

**1-O-006 Light Effect on Cd and Zn K-Shell X-ray Intensity Ratios  
for Cd<sub>1-x</sub>Zn<sub>x</sub>S Thin Films**

*S. M. KARABIDAK, S. KAYA, U. ÇEVİK, E. BACAŞIZ*

*Karadeniz Teknik Üniversitesi Fen Edebiyat Fakültesi Fizik Bölümü*

*61080 Trabzon, TURKEY*

*selim\_kaya\_29@hotmail.com*

Cd<sub>1-x</sub>Zn<sub>x</sub>S (0 ≤ x ≤ 1) thin films were prepared by spray pyrolysis method. X-ray fluorescence studies were carried out for the films deposited with different concentrations. The light effect on K<sub>β</sub>/K<sub>α</sub> intensity ratio in Cd<sub>1-x</sub>Zn<sub>x</sub>S semi-conductor thin films and on structural, optical properties of these alloys were investigated. The sample was excited by gamma rays with energy 59.5 keV photons from an Am-241 radioisotope source. K X-rays emitted by the sample were counted with a Si(Li) detector. The Cd K and Zn K X-ray intensities were measured in two different media, dark and under 80 mW/cm<sup>2</sup> light source. We found that the K<sub>β</sub>/K<sub>α</sub> intensity ratio is changed by the light effect in Cd<sub>1-x</sub>Zn<sub>x</sub>S semi-conductor alloys for different compositions x. The result show that decreasing Cd K<sub>β</sub> X-ray intensities with the effect of light, IK<sub>β</sub> / IK<sub>α</sub> X-ray intensity ratios have decreased.