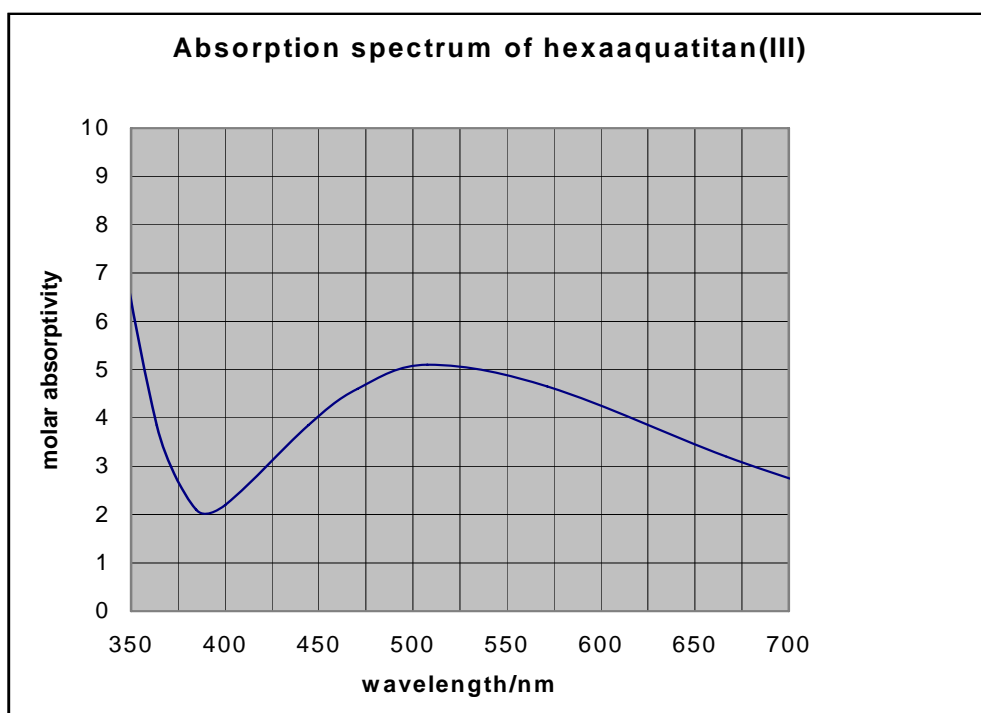


## $\text{Ti}(\text{H}_2\text{O})_6^{3+}$ in acidic aqueous solution



Experimental  $\Delta$ -values for water ( $\text{H}_2\text{O}$ ) as a ligand in hexaaquaions of di- and trivalent first row d-metal ions, and mean spin pairing-energies for the corresponding gaseous ions (the spin pairing energies in coordination compounds are around 20 % smaller than in the gaseous state)

Energy / $\text{cm}^{-1}$	Ti	V	Cr	Mn	Fe	Co	Ni	Cu
$\Delta$ from $\text{M}(\text{H}_2\text{O})_6^{2+}$		12200	13900	7800	10400	9700	8500	125000
$\Delta$ from $\text{M}(\text{H}_2\text{O})_6^{3+}$	20400	19000	17400	21000	14000	20000		
P $\text{M}^{2+}$			23500	25500	17600	22500		
P $\text{M}^{3+}$				28000	30000	21000	27000	