

Fig. 1. Spectra of $\text{Eu}(\text{OOCCH}_3)_3$ and $\text{Eu}(\text{OOCCD}_3)_3$ from 1800 to 500 cm^{-1} .

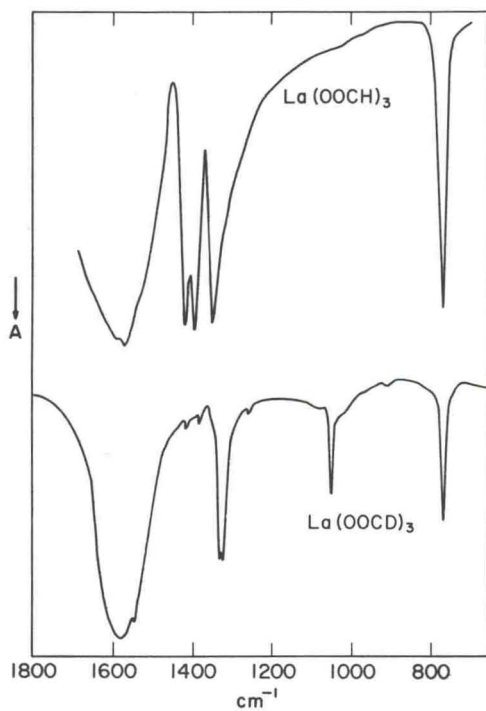
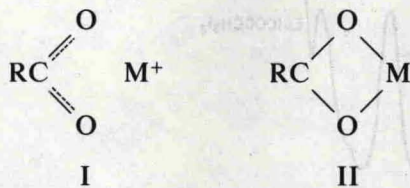


Fig. 2. Spectra of $\text{La}(\text{OOCH})_3$ and $\text{La}(\text{OOCD})_3$ from 1800 to 700 cm^{-1} .

Table 5. $\Delta\nu$ of symmetrical and asymmetrical carbonyl peaks

| | Rare earth present (cm^{-1}) | Sodium[4] (cm^{-1}) |
|---------|---|-----------------------------------|
| Acetate | 132 | 153 |
| Formate | 234 | 201 |

difference should be similar for the ionic structure (I) and the covalent chelate structure (II):



where the two CO vibrations for each structure are not expected to be much different from each other. This is noted in the experimental results which are shown in Table 5.

