis*

o



*trans*



Ottetraedro,  $d^6$ , basso spin

**diamagnetico**