In$_2$S$_3$ 및 In$_2$S$_3$:Co$^{2+}$ 단결정의 광학적 특성에 관한 연구

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Optical Properties of In$_2$S$_3$ and In$_2$S$_3$:Co$^{2+}$ single crystal
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Abstract : Single crystal of In$_2$S$_3$ and In$_2$S$_3$:Co$^{2+}$ were grown successfully with a good quality by the CTR(Chemical Transport Reaction) method. XRD analysis showed that the grown In$_2$S$_3$ and In$_2$S$_3$:Co$^{2+}$ single crystals were cubic structure. The optical absorption spectra of In$_2$S$_3$:Co$^{2+}$single crystal showed impurity absorption peaks due to cobalt impurity. These impurity absorption peaks were assigned to the ligand transition between the split energy levels of Co$^{2+}$ ions with $T_d$ symmetry of these semiconductor host lattice.