

Abstract Submitted  
for the MAR08 Meeting of  
The American Physical Society

**Electroluminescence of a ZnS-based powder phosphor**<sup>1</sup> SO YEON JUN, Hankuk Univ. Foreign Studies, JIN-YOUNG KIM, Sungkyunkwan Univ., SANG HYEUN PARK, Samsung Adv. Inst. Technol., SEGI YU, Hankuk Univ. Foreign Studies — Electroluminescence (EL) and photoluminescence (PL) spectra of carbon nanotube (CNT) incorporated ZnS:Cu,Al inorganic powder phosphors under an AC voltage were analyzed by comparing with bare ZnS:Cu,Al powder. The spectra was obtained at room temperature with a He-Cd laser and a single grating monochrometer. By varying the frequency of the applied ac voltage, the PL and EL spectra yield distinct difference in the peak position, width, and intensity of the luminescence. As the concentration of CNTs were increased, the separation between the two luminescence peaks, which were analyzed by the Gaussian fitting, shrank. However, the spectra showed little different behavior for the voltage variation at fixed frequency. The underlying mechanism for this frequency dependence on CNT incorporation and EL performance enhancement will be mentioned in this poster.

<sup>1</sup>This work was supported by the Korea Research Foundation Grant. (KRF-2006-331-C00113)

SeGi Yu  
Hankuk Univ. Foreign Studies

Date submitted: 27 Nov 2007

Electronic form version 1.4