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X-ray diffraction analyses were made for acids and esters as powder or melted layer.

The long spacings of acids and 1-monoglycerides were coincide with those of corresponding normal saturated fatty acids (C-form) and their 1-esters (β'-form), but their short spacings showed the shrinking effect of unit cell of them.

Physico-chemical Study of Coordination Compounds

Hidenari INOUE (井 上 秀 成)

Physico-chemical properties of coordination polymers such as $KM[Fe(CN)_6]$ (M=Mn, Fe, Co, Ni, etc.), $KM[Co(CN)_6]$, AgCN and AgSCN were studied by the observation of X-ray diffraction pattern, IR and electronic spectrum and conductivity measurement.

It was found that both $KM[Fe(CN)_6]$ and $KM[Co(CN)_6]$ were face-centered cubic and isomorphous each other, by X-ray diffraction analysis using powder method. The lattice constants of $KM[Co(CN)_6]$ type compounds decreased in the order of

$$KMn[Co(CN)_6] > KFe[Co(CN)_6] > KCo[Co(CN)_6] > KNi[CN)_6]$$

and this was inverse order of crystal field stabilization energy of M^{2+}. Similar relationship was also observed in $KM[Fe(CN)_6]$ type compounds.

All the IR spectra of C-N and M-C stretching vibration shifted to higher frequency side from those of $K_3[Fe(CN)_6]$, $K_3[Co-(CN)_6]$, KCN and KSCN. This cause could be explained by the effect of outer-sphere ion, M^{2+} which seemed to interact with nitrogen atom of CN^-.

As d-d transition and charge-transfer bands of both $KM[Fe(CN)_6]$ and $KM[Co(CN)_6]$ were observed in electronic spectra by KBr disk method, assignment of each band based on ligand field theory was given.

According to the measurements of conductivity-temperature dependence, all of $KM[Fe(CN)_6]$ type compds., a part of $KM[Co(CN)_6]$ type compds., AgCN and AgSCN were found to have a semiconductor property.

The Synthesis of Homogeneous Monoalkyloxy-(polyexothy)ethanols

Takamitsu ITOH (伊 藤 隆 允)

Although a number of investigations have been reported concerning the synthesis of homogeneous polyoxyethyleneglycolmonoalkylethers, very few have dealt with