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탄소나노튜브와 ZnS:Cu,Cl 형광체 무기 EL

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Electroluminescence (EL) characteristics of green-emission ZnS:Cu,Cl-based ac-type inorganic powder electroluminescent structures were examined by inserting carbon nanotubes (CNTs) into or next to the dielectric layer. For the top-emission type EL structure, where the luminescent light was emitted from the top of the structure, was fabricated by assembling in order, a top electrode, an emitting layer, a dielectric layer, and a bottom electrode from the top. $BaTiO_3$ powder mixed with CNTs was used as a dielectric layer or CNTs were deposited between the bottom electrode and $BaTiO_3$ dielectric layer in order to improve the role of the dielectric layer in the structure. Luminance of an EL structure with CNTs inclusion was greatly enhanced possibly due to the high dielectric constant in the dielectric layer of $BaTiO_3$/CNTs, which is one of hot research topics utilizing nano-objects for intensifying dielectric constant and reducing dielectric loss at the same time. A variation on the CNTs themselves and their inclusion methods in the dielectric layer has been exhorted, and the underlying mechanism for the role of CNTs in the EL structure will be explained in the poster. In order to extend the flexibility of EL devices, EL devices were fabricated on the paper substrate and their performance was compared other EL devices on the plastic-based substrate. *segiyu@hufs.ac.kr